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Design Analysis Cover Sheet

Complete only applicable items.

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of: 57

2. DESIGN ANALYSIS TITLE

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14. REMARKS

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1. Purpose

This analysis is prepared by the Mined Geologic Disposal System (MGDS) Waste Package Development Department (WPDD) as specified in the Waste Package Implementation Plan (pp. 4-8, 4-11, 4-24, 5-1, and 5-13; Ref. 5.10) and Waste Package Plan (pp. 3-15, 3-17, and 3-24; Ref. 5.9). The design data request addressed herein is:

- 1) Characterize the conceptual defense high-level waste (DHLW) disposal container design to show that the design is feasible for use in the MGDS environment when loaded with a borosilicate glass waste form which is based upon the reference 5.12 and 5.14 glass waste form characterization data.

The purpose of this analysis is to respond to a concern that the long-term disposal thermal issues for the conceptual DHLW disposal container design do not preclude compatibility with the MGDS when loaded with the specified anticipated waste forms. The objective of this analysis is to provide thermal parameter information for the conceptual DHLW disposal container design loaded with a borosilicate glass waste form under nominal MGDS repository conditions. The results are intended to show that the design loaded with this waste form has a reasonable chance to meet the MGDS design requirements for normal MGDS operation and to provide the required guidance to determining the major design issues for future design efforts. Future design efforts will focus on specific DHLW vendor designs and improved waste form data when they become available.

2. Quality Assurance

The Quality Assurance (QA) program does apply to this analysis. The information in this analysis concerning disposal long-term thermal parameters for the conceptual DHLW disposal container will be used as a guide as to the possible requirements which might be used in the DHLW disposal container design. The performance of the DHLW disposal container internals will affect the proper function of the waste package and the waste package has been identified as an MGDS Q-List item important to safety (p. 5, Ref. 5.4). The waste package is on the Q-List by direct inclusion by DOE without conducting a QAP-2-3 evaluation. The work performed for this analysis is covered by reference 5.2, Perform Criticality, Thermal, Structural, and Shielding Analysis, which is part of the WPDD QAP-2-0 Work Control evaluation documents. This QAP-2-0 evaluation determined such activities are subject to Quality Assurance Requirements and Description (QARD) (Ref. 5.3) requirements. Applicable procedural controls are listed in the evaluation.

All design inputs which are identified in this document are for pre-Title II (conceptual or preliminary) designs; some or all of these design inputs will require subsequent qualification (or superseding inputs) as the waste package design proceeds. For design documents subject to the

QARD requirements, unqualified design inputs must be considered as TBV (to be verified) items subject to tracking, in accordance with applicable procedures. The design inputs identified and documented in Section 4 have been assigned the single tracking number TBV-215-WPD, to meet tracking requirements.

3. Method

The analytical method to be employed is Finite Element Analysis (FEA). The analysis will build upon the Emplacement Scale Thermal Evaluations (Ref. 5.13) by using the results for the drift wall surface temperatures from the three-dimensional emplacement scale model. The DHLW pour canister is modeled in three dimensions as the Savannah River Plant (SRP) design presented in references 5.12 (pp. 3.3-4 and 3.3-5) and 5.32. A number of SRP pour canisters are sealed inside the disposal container which is then placed between two SNF waste packages in the MGDS drift. The drift wall is modeled as a shell which holds the boundary condition. Radiative heat transfer is modeled between the pour canisters and the inside of the disposal container as well as between the outside of the disposal container and the drift wall. The calculation shall be performed in order to evaluate the first 1000 years of proposed repository operation.

4. Design Inputs

All design inputs are for pre-Title II designs; some or all of these design inputs will require subsequent qualification (or superseding inputs) as the waste package design proceeds. The design inputs identified and documented in Section 4 have been assigned the single tracking number TBV-215-WPD, to meet tracking requirements in accordance with applicable procedures.

4.1 Design Parameters

Tables 4.1-1 and 4.1-2 list the material and thermal properties of density, emissivity, thermal conductivity, and specific heat of stainless steel 316 (see assumption 4.3.27). The density of 316 stainless steel provided in Table 4.1-1 was taken from Table 17 of the Metals Handbook (p. 423, Ref. 5.18). The emissivity provided in Table 4.1-1 was taken from Table 4.3.2 of Marks' Handbook (p. 4-68, Ref. 5.17) and is about average for heated stainless steel 316.

Table 4.1-1. Material Properties of Stainless Steel 316 (Refs. 5.17 and 5.18)

	Density	Emissivity
Stainless Steel 316	8000.0 kg/m ³	0.60

Table 4.1-2. Thermal Properties of Stainless Steel 316 (Ref. 5.15)

Temperature		Thermal Conductivity (Btu/hr·ft·°F)	Thermal Diffusivity (ft ² /hr)	Thermal Conductivity (W/m·K)	Specific Heat (J/kg·K)
°F	°C				
100	37.78	7.9	0.136	13.67	486.92
150	65.56	8.2	0.138	14.19	498.09
200	93.33	8.4	0.141	14.54	499.38
250	121.11	8.7	0.143	15.06	509.98
300	148.89	9.0	0.145	15.58	520.29
350	176.67	9.2	0.148	15.92	521.07
400	204.44	9.5	0.151	16.44	527.38
450	232.22	9.8	0.153	16.96	536.92
500	260.00	10.0	0.156	17.31	537.34
550	287.78	10.3	0.159	17.83	543.02
600	315.56	10.5	0.162	18.17	543.31
650	343.33	10.7	0.164	18.52	546.91
700	371.11	11.0	0.167	19.04	552.14
750	398.89	11.2	0.170	19.38	552.26
800	426.67	11.5	0.173	19.90	557.22
850	454.44	11.7	0.176	20.25	557.25
900	482.22	12.0	0.178	20.77	565.11
950	510.00	12.2	0.181	21.11	565.01
1000	537.78	12.4	0.184	21.46	564.91
1050	565.56	12.7	0.186	21.98	572.35
1100	593.33	12.9	0.189	22.33	572.14
1150	621.11	13.1	0.191	22.67	574.92
1200	648.89	13.3	0.194	23.02	574.68
1250	676.67	13.6	0.196	23.54	581.64
1300	704.44	13.8	0.199	23.88	581.30
1350	732.22	14.0	0.201	24.23	583.86
1400	760.00	14.2	0.203	24.58	586.36
1450	787.78	14.4	0.206	24.92	585.96
1500	815.56	14.6	0.208	25.27	588.39

Table 4.1-3. Thermal Properties of Alloy 825 (Ref. 5.15)

Temperature		Thermal Conductivity (Btu/hr·ft·°F)	Thermal Diffusivity (ft ² /hr)	Thermal Conductivity (W/m·K)	Specific Heat (J/kg·K)
°F	°C				
200	93.33	7.1	0.127	12.29	460.69
250	121.11	7.3	0.126	12.63	477.42
300	148.89	7.6	0.125	13.15	501.02
350	176.67	7.9	0.129	13.67	504.65
400	204.44	8.1	0.134	14.02	498.12
450	232.22	8.4	0.133	14.54	520.45
500	260.00	8.6	0.132	14.88	536.88
550	287.78	8.9	0.131	15.40	559.85
600	315.56	9.1	0.130	15.75	576.83
650	343.33	9.3	0.133	16.10	576.21
700	371.11	9.6	0.136	16.61	581.68
750	398.89	9.8	0.135	16.96	598.20
800	426.67	10.0	0.133	17.31	619.58
850	454.44	10.2	0.132	17.65	636.76
900	482.22	10.4	0.131	18.00	654.20
950	510.00	10.7	0.130	18.52	678.25
1000	537.78	10.9	0.129	18.86	696.29
1050	565.56	11.1		19.21	
1100	593.33	11.4		19.73	
1150	621.11	11.6		20.08	
1200	648.89	11.8		20.42	
1250	676.67	12.1		20.94	
1300	704.44	12.4		21.46	
1350	732.22	12.7		21.98	
1400	760.00	12.9		22.33	
1450	787.78	13.3		23.02	
1500	815.56	13.6		23.54	

Table 4.1-2 lists the thermal properties of stainless steel 316. Values for thermal conductivity and thermal diffusivity of stainless steel 316 (Cr-Ni-Mo) were taken from Table I-4.0, Appendix I of the 1986 ASME Boiler and Pressure Vessel Code (p. 97, Ref. 5.15) and are converted here to conductivity and specific heat in SI units. The conversion of thermal diffusivity (defined in equation 4.1-1 below) to specific heat requires the density listed in Table 4.1-1.

$$\text{Thermal Diffusivity}(\text{ft}^2/\text{hr}) = \frac{\text{Thermal Conductivity}(\text{Btu/hr ft}^\circ\text{F})}{\text{Density}(\text{lb/ft}^3) \times \text{Specific Heat}(\text{Btu/lb}^\circ\text{F})}$$

(Equation 4.1-1)

Tables 4.1-3 and 4.1-4 list the material and thermal properties of density, emissivity, thermal conductivity, and specific heat of Alloy 825 (see assumption 4.3.28). The density of Alloy 825 (Ni-Fe-Cr-Mo-Cu) provided in Table 4.1-4 was taken from the product specifications published by the manufacturer; Huntington Alloys (p. 31, Ref. 5.19). The emissivity of Alloy 825 (Ni-Fe-Cr-Mo-Cu) provided in Table 4.1-4 was taken from the LLNL report on the Thermal Performance of a Buried Nuclear Waste Storage Container Storing a Hybrid Mix of PWR and BWR Spent Fuel Rods (p. 15, Ref. 5.20).

Table 4.1-4. Material Properties of Alloy 825 (Refs. 5.19 and 5.20)

	Density	Emissivity
Alloy 825	8137.9 kg/m ³	0.80

Table 4.1-3 lists the thermal properties of Alloy 825. Values for thermal conductivity and thermal diffusivity of Alloy 825 (Ni-Fe-Cr-Mo-Cu) were taken from Table I-4.0, Appendix I of the 1986 ASME Boiler and Pressure Vessel Code (p. 97, Ref. 5.15) and are converted here to conductivity and specific heat in SI units. The conversion of thermal diffusivity (defined in equation 4.1-1) to specific heat requires the density listed in Table 4.1-4.

Table 4.1-5 lists the thermal properties of helium (see assumption 4.3.26). Values for thermal conductivity and thermal diffusivity of helium were taken from Table A.4, Appendix A of a standard heat transfer text (p. 683, Ref. 5.16). Indicated values were linearly interpolated from the data supplied in the reference.

Table 4.1-5. Thermal Properties of Helium (Ref. 5.16)

Temperature		Helium Density at 1 atm. (kg/m ³)	Thermal Conductivity (W/m·K)	Specific Heat (J/kg·K)
K	°C			
260	-13.15	0.1875	0.137	5193.0
280	6.85	0.1750*	0.145	5193.0
300	26.85	0.1625	0.152	5193.0
350	76.85	0.1422*	0.170	5193.0
400	126.85	0.1219	0.187	5193.0
450	176.85	0.1097*	0.204	5193.0
500	226.85	0.0975	0.220	5193.0
550	276.85	0.0906*	0.236*	5193.0
600	326.85	0.0836*	0.252	5193.0
650	376.85	0.0767*	0.264	5193.0
700	426.85	0.0697	0.278	5193.0
750	476.85	0.0662*	0.291	5193.0
800	526.85	0.0627*	0.304	5193.0
900	626.85	0.0558*	0.330	5193.0
1000	726.85	0.0488	0.354	5193.0

* Values marked with an * were linearly interpolated from the table because values were not given.

Table 4.1-6 lists the thermal properties of C71500 70/30 copper-nickel alloy (see assumption 4.3.29). Values for thermal conductivity for C71500 70/30 copper-nickel alloy were taken from Tables 2-46 and 2-48 of a report issued by Yucca Mountain Site Characterization Project which provided basic design data (p. 44, Ref. 5.21). The density and specific heat of C71500 70/30 copper-nickel alloy were taken from Table 2-46 of the same report (p. 43, Ref. 5.21).

Table 4.1-6. Thermal Properties of C71500 70/30 Copper-Nickel Alloy (Ref. 5.21)

Temperature		C71500 Density (lb/in ³)	C71500 Density (kg/m ³)	Thermal Conductiv ity (Btu/ hr·ft ·°F)	Thermal Conductiv ity (W/m·K)	Specific Heat (Btu/ lb·°F)	Specifi c Heat (J/kg· K)
°F	°C						
68.0	20	0.323	8940.64	17.0	29.42	0.09	376.79
212.0	100			16.9	29.25		
392.0	200			19.7	34.09		
572.0	300			22.3	38.59		
752.0	400			24.9	43.09		
832.0	500			27.8	48.11		
1112.0	600			30.7	53.13		
1292.0	700			33.6	58.15		

The emissivity of C71500 70/30 copper-nickel alloy was not available as indicated in Table 2-46 of reference 5.21. Thus, the emissivity of C71500 will need to be approximated (see assumption 4.3.29). Reference 5.16 (p. 787, Table A.11) indicates the emissivity of oxidized nickel at 600 K (327°C) to be 0.40 and the emissivity of oxidized copper at 600 K (327°C) to be 0.50. The analysis presented here uses the emissivity of oxidized nickel to approximate the emissivity of C71500 (see assumption 4.3.29).

Table 2 of Section 1.12 of the Yucca Mountain Project Reference Information Base (RIB, p.5, Ref. 5.11) provides corrected depths to rock unit lower contacts from borehole USW G-4 (see assumption 4.3.30). These depths are listed here in Table 4.1-7 for the rock units considered in this analysis (see assumption 4.3.30). Table 2 of Section 1.1326 of the RIB (p.9, Ref. 5.11) provides mean-value in-situ-saturation estimates for the rock mass thermal conductivity for some of the rock units. These values are also listed here in Table 4.1-7 and in reference 5.13.

Table 4.1-7. Stratigraphy for Borehole USW G-4 (Ref. 5.11 and 5.13)

Rock Unit	Corrected Lower Contact	Thermal Conductivity
Ground Level	0 m (0 ft)	N/A
Undifferentiated Overburden	9.1 m (30 ft)	(see Ref. 5.13)
TCw Lithophysae Poor TCw Lithophysae Rich (TCw Average)	36.0 m (118 ft)	1.73 W/m·K 1.59 W/m·K (1.66 W/m·K) (see Ref. 5.13)
PTn Welded, Devitrified PTn Non-welded or Bedded	74.1 m (243 ft)	1.60 W/m·K 0.85 W/m·K (see Ref. 5.13)
TSw1 Lithophysae Poor TSw1 Lithophysae Rich (TSw1 Average)	204.2 m (670 ft)	1.70 W/m·K 1.60 W/m·K (1.65 W/m·K) (see Ref. 5.13)
TSw2	393.5 m (1291 ft)	2.10 W/m·K
TSw3	409.3 m (1343 ft)	1.28 W/m·K
CHn1v	414.5 m (1360 ft)	1.20 W/m·K
CHn1z	518.5 m (1701 ft)	1.28 W/m·K
CHn2v CHn2z (CHn2 Average)	535.2 m (1756 ft) (see Ref. 5.13)	1.20 W/m·K 1.56 W/m·K (1.38 W/m·K) (see Ref. 5.13)

Table 6 of Section 1.1326 of the RIB (p.11, Ref. 5.11) gives the thermal capacitance of the rock mass at selected temperatures for nine of the thermal/mechanical rock units. They are repeated here in Table 4.1-8. Thermal capacitance is the product of specific heat and density. Therefore, for the emplacement thermal model, the below values were converted to $\text{J/m}^3 \cdot \text{K}$ (multiplied by 1×10^6) and entered as temperature-dependent specific heats with all rock densities equal to 1.0 kg/m^3 (see assumption 4.3.30 and reference 5.13).

Table 4.1-8. Thermal Capacitance of Rock Units ($\text{J/cm}^3 \cdot \text{K}$) (Ref. 5.11 and 5.13)

Temp.	TCw	PTn	TSw1	TSw2	TSw3	CHn1v	CHn2v	CHn2*
25°C	1.9263	2.1164	1.9779	2.0324	1.8443	2.4436	2.6032	2.4309
50°C	2.0183	2.2196	2.0654	2.1280	2.0315	2.5557	2.6647	2.5385
94°C	2.1494	2.3498	2.1891	2.2638	2.2831	2.6960	2.7447	2.6803
95°C	9.6274	30.3260	12.6294	10.7683	4.5590	36.6013	36.6069	27.9869
105°C	9.3665	29.2767	12.2534	10.4690	4.5188	35.3263	35.3440	27.0553
114°C	9.1306	28.3302	11.9138	10.1984	4.4800	34.1764	34.2053	26.2146
115°C	1.9278	1.3695	1.8555	2.0065	2.2953	1.5013	2.7914	2.5644
155°C	2.0272	1.4612	1.9641	2.1114	2.4489	1.6018	2.7419	2.5935
195°C	2.1053	1.5358	2.0264	2.1912	2.5740	1.6836	2.6707	2.5985
235°C	2.1802	1.5986	2.0985	2.2692	2.6792	1.7525	1.5814	1.9820
275°C	2.2492	1.6529	2.1649	2.3410	2.7702	1.8120	1.6320	2.0474

* CHn2 values are the average of CHn2v and CHn2z (see assumption 4.3.30)

Table 4.1-9 lists the thermal properties of typical concrete to be used as the drift invert (see assumption 4.3.31). These values were taken from Tables A.3 and A.11 of a standard heat transfer textbook (pp. 773 and 788, Ref. 5.16) for a temperature of 300 K. These values are also used in the analysis presented in reference 5.13.

Table 4.1-9. Material Properties of Concrete Invert (Ref. 5.16 and 5.13)

	Conductivity	Density	Specific Heat	Emissivity
Concrete Invert	1.4 W/m·K	2300.0 kg/m ³	880.0 J/kg·K	0.88

Table 4.1-10 lists the thermal properties of pyrex glass to be used as an approximation to borosilicate glass (see assumption 4.3.32). The values for density and specific heat were taken from Table A.3 of a standard heat transfer textbook (p.774, Ref. 5.16) for a temperature of 300 K. The value for emissivity was taken from Table A.11 of a standard heat transfer textbook (p. 778, Ref. 5.16) and represents an average of the emissivities for the temperatures of 300 K (0.82) and 600 K (0.80). The value for thermal conductivity is the mid-range value for borosilicate glass reported in Table 11.7 (p. 584) of reference 5.8 for a temperature range of 100°C to 500°C. This is slightly less than the value for pyrex glass reported in Table A.11 (p. 778, Ref. 5.16) of 1.4 W/m·K. The lower value is used in this analysis (see assumption 4.3.32).

Table 4.1-10. Material Properties of Borosilicate Glass (Ref. 5.8 and 5.16)

	Conductivity	Density	Specific Heat	Emissivity
Borosilicate Glass	1.1 W/m·K	2225.0 kg/m ³	835.0 J/kg·K	0.81

4.2 Criteria

The design of the engineered barrier (EB) segment will depend on thermal analysis of the repository host rock and near-field. Criteria that relate to the thermal analysis of the EB segment are derived from the applicable requirements and planning documents. Upper-level systems requirements are provided in the Mined Geologic Disposal System Requirements Document (MGDS-RD) (Ref. 5.6). The requirements flow down to the Engineered Barrier Design Requirements Document (EB-DRD, Ref. 5.5) as specific requirements for engineered barrier segment design. The Waste Package Implementation Plan (WPIP) (Ref. 5.10) also provides criteria and goals for the thermal design of the EB Segment. The criteria applicable to thermal analysis of waste package emplacement are equivalent to the applicable requirements, interface requirements, and criteria cited in the MGDS-RD, EB-DRD, WPIP and all requirements which apply to thermal analysis are listed in this section for completeness.

4.2.1 MGDS-RD Requirements for Thermal Design

The criteria applicable to thermal analysis of waste package emplacement which appear in the MGDS-RD (pp. 29, 44, 107; Ref. 5.6) but do not appear in the EB-DRD are listed here:

"3.1.5 Major Considerations and Assumptions

...
M.

It is assumed that loaded MPCs emplaced for disposal will have a maximum thermal output of 14.2 kilowatts. Accommodation of this condition will require management of the waste delivery schedule or

storage of loaded MPCs with a higher thermal output until the thermal output has decreased to 14.2 kilowatts. This 14.2 kilowatts is equivalent to the thermal output of 21 PWR assemblies with 40 GWd/MTU burnup and 3.75% initial enrichment 10 years after discharge from a reactor. (Twenty-one assemblies represents the capacity of one of several potential MPC configurations.)"

"3.2.3.2.3 MGDS-Transportation Interface Requirements

- ...
- J. The MGDS shall provide an emplacement environment (e.g., waste package design, underground facility design, emplacement mode or orientation, spacing between waste packages, etc.) for the MPC with disposal container, such that an emplaced waste package with thermal output of 14.2 kW will not result in an MPC surface temperature higher than 225°C <TBR> [Ref 2.4.2.C][RW-0199][10 CFR 60.135(a)(2)][Derived by 3.2.1.1.H]

The MPC Design is responsible for maintaining the peak SNF cladding temperature below the maximum temperature designated for disposal. To meet this requirement, the peak cladding temperature in a loaded MPC with a thermal output of 14.2 kW may not exceed 350 C when subjected to an MPC external wall temperature of 225°C."

"3.7.3.3 Waste Package Requirements

- ...
- B.2. Waste packages shall be emplaced in an environment (e.g., waste package design, underground facility design, emplacement mode or orientation, spacing between waste packages, etc.), such that SNF cladding temperatures in an emplaced waste package do not exceed 350°C <TBR>. [10 CFR 60.135(a)(2)][Derived by CRD 3.2.1.1.H]"

4.2.2 EB-DRD Requirements for Thermal Design

The criteria applicable to thermal analysis of waste package emplacement are equivalent to the applicable requirements in the EB-DRD (pp. 3-10, 3-14, 3-21, 3-23, 3-25, 3-26, 3-47, 3-49, 3-50, 3-53, and 3-54; Ref. 5.5) and are listed here:

"3.1.5 MAJOR CONSIDERATIONS AND ASSUMPTIONS

- ...
- B. The assumption used in developing this EB-DRD is that the extent of blending (i.e., the mixing in waste packages of SNF and/or HLW of different thermal

outputs) required is limited to that which can be accommodated by the WA process.

Thermal loading studies will determine the extent of blending that must occur. Limited blending can be accomplished at the MRS through the WA process. If significant blending is required, this could have a major impact on the MRS and/or MGDS design and operations, and will be the subject of system studies. If these studies show that changes in system design requirements are necessary, the RDs will be revised."

"3.2.2 RADIOLOGICAL PROTECTION

3.2.2.1 GENERAL REQUIREMENTS

...

- C. The Engineered Barrier Segment, together with the Repository Segment, shall provide adequate shielding from radioactive components and high ambient temperatures. [Derived]"

"3.2.3.3 ENGINEERED BARRIER SEGMENT - REPOSITORY SEGMENT INTERFACE REQUIREMENTS

...

- A.8. The Repository Segment will accommodate the emplacement concept (TBD) selected during ACD. [Derived]

...

- b. The Repository Segment design will prevent free-liquid-phase water from contacting the waste package during the period from package insertion until repository closure. [Derived]

- c. The Repository Segment layout will be designed so that a combination of characteristics will assist in keeping liquid water from contacting the waste packages for the first 300 to 1000 (TBV) years after closure. [Derived]

- d. The Repository Segment layout will also ensure that the design limit temperatures (TBD) for waste forms are not exceeded. [Derived]

...

- A.10 If the design requires the waste form to be transferred for any purpose (such as from shipping casks to waste packages), the Repository Segment is responsible for the following:

...

- b. Repository Segment options at the surface handling facility will be designed so that cladding failure from mechanical abrasion or

deformation considering thermally-induced effects will result in less than five percent (TBV) cladding strain. [Derived]

...

- A.17 The underground facility will be designed so that the performance objectives will be met taking into account the predicted thermal and thermo-mechanical response of the host rock, and surrounding strata, and ground water system. [MGDS-RD 3.7.3.4.C][10 CFR 60.133(i)]"

"3.2.3.4 ENGINEERED BARRIER SEGMENT - WASTE ACCEPTANCE INTERFACE REQUIREMENTS

...

- A. WA will provide standard HLW meeting the following criteria:

...

- 1.e. Total heat generation rate: Up to 1500 watts per canister (TBV) at the year of shipment.

- 1.f. Waste temperature: Will not have exceeded 400°C (TBV) during transit to ensure the glass transition temperature was not exceeded. [MGDS-RD 3.2.3.2.2.B.1]

...

- C. WA will provide standard SNF meeting the following criteria:

...

- 1.b. Cross-section: 6 inches x 6 inches or less for BWR and 9 inches x 9 inches or less for PWR (TBV). [MGDS-RD 3.2.3.2.2.A.1][10 CFR 961.11, App. E, B.1]

...

- 1.d. Cooling: The minimum cooling time for fuel is five (5) years. [MGDS-RD 3.2.3.2.2.A.1][10 CFR 961.11, App. E, B.3]

...

- 1.f. Consolidated Fuel Rods: Fuel which has been disassembled and stored with the fuel rods in a consolidated manner shall be classified as Nonstandard Fuel Class NS-5. [MGDS-RD 3.2.3.2.2.A.1][10 CFR 961.11, App. E., B.5]

...

2. Temperature will not have exceeded 350°C (TBV) during storage under inert gas. [Derived]"

"3.7 ENGINEERED BARRIER SEGMENT MAJOR COMPONENT CHARACTERISTICS/REQUIREMENTS

The major components of the Engineered Barrier Segment are the waste packages, the underground facility, any backfill placed in the emplacement drifts, and any

emplacement hardware provided to support and protect the emplaced waste package. (The underground facility portion of the Engineered Barrier Segment and the associated requirements allocated to the EB-DRD by the MGDS-RD are identified as interfaces with the Repository Segment in Section 3.2.3.3.) These major components shall be capable of contributing to the assigned function, Isolate Waste (1.4.3), by containing waste in the waste package during the containment period of 300 to 1,000 years (TBR), and then by limiting the release of radionuclides during the post-containment period.

[MGDS-RD 3.7.3.1.A, B] [CRD 3.7.4.1.1]

...

G. To limit the predicted thermal and thermo-mechanical response of the host rock and surrounding strata, and groundwater system, the Engineered Barrier Segment configuration and loading shall:

1. Limit borehole wall temperature (if a borehole is used) to 275°C (TBV)
2. Limit the maximum temperature 1 meter into the rock to 200°C (TBV)
3. Limit the TSw3 (vitrophyre tuff) maximum temperature to 115°C (TBV)
4. Limit the maximum ground surface temperature change in the vicinity of the repository to 6°C (TBV)
5. Limit the emplacement drift maximum temperature to 100°C (TBV)
6. Limit the access drift maximum temperature to 50°C (TBV)

[MGDS-RD 3.7.3.4.C] [10 CFR 60.133(i)]"

"3.7.1 WASTE PACKAGE SUBSYSTEM REQUIREMENTS

...

B. The design of waste packages shall include, but not limited to, consideration of the following factors: solubility, oxidation/reduction reactions, corrosion, hydriding, gas generation, thermal effects, mechanical strength, mechanical stress, radiolysis, radiation damage, radionuclide retardation, leaching, fire and explosion hazards, thermal loads, and synergistic interactions.

[MGDS-RD 3.7.3.3.B] [10 CFR 60.135(a)(2)]"

"3.7.1.3 INTERNAL STRUCTURE REQUIREMENTS

...

G. The internal structure shall maintain functionality under the thermal and chemical conditions generated by the waste form. [Derived]"

"3.7.2 BACKFILL REQUIREMENTS

...

- C. The transfer of heat from the waste package to the geologic setting by the backfill material shall not have an adverse effect on the long term performance of the WP.
[Derived]

...

- F. The chemical and mechanical stability of the backfill when subjected to the maximum thermal environment anticipated in the repository shall not have an adverse effect on the long term performance of the waste package.
[Derived]"

4.2.3 WPIP Criterion for Thermal Design

The impetus to perform thermal evaluations of the waste package and near-field is provided by the Waste Package Implementation Plan (WPIP, Ref. 5.10). Design goals and the activities supporting these goals are listed in the WPIP. The source of the design goals is, for the most part, the Engineered Barrier Design Requirements Document and for the remainder the design goals were selected based upon engineering judgement. Design goals related to thermal analysis are listed in Section 2.4 of the WPIP (p. 2-4; Ref. 5.10) and provide basic thermal criteria for the design of the EBS:

"2.4 DESIGN GOALS

...

- Center line fuel pin temperature limit of (to be determined (TBD)) °C
- Rock wall temperature limit of (TBD) °C
- Thermal loading of the repository (TBD)

...

The maximum temperature of the glass waste forms must be maintained below limits established for them. This limit is about 500°C (to be verified) for West Valley Defense High-Level Waste glass. The YMP and the glass producers have the responsibility to maintain the peak temperature below the transition temperature.

...

- Meet temperature limits for components
- Provide for a range of thermal loads
- Provide capability to adjust repository thermal loading after emplacement"

Activities to support the design goals related to thermal analysis are indicated in Sections 3.4, 4.5, and 5.1 of the WPIP (pp. 3-2, 4-31, and 5-1; Ref. 5.10):

"3.4 PERFORMANCE ALLOCATION

... Thermal analyses will be performed to determine the temperature profiles across the drifts for drift emplacement. Limited thermal analyses will also be performed for the borehole emplacement modes, assuming various package sizes and thermal loadings. These analyses will permit the re-evaluation of the goals given in the SCP for performance measures. ..."

"4.5 ENVIRONMENTAL INFORMATION NEEDS

...

4.5.2 Hydrologic Properties

Determine hydrologic (and thermal) properties of the WP environment in order to:

- Develop comprehensive model of the thermal and hydrologic behavior of the waste package environment as a function of overall repository thermal loading and rock properties, including two phase fluid flow.
- Use the model to forecast the near field temperature and fluid flow; these near field parameters will be used by the M&O Waste Package Development, M&O PA, and LLNL to calculate/forecast the WP temperatures (surface and centerline) and the distribution of corrosion rates and package lifetimes (as input to the models determined by the chemical and mineralogical properties investigation described above)."

"5.1 WP/EBS DESIGN ACTIVITIES

...

2. Thermal Evaluation (time dependent)**2.1. Internal**

2.1.1. SNF and HLW

2.1.2. WP basket

2.1.3. WP internal barrier(s)

2.1.4. WP body

2.1.5. Closure

2.2. External, EBS and near field

2.3. Receipt rate and thermal variability"

4.2.4 Thermal Goals for EBS Design

Based on assumption 4.3.1, the requirements of the EB-DRD (Ref. 5.5), and the design goals of the WPIP (Ref. 5.10), the following thermal criteria are established for the design of the EB segment:

- Keep the rock mass temperature at 1 meter from a vertical borehole less than 200°C.
- Keep the emplacement drift wall temperature less than 200°C.
- Limit the TSw3 (basal vitrophyre) maximum temperature to less than 115°C.
- Limit the maximum ground surface temperature change in the vicinity of the repository to less than 2°C.
- Limit the emplacement drift maximum temperature for borehole emplacement to less than 100°C.
- Limit the access drift wall rock maximum temperature to less than 50°C during preclosure.
- Limit the CHn maximum temperature to less than 115°C.
- Limit the PTn (Upper Paint Brush non-welded) maximum temperature to less than 115°C.
- Limit the SNF cladding maximum temperature to less than 350°C.
- Limit the high-level waste glass maximum temperature to less than 500°C.
- The structural strength of any material component of the waste package shall not be compromised by temperature/environment of the EBS environment.
- Maximize the time the waste package container stays above boiling consistent with the thermal strategy developed.

The above thermal criteria are in addition to those previously quoted from the EB-DRD (Ref. 5.5).

4.2.5 Thermal Goals/Criterion Addressed by this Analysis

Based on assumption 4.3.1, the requirements listed in the previous sections, and the design goals of the WPIP (Ref. 5.10), the following thermal criteria are to be addressed by this analysis:

- Limit the high-level waste glass maximum temperature to less than 500°C.
- The structural strength of any material component of the waste package shall not be compromised by temperature/environment of the EB segment environment.

4.3 Assumptions

All design inputs are for pre-Title II designs; some or all of these design inputs will require subsequent qualification (or superseding inputs) as the waste package design proceeds. The design inputs identified and documented in Section 4 have been assigned the single tracking number TBV-215-WPD, to meet tracking requirements in accordance with applicable procedures.

4.3.1 The following thermal criteria are assumed to apply to the design of the Engineered Barrier Segment. These criteria are consistent with current program decisions in the Controlled Design Assumption Document (CDA, Ref. 5.7). The criteria are originally based on a reevaluation of the Site Characterization Plan (SCP) thermal goals (Table 3, p. 22, Ref. 5.29). Each thermal criterion is listed here followed by its CDA or SCP reference. This assumption is used in Section 4.2. As specified in Section 4.2.5, only the 500°C glass matrix temperature and the material structural strength criteria are used directly for this analysis. These two criteria are used throughout Section 7. However, the other listed items are used in reference 5.13 and were used to generate the waste package surface boundary condition used for this analysis. They are listed here in the interests of consistency.

- Keep the rock mass temperature at 1 meter from a vertical borehole less than 200°C. (CDA EB-DRD 3.7.G.2, p. 6-76, Ref. 5.7)
- Keep the emplacement drift wall temperature less than 200°C. (CDA EB-DRD 3.7.G.2, p. 6-76, Ref. 5.7)
- Limit the TSw3 (basal vitrophyre) maximum temperature to less than 115°C. (CDA EB-DRD 3.7.G.3, p. 6-77, Ref. 5.7)
- Limit the maximum ground surface temperature change in the vicinity of the repository to less than 2°C. (CDA EB-DRD 3.7.G.4, p. 6-78, Ref. 5.7)
- Limit the emplacement drift maximum temperature for borehole emplacement to less than 100°C. (CDA EB-DRD 3.7.G.5, p. 6-79, Ref. 5.7)
- Limit the access drift wall rock maximum temperature to less than 50°C during preclosure. (CDA EB-DRD 3.7.G.6, p. 6-80, Ref. 5.7)
- Limit the CHn maximum temperature to less than 115°C. (CDA DCSS 025, p. 6-155, Ref. 5.7)
- Limit the PTn (Upper Paint Brush non-welded) maximum temperature to less than 115°C. (CDA DCSS 031, p. 6-160, Ref. 5.7)

- Limit the SNF cladding maximum temperature to less than 350°C. (CDA DCWP 001, p. 6-165, Ref. 5.7)
 - Limit the high-level waste glass maximum temperature to less than 500°C. (CDA DCWP 002, p. 6-166, Ref. 5.7)
 - The structural strength of any material component of the waste package shall not be compromised by temperature/environment of the EBS environment. (derived from p. 2-4, Ref. 5.10, and EB-DRD 3.7.1.3.E, p. 3-53, Ref. 5.5)
 - Maximize the time the waste package container stays above boiling consistent with the thermal strategy developed. (Table 3, p. 23, Ref. 5.29)
- 4.3.2 Two primary high thermal loadings (100 MTU/acre and 83 MTU/acre) and a couple variations of a low thermal loading (25 MTU/acre) will be considered in this analysis. These values are consistent with the range of thermal loadings (20 -100 MTU/acre) given in the CDA (Key 019, p. 6-24, Ref. 5.7). Systems Engineering (p. 2, Ref. 5.22) recommended thermal loadings of 25 and 83 MTU/acre be used for MGDS design analysis in order for the MGDS to present a consistent design. A thermal loading of 100 MTU/acre represents the likely maximum possible without violating thermal goals according to the FY 93 Thermal Loading System Study (p. 10-2, Ref. 5.23) and is a bounding case for this analysis. This assumption is used in Section 7.1.
- 4.3.3 The waste package will be emplaced in-drift in a horizontal mode. This is consistent with large waste packages such as the Multi-Purpose Canister (MPC) with disposal container and is a current program decision (CDA Key 011, p. 6-18, Ref. 5.7). This assumption is used throughout Section 7.
- 4.3.4 It is assumed that the data in references 5.12 and 5.14 are a reasonable representation of the range of possible DHLW glass waste form manufactured characteristics. Section 3 of reference 5.12 (i.e., Tables 3.2.5, 3.3.5, 3.4.7, and 3.5.4) and Section 2.2.1.3 of reference 5.14 (i.e., Table 6.9, 6.10, 6.11, and 6.12) provides information concerning the decay heat versus time for the glass waste forms anticipated to be manufactured at Hanford, Savannah River Plant (SRP), West Valley (WV), and Idaho National Engineering Laboratory (INEL). Table 3.1.1 on page 3.1-7 of reference 5.12 provides general information concerning each glass matrix, the pour canister, and that the total weight of the glass in a pour canister will fall in a 1650 to 1900 kg range. To complete the characterization of the DHLW pour canister, it is assumed that a Savannah River pour canister as described in references 5.12 and 5.32 is used to contain the glass. This data is required in order to determine the decay heat curve of the glass waste form and to properly model the waste package geometry. This assumption is used throughout Sections 6 and 7.

- 4.3.5 The decay heat curve for the DHLW glass waste form is presented and discussed in assumption 4.3.4. The data from references 5.12 and 5.14 is assumed to accurately represent the DHLW glass waste forms which may be received by the MGDS. Use of the data from references 5.12 and 5.14 in this manner is consistent with the reasons for its creation. The data, however, is not presented in ANSYS format and has time steps which are too large for the analysis. Thus, the MATHCAD software was used to perform a curve fit of the data and to create a MATHCAD print file with the required ANSYS decay heat curve data. This MATHCAD print file was then translated by hand into an ANSYS readable file to be used by the analysis. It is further assumed that the curve fit representation of the data is a reasonable representation of the data presented in references 5.12 and 5.14 and that the use of the curve fit representation does not affect the results presented in this analysis. The basis for this assumption is engineering judgement using the curve fit deviation evaluation presented in Attachments I, IV, and VII. The MATHCAD calculation file is presented in Attachments I, IV, and VII for the Hanford, Savannah River, and West Valley glass waste form and echoes the data used from references 5.12 and 5.14 as input. The INEL data was judged to be very similar and less limiting than that presented for West Valley and was not performed for this analysis. The MATHCAD print files containing the ANSYS data is presented in Attachments II, V, and VIII. The ANSYS readable files used in this analysis is presented in Attachment III, VI, and IX. The decay heat curves are presented in Sections 6.0 and 7.4. This assumption is used throughout Section 7.
- 4.3.6 It is assumed for this analysis that for the heat generation rates discussed in assumption 4.3.4 that all of the decay heat from the radioactive material is captured in the glass matrix. This includes all gamma radiation, neutrons, alpha particles, etc. Since the references do not state if any of the heat escapes the glass matrix, it is conservative to assume that all of the heat generation quoted in the references is captured in the glass matrix. This assumption is based upon engineering judgement. This assumption is used throughout Section 7.
- 4.3.7 It is assumed for this analysis that all of the DHLW glass waste form is emplaced in the repository with an insignificant aging time (i.e., the glass pour canisters are emplaced in the repository immediately after manufacture). This assumption is conservative since it does not allow the radioactive material to significantly decay before emplacement which increases the amount of heat generated in the glass matrix. Therefore, use of this assumption for this analysis will slightly over predict the glass matrix temperatures. This assumption is used throughout Section 7.
- 4.3.8 It is assumed for this analysis that the waste package is adequately modeled with a three-dimensional finite element model which models the repository emplacement drift wall as a shell. The model does not require the modeling of the repository far field since this was performed in reference 5.13. This assumes that the DHLW waste package will have

a negligible impact upon thermal loading of the repository and a negligible impact upon the drift wall temperatures (see assumptions 4.3.11 and 4.3.12). The basis of this assumption is engineering judgement. This assumption is used through out Section 7.

- 4.3.9 It is assumed for this analysis that an axial power peaking factor of 1.00 is reasonable and sufficient to obtain the peak glass matrix temperatures. Use of this factor assumes that the glass manufacturing process is controlled such that a reasonably homogeneous glass matrix is obtained and that any axial variations are negligible. This assumption is based upon engineering judgement. This assumption is used throughout Section 7.
- 4.3.10 It is assumed for this analysis that the DHLW waste packages will be emplaced at the midpoint between two large SNF waste packages (21 PWR or 44 BWR) in the repository drifts and that the use of small WP (12 PWR or 24 BWR) will not significantly affect the results of the analysis. This provides the highest drift wall temperatures that can be applied to the DHLW WP since the DHLW WP has an initial average heat generation rate much less than a SNF WP. Thus, given a repository areal loading limit such as 100 MTU/acre, the SNF will control the repository rock temperatures. Also, if the DHLW WPs were to be emplaced in a section of the repository isolated from the SNF WPs, a similar repository areal loading limit would be applied to the DHLW section of the repository. The entire repository is limited by the same rock temperature goals as specified for the SNF WP and these temperature goals apply to any other WP emplacements. Since the DHLW WP has a much smaller long-term heat generation rate and the initial repository heat loading will be no greater than that for SNF WPs, the repository rock wall for the DHLW section of a repository will be slightly cooler over time than the section of the repository containing the SNF WPs. The cooler drift walls would dictate cooler DHLW WP surface and glass center line temperatures. Thus, the analysis performed by placing the DHLW WP between SNF WPs should be representative of the highest expected temperatures the DHLW WP could experience. This assumption is used throughout Section 7.
- 4.3.11 The average drift wall surface temperature (time dependent) at the midpoint between two SNF waste packages, as defined in reference 5.13 for each thermal load case, will be applied as the uniform boundary condition for the finite element shell representing the drift wall for the detailed DHLW waste package analysis (normal conditions). The detailed waste package model will examine the design basis waste form heat generation rate rather than the average waste form heat generation rate which will result in slightly higher near field temperatures. This effect, however, will be assumed to have a small impact upon the calculated glass matrix temperatures and will be neglected. The basis for this assumption is engineering judgement. This assumption is used throughout Section 7.

- 4.3.12 The effects of drift backfilling will not be considered for the repository base case analysis. Backfill material has not been defined to date and will not be considered to be within the scope of this analysis. Backfill effects on the waste package design will be addressed in a different analysis. This assumption is used throughout Section 7.
- 4.3.13 The Savannah River pour canister is assumed to be adequately represented as presented in reference 5.32 and is assumed to be the representative design which specifies the geometry and materials of construction. The basis of this assumption is that the specified reference is the best information available concerning the pour canister design. This assumption is used throughout Section 7.
- 4.3.14 The waste package disposal container material composition, geometry, and dimensions are assumed to be those specified in reference 5.27. This data is also presented as Waste Package Development sketches which are identified as specified in references 5.30 and 5.32, and are based upon reference 5.27. This assumption is used throughout Section 7.
- 4.3.15 The DHLW waste package is assumed to be evacuated and backfilled with helium gas. The basis for this assumption is that this process is considered on pages II.A.3-20, II.A.3-53, and II.A.4-2 in reference 5.34 and page 10 of reference 5.31 as a method to meet the internal humidity requirement for the waste package internals. However, helium conduction is not modeled for this analysis. All helium filled spaces are assumed to be voids with no conduction modeled. The use of this assumption means that the resistance to heat removal increases because the heat is forced to be conducted around these gaps or is required to be radiated through the gaps. This will have the effect of over-predicting the internal glass temperatures. Therefore, this assumption is conservative with respect to predicting glass matrix temperatures. This assumption is based upon engineering judgement. This assumption is used throughout Section 7.
- 4.3.16 Modeling each pour canister as "floating" in the DHLW waste package such that each pour canister neither touches the disposal container or another pour canister is assumed to provide conservative results for this analysis. Further, the minimum distance between each pour canister and the center line of the disposal container is assumed to be the same as the minimum distance between each pour canister and the inside surface of the disposal container. All gap sizes are documented in the ANSYS input decks. Finally, the gap between the pour canisters and the disposal container is assumed to be modeled conservatively if it is modeled as being void of material (i.e., a vacuum). The basis for this assumption is as follows: this space will most likely be evacuated and backfilled with helium gas for similar reasons as specified in assumption 4.3.15 for the DHLW waste package internals. Helium has a reasonably good thermal conductivity which will increase the heat transfer from the pour canisters to the WP. However, assuming a vacuum will result in slightly higher internal temperatures due to the fact that all heat transfer from the pour canisters must be radiated to the inner surface of the disposal

container. This is conservative for this analysis. This assumption is equivalent to assuming only radiative heat transfer between the pour canisters and the disposal container. This assumption is used throughout Section 7.

- 4.3.17 Modeling only conduction and radiative heat transfer is assumed to provide conservative results for this analysis. The basis for this assumption is as follows: the fill gas placed internally to the DHLW WP will allow a convective heat transfer path to exist; however, the natural convective heat transfer will have a small or negligible contribution to the total heat transfer (see reference 5.16 for a discussion on natural convection heat transfer). Thus, the problem may be modeled with only the dominant heat transfer modes with a negligible or conservative impact upon the results. This assumption is used throughout Section 7.
- 4.3.18 It is assumed for this analysis that the transient mode of calculation is not required and that a steady state solution at each time specific boundary condition and heat generation rate results in a negligible difference in the results. This assumption is based upon the fact that the heat generation rate declines such that the temperature drops from the waste package center line to the drift wall quickly (relative to 1000 years) becomes small and that the rate of change is such that the thermal inertial effects are negligible. This assumption is also required in order to obtain a solution in a reasonable length of time. A true transient calculation would require in excess of 2 weeks of cpu time due to the combination of: 1) inclusion of large radiation heat transfer surfaces with large conduction volumes, and 2) small temperature differences over a large portion of the time frame which make convergence testing very unstable. This assumption is based upon engineering judgement and is used through out Section 7.
- 4.3.19 It is assumed for this analysis that the waste package with disposal container will not have filler material placed inside of it. The basis for this assumption is that the consideration of filler material is beyond the scope of this analysis. The affect of filler materials will be evaluated with additional analysis at a later time. This assumption is used throughout Section 7.
- 4.3.20 It is assumed for this analysis that the waste package will not be individually fitted with radiation shielding. This is consistent with the CDA; KEY 031, page 6-32, of reference 5.7. This assumption is used throughout Section 7.
- 4.3.21 It is assumed for this analysis that the pour canister is filled to 85% of its volume with glass matrix and that the remaining space in the pour canister is conservatively modeled as a void (i.e., vacuum) with no radiation. Reference 5.12, p. 3.3-12, and reference 5.14, p. 2.2.1.3-4, provide the percentage of the pour canister volume which is filled, reference 5.14 provides the density of the glass (p. 2.2.1.1-4; 2.69 g/cm^3 at 825°C and 2.85 g/cm^3 at 25°C), and reference 5.32 provides the pour canister dimensions. The anticipated

temperature for the glass matrix is judged to be 300°C and the glass density used to determine the fill height was linearly interpolated with the given data. The lightest glass weight from assumption 4.3.4 is used since this will provide the smallest glass fill height. This combination of data provides a glass fill height of 2.1549 m. This fill height used with the normal heat generation rate provides a smaller, hotter glass matrix than a nominal fill and conservatively predict the glass temperatures. In this manner an attempt to account for manufacturing tolerances has been made and that the worst combination of events has been selected. This assumption is based upon engineering judgement and the fact that conservative glass temperatures will be predicted by using this assumption. First, heat will be modeled as being generated in a smaller volume which in general (see reference 5.16) will result in higher internal temperatures. Second, by modeling the remaining space as a vacuum which does not have radiation heat transfer between the glass surface and the upper end of the pour canister, the heat must be conducted through the glass to the pour canister in the radial direction. This effectively removes a heat transmission path, however effective it may be, and in general will result in higher internal temperatures. Also, this significantly decreases the computer run time and is judged to negligibly impact the results. This assumption is used throughout Section 7.

- 4.3.22 It is assumed for this analysis that waste package materials which are in contact, that a perfect weld will be modeled. This means that a contact thermal resistance will not be modeled between touching materials. This assumption is intended to make the modeling of the problem simpler and is judged to have a negligible impact upon the results of this analysis and any non-conservative impact will be more than offset by the conservatism in the other assumptions used for this analysis. The basis for this assumption is engineering judgement. This assumption is used throughout Section 7.
- 4.3.23 Modeling the waste package as "floating" in the emplacement drift such that the waste package does not touch the emplacement drift at any point is assumed to provide conservative results for this analysis. In addition, the emplacement drift is assumed to not be filled with any material (i.e., a vacuum is assumed) such that the only heat transfer path is that of radiative heat transfer. The basis for this assumption is engineering judgement. The assumption is conservative with respect to the waste package internal temperatures since the modeled geometry eliminates any conduction or convective heat transfer and will limit the mode of heat transfer to only radiation between the outer surface of the waste package and the drift surfaces. This assumption is used throughout Section 7.
- 4.3.24 The vertical positioning of the DHLW waste package centerline above the invert in the emplacement drift is determined as described in reference 5.13. The offset value OFFST in the ANSYS input deck was adjusted for the difference in waste package diameter and used accordingly. The use of this assumption is consistent with the vertical WP positioning in reference 5.13 and maintains consistency with the analysis which provides

the boundary conditions for this analysis. This assumption is used throughout Section 7.

- 4.3.25 The all emplacement drift parameters such as drift diameter, drift length, invert composition, invert dimensions, material properties, etc. are obtained from the analysis presented in reference 5.13. This is assumed adequate and reasonable for this analysis in order to remain consistent with the geometry which provides this analysis with the required boundary conditions. The basis of this assumption is engineering judgement and is used throughout Section 7.
- 4.3.26 The properties of helium at atmospheric pressure (Table 4.1-5) are assumed to be representative of the conditions which helium in the waste package will experience. This assumption is based upon the fact that a one atmosphere fill pressure is representative of industry standard for storage casks. Page 10 of reference 5.31 provides the highest pressure which storage casks are filled as approximately 1.5 atmosphere; also most industry vendors use substantially lower pressure in their designs. Use of one atmosphere is representative of the most likely pressure to be used. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.27 Use of the material properties for stainless steel 316 provided in Tables 4.1-1 and 4.1-2 is assumed to adequately represent any stainless steel used in the waste package for this analysis. Particularly the use of a constant value for the density and emissivity is assumed to be adequate for this analysis. The basis for this assumption is engineering judgement and the fact that the temperature dependent values of thermal conductivity and specific heat are specified well enough to cover the anticipated temperatures the waste package is expected to experience. Also, the values for density and emissivity change only slightly over the expected range of temperatures. Thus, using a single value will not affect the results of the analysis. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.28 Use of the material properties for Alloy 825 provided in Tables 4.1-3 and 4.1-4 is assumed to adequately represent Alloy 825 for this analysis. Particularly the use of a constant value for the density and emissivity is assumed to be adequate for this analysis. The basis for this assumption is engineering judgement and the fact that the temperature dependent values of thermal conductivity and specific heat are specified well enough to cover the anticipated temperatures the waste package is expected to experience. Also, the values for density and emissivity change only slightly over the expected range of temperatures. Thus, using a single value will not affect the results of the analysis. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.29 Use of the material properties for C71500 70/30 copper-nickel alloy provided in Table 4.1-6 and the emissivity of oxidized nickel as presented in Section 4.1 is assumed to adequately represent C71500 70/30 copper-nickel alloy for this analysis. Particularly the

use of a constant value for the density and specific heat is assumed to be adequate for this analysis. The basis for this assumption is engineering judgement and the fact that the temperature dependent values for thermal conductivity are specified well enough to cover the anticipated temperatures the waste package is expected to experience. Also, the value for density changes only slightly over the expected range of temperatures. Thus, using a single value will not affect the results of the analysis. ANSYS does not extrapolate beyond the given tabulated values, rather it uses the last value available in the table. Thus, since specific heat generally increases with increasing temperature, ANSYS will use a conservative value for specific heat by using the C71500 70/30 copper-nickel alloy specific heat at 20°C. This assumption is used in Section 4.1 and throughout Section 7.

- 4.3.30 Use of the material properties for TSw2 provided in Tables 4.1-7 and 4.1-8 is assumed to adequately represent TSw2 rock for this analysis and is consistent with the use of these material properties as presented in reference 5.13. The same assumptions and basis for assumptions presented in reference 5.13 concerning these material properties apply to this analysis. Since this analysis is dependent upon reference 5.13 and they should be considered a coupled pair of analyses and the reader should be familiar with both, the set of assumptions is not repeated here. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.31 Use of the material properties for concrete provided in Table 4.1-9 is assumed to adequately represent concrete for this analysis and is consistent with the use of these material properties as presented in reference 5.13. The same assumptions and basis for assumptions presented in reference 5.13 concerning these material properties apply to this analysis. Since this analysis is dependent upon reference 5.13 and they should be considered a coupled pair of analyses and the reader should be familiar with both, the set of assumptions is not repeated here. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.32 Use of the material properties for borosilicate glass provided in Table 4.1-10 is assumed to adequately represent borosilicate glass for this analysis. The use of pyrex glass is assumed reasonable since pyrex contains boron and the composition of the glass is reasonably close to the composition of borosilicate glass provided in reference 5.14. This assumption is used in Section 4.1 and throughout Section 7.
- 4.3.33 It is assumed for this analysis that the top and bottom of the pour canister geometry can be modeled as flat solid plates with a 20 mm thickness for the top and 15 mm thickness for the bottom of the pour canister with negligible affect on the calculated results. Detailed modeling of the pour canister features will significantly increase the modeling and computation time required for the analysis with little effect on the results. Thus, these geometric features have been modeled to make the pour canister a right circular

cylinder. Modeling the top of the pour canister as a flat plate reduces its heat transfer efficiency by removing the "fin" effect. The heat transfer surface area of the modeled flat plate is smaller than that of the actual geometry. This reduces any radiative and convective heat transfer efficiency and will cause the model to predict higher temperatures. Modeling the concave shaped bottom of the pour canister as a flat plate will not significantly affect the analysis of the model since the shape is mildly concave and is thermally similar to a flat plate. The basis of this assumption is engineering judgement and this assumption is used throughout Section 7.

- 4.3.34 It is assumed for this analysis that not modeling the SNF WP on each side of the DHLW WP at a distance down the modeled portion of the emplacement drift will not significantly affect the results of the analysis. Previous analysis (references 5.13 and 5.26) have shown that the major heat transfer direction is radially out from the waste package and the radiative heat transfer view factors to the SNF waste package is small relative to that of the drift wall surface. In addition, the model is set up such that all radiative heat transfer goes to the drift wall and none escapes down the drift opening. Given this information, engineering judgement is the basis for assuming that not modeling the ends of the SNF WP at the edge of the drift model will not significantly impact the calculated results and is used to simplify the model. This assumption is used throughout Section 7.

4.4 Codes and Standards

Not Applicable. Thermal design of the waste package is not controlled by codes and standards. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Ref. 5.15) has been used only as a source of material properties.

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6. Use of Computer Software

The FEA analysis computer code used for this analysis is ANSYS version (V) 5.0A which is identified with the Computer System Configuration Identifier (CSCI) B00000000-1717-1200-30003. ANSYS is a commercially available finite element thermal and mechanical analysis code and is appropriate for the thermal analysis of waste packages, waste package emplacements, and waste package environments. The analyses using the ANSYS software were executed on a Hewlett-Packard 9000 Series 735 workstation. The software qualification of the ANSYS software, including problems of the type analyzed in this report, is summarized in the ANSYS V5.0A Verification and Validation Final Report (p. 1, Ref. 5.24). The ANSYS evaluations performed for this design are fully within the range of the validation performed for the ANSYS V5.0A code. Access to and use of the code for the analysis granted and performed in accordance with the ANSYS V5.0A Life Cycle Plan (p. 1, Ref. 5.25) and the QAP-SI series procedures. Inputs and outputs to the ANSYS software are included as attachments as described in the following design analysis.

The ANSYS SNF heat load file was generated with the computer code MATHCAD version (V) 5.0+ and is classified as computational support software. MATHCAD V5.0+ is not a controlled computer code and has not been qualified under the QAP-SI series of M&O procedures and will not be qualified under the M&O procedures. MATHCAD V5.0+ simply provides a frame work to automate simple mathematical calculations which can easily be checked by hand or through alternate calculational methods. Based upon the data provided in assumptions 4.3.4 and 4.3.5, MATHCAD V5.0+ generates a simple curve via direct equation calculation. Once the proper equation coefficients for the equations are determined, MATHCAD V5.0+ summarizes the numeric values at selected times and writes an ASCII print file with the heat curve data versus ANSYS time steps. The ASCII print file was then translated by hand to an ANSYS readable file format. The MATHCAD V5.0+ calculation file, MATHCAD V5.0+ print file, and ANSYS data file are provided as Attachments I, II, and III for the assumption of 100% energy capture in the glass and Attachments IV, V, and VI for the assumption of 100% energy capture minus the beta decay neutrino energy. The data and intermediate files are provided in this analysis for the purpose of performing hand calculation checks. The data manipulation has been checked by hand by the originator, and will be used in this analysis on that basis. MATHCAD V5.0+ was utilized for the purpose of computational support software as it was

intended and it is appropriate for the use of generating a curve given the equation forms to supply data for an ANSYS SNF heat load file. The MATHCAD V5.0+ software was executed on an IBM PC compatible.

The presentation graphics provided in Section 7.4 was generated with the computer code Harvard Graphics Version 2.0 and is classified as computational support software. Harvard Graphics Version 2.0 was executed on an IBM PC compatible. Harvard Graphics Version 2.0 is not a controlled computer code and has not been qualified under the QAP-SI series of M&O procedures and will not be qualified under the M&O procedures. Harvard Graphics Version 2.0 simply provides a frame work to create a graphical representation of data. No calculation or modification beyond cut and paste operations with tabular ANSYS or Lotus 1-2-3 output was performed in Harvard Graphics.

7. Design Analysis

7.1 Background

As part of an engineered barrier system for the containment of radionuclides, the DHLW WP must be shown to comply with all regulations and requirements that govern the conditions of the emplaced SNF and the near-field rock at the repository horizon. Temperatures in the WP and near-field host rock are key to radionuclide containment, as they directly affect oxidation rates of the metal barriers, metal pour canisters and glass matrix structural integrity, and the ability of the rock to impede particle movement.

Maximum allowable temperatures are based on material performance criteria and are specified as design goals for the WP/EB Segment design. For borosilicate glass, the MGDS program has recommended a 500°C temperature limit for the borosilicate glass matrix waste form as documented in reference 5.7 (CDA DCWP 002, p. 6-166). This limit is slightly under the borosilicate glass softening temperature (Ref. 5.8) which is the point at which long term performance starts to significantly degrade. To limit the predicted thermal and thermo-mechanical response of the host rock and surrounding strata, maximum temperatures of 200°C for TSw2 (at the emplacement drift wall) and 115°C in the TSw3 (vitrophyre tuff) layer have been specified. Specific characteristics and requirements for the engineered barrier system are listed in the Engineered Barrier Design Requirements Document (Ref. 5.5) and is discussed in Section 4.2.

The method for DHLW WP thermal evaluations involves a two-model approach to determine the time-dependent WP thermal behavior. As presented in reference 5.13, a three-dimensional (3-D) transient finite element model of the WP emplacement provides the drift wall surface temperature history at the midpoint between two SNF WPs for use as a boundary condition. The drift wall boundary condition is then applied to a detailed 3-D DHLW WP model, it is this 3-D model which is analyzed in this report. The reasoning behind the assumption that the DHLW WPs are to be placed between two SNF WPs is provided in assumption 4.3.10 and will not be discussed

further here. The model is intended to predict reasonably conservative peak glass matrix temperatures, peak pour canister surface temperatures, and peak disposal container temperatures.

The thermal environment of the WP in the repository will change with time and is primarily affected by the heat produced in the SNF WPs. Therefore, the emplacement scale thermal evaluation, as performed in reference 5.13, must be a transient analysis that takes into account the time varying heat load of the SNF WPs. The transient analysis for the emplacement scale evaluation can then feed the detailed DHLW WP thermal evaluation with boundary conditions for each point in time during the time period being analyzed. This can be contrasted to a SNF storage cask analysis where the thermal environment is assumed constant and is provided by regulations.

To determine the effect of the WPs on repository near-field temperatures, a 3-D emplacement model was evaluated for a range of thermal loadings. The analysis is described in detail in the supporting emplacement thermal model design analysis (Ref. 5.13). A parametric set of thermal loading cases, summarized in Table 7.1-1, is required because the thermal loading for the repository has been specified as a range (CDA Key 019, p. 6-24, Ref. 5.7) and the DHLW WP must be shown to meet requirements over that range. Representative "high" and "low" thermal loadings of 100 MTU/acre (24.7 kg U/m^2), 83 MTU/acre (20.5 kg U/m^2), and 25 MTU/acre (6.2 kg U/m^2) were selected (see assumption 4.3.2) to be consistent with the CDA and the Thermal Loading Systems Study (Ref. 5.23), and drift spacings in multiples of 22.5 m (see Ref. 5.13) were selected to be consistent with the repository/WP initial summary report (Ref. 5.26)

Table 7.1-1. Large Waste Package Thermal Loading Scenarios
(From Table 7.5-1 of Reference 5.13)

Areal Mass Loading (AML) MTU/acre	Initial Areal Power Density (APD) kW/acre	SNF Waste Package Spacing	Drift Spacing
100 (high #1)	113.7	16.2 m	22.5 m
83 (high #2)	94.4	19.5 m	22.5 m
25 (low #1)	28.4	32.3 m	45.0 m
25 (low #2)	28.4	21.6 m	67.5 m
25 (low #3)	28.4	16.2 m	90.0 m

The low thermal loading drift spacings described in Table 7.1-1 represent the utilization of even multiples of the high thermal loading drift spacing (every other drift, every third, etc.). Low thermal loading #1 achieves the longest reasonable WP spacing and results in the lowest

near-field temperatures; low thermal loading #2 has a WP spacing similar to that for the high thermal loading; and low thermal loading #3 has a short WP spacing and represents the "localized disturbance" concept for low loadings. The "localized disturbance" concept depends on high temperature gradients (due to the closely spaced WPs) to drive local water in the rock away from the emplacement drifts. The analysis performed in reference 5.13 was performed to determine the rock wall temperatures for these conditions and whether the rock temperature goals were met. The drift wall surface temperatures from that analysis can be used as a boundary condition to determine the WP internal and glass matrix temperatures.

7.2 Design Basis Heat Load

To capture a majority of the DHLW glass waste form, the waste package must be designed and evaluated to accommodate the bounding or limiting case of a glass waste form which has a thermal output much higher than average. Thus, a design basis heat load can be determined which can be considered the hottest glass waste form heat load that could be loaded and emplaced in that waste package. The detailed waste package/EBS evaluation would then represent the hottest waste package for this waste form in a repository at a given thermal loading with otherwise average SNF waste packages being the majority of the emplaced waste packages. While all of the waste packages (hot and cold) will collectively influence repository temperatures (assumed to be the average SNF waste package characteristics), every waste package must meet thermal goals (WP design basis heat load characteristics). The methodology and selection of commercial SNF design basis SNF for waste package design is covered in references 5.28 and 5.13. The design basis MGDS DHLW glass waste form heat load which will be used is presented in Appendix III, VI, and IX and is based upon the data in references 5.12 and 5.14, assumption 4.3.4, and assumptions 4.3.5 through 4.3.7.

Given that higher capacity waste packages are more likely to exceed thermal goals than smaller ones in the same repository thermal environment, the choice of a design basis heat load is important because it could limit the number of pour canisters that can be loaded in one WP without exceeding thermal goals for disposal. The limiting thermal goal for DHLW type waste packages is a temperature of no more than 500°C anywhere in the glass matrix. Several different MGDS DHLW design basis heat load types have been used by the OCRWM to demonstrate compliance with requirements and to allow comparison with previous evaluations. Table 7.2-1 summarizes the MGDS DHLW heat load types used as specified in references 5.12 and 5.14 (see assumption 4.3.4).

The design basis heat load will impact the timing of peak temperatures as well as the magnitude of the peak. The repository host rock temperatures will peak between 10 to 500 years depending on the thermal loading but will be largely independent of the individual waste package design. The waste package itself will experience its peak temperature before the rock temperature peaks.

Table 7.2-1. DHLW Thermal Analysis Design Bases Heat Loads (Ref. 5.12 and 5.14)

Manufacture Location	Hanford Site	Savannah River Site	Idaho National Engineering Laboratory	West Valley Demonstration Project
Time Since Emplacement (Years)	Watts/Pour Canister	Watts/Pour Canister	Watts/Pour Canister	Watts/Pour Canister
0	869	709	339	326
1	683	627	267	319
2	595	586	230	311
5	502	527	185	290
10	439	467	157	258
15	391	418	138	230
20	349	374	123	205
30	279	301	97	164
50	181	198	61	105
100	67	75	20	37
200	19	17	2.6	8.9
300	12	7.2	0.67	5.4
500	8.7	2.7	0.24	3.7
1000	3.9	1.1	0.11	1.9
2000	0.86	0.72	0.06	0.7
5000	0.08	0.54	0.04	0.33
10000	0.06	0.43	0.03	0.26

The peak temperature and its timing will depend on the design basis heat load and the waste package design. In previous analyses of the SNF WP (p. 6-108, Ref. 5.26), higher conductivity SNF baskets and internal hardware were seen to lower and delay the peak temperatures experienced. The data presented in reference 5.26 also showed that the choice of the design basis SNF (i.e., heat load) is of key importance. Younger SNF types produce high peak temperatures within the first year which then drop off quickly. Older SNF (at the same initial APD, but not AML) produces lower and later peaks with more stable and higher long-term temperatures. Similar trends are expected for the DHLW waste package and various waste forms which may be placed in the disposal container.

In the following evaluation, only the Hanford, Savannah River, and West Valley glass waste forms defined in references 5.12 and 5.14 have been used in the ANSYS analysis. The INEL glass waste form was judged to be similar enough to the West Valley glass waste form such that

similar temperature histories are expected and therefore specific analysis of the INEL data is not required (see assumption 4.3.5). The time dependence of the design basis MGDS DHLW glass waste form is provided in Attachments III, VI, and IX as provided by MATHCAD V5.0+ using the data provided in reference 5.12 and the assumptions listed in Section 4.3. MATHCAD V5.0+ uses the data provided in assumptions 4.3.4 and 4.3.5, generates the appropriate equation coefficients for the radioactive decay equations, solves the radioactive decay equations to obtain the waste form heat generation rate versus time, and finally prints the decay heat data at the desired ANSYS time steps to an ASCII file. The data was then reformatted into a file suitable for direct use by ANSYS. The MATHCAD V5.0+ calculation files are provided as Attachments I, IV, and VII, along with the MATHCAD V5.0+ print files as Attachments II, V, and VII, and the ANSYS readable files created from the MATHCAD V5.0+ print files as Attachments III, VI, and IX.

7.3 3-D Waste Package Model Development

The general philosophy used for this analysis is to create a separate input file for each thermal loading case and is thus exactly the same as that used in reference 5.28. Since there are only a few major differences between individual cases (e.g., boundary condition and potentially the time dependent heat load data if a different waste form matrix is selected) a base deck (i.e., high thermal load #1 case) was created to capture the basic modeling information. The base deck was then copied for each ANSYS case. Each individual file then had the appropriate boundary condition file from reference 5.13 entered into the input decks. Finally, each case then had the appropriate time dependent heat load data entered into the input decks.

The basic layout of each deck follows the following pattern: 1) Comment header used to define problem modeled, additional files read by the input deck, and what information is contained in the data files used in the input deck. 2) Define model parameters and dimensions which are used repeatedly. This includes all material properties, reading of boundary condition files, reading of body load files, etc. The ANSYS input decks make use of defined variables which are then used to perform simple calculations concerning units conversions and geometric positions. Many of the MPC basket geometry parameters are reported in reference 5.8 in units of inches. These values were entered into the ANSYS input decks along with the units conversion to meters, assigned a variable name, and the variable name was then used throughout the remainder of the input deck to determine the geometry of the basket and the disposal container. Also, units of years are used in the file defining waste form heat loads. The years are converted to seconds for this analysis. The variables are clearly identified and defined via comments included in the ANSYS input deck. 3) Define element types which will be used to perform the solution. 4) Define the model geometry and mesh structure. The approach used is to define all components by first defining the basic key points, then lines, then areas and finally the mesh. A time consuming approach to input development, but it is easily followed and repeated. 5) Define all radiation surfaces and create radiation mesh matrix. The ANSYS AUX12 utility is used to generate all of the required view factors between radiation elements. 6) Apply the body loads and boundary conditions to the appropriate geometry components. Since this calculation is a

transient, the loads and boundary conditions are applied at each time step. 7) Finally, selected positions in the SNF, basket, and disposal container shell were selected to have temperatures for each time step of the transient echoed to the output file for examination.

Each ANSYS input deck is provided as part of the ANSYS output files in Attachments X and XI. Heat and material input files are provided as Attachments III, VI, IX, X and the boundary condition files for each thermal loading case is provided in Attachments XII through XVI.

The development of any ANSYS model involves the following specific steps:

- 1) Identify the geometry to be modeled.
- 2) Identify the material properties which will be required.
- 3) Identify the assumptions used to model the real geometry and materials.
- 4) Identify the body loads (i.e., heat generation rates in specific materials).
- 5) Identify the boundary conditions/surface loads (i.e., surfaces with known or given temperatures).
- 6) Specify the problem as steady state or transient. If transient specify the time frame which is to be considered.
- 7) Execute the model generated to obtain solutions for the given conditions.
- 8) Analyze the results to form a conclusion or support a design thesis.

The creation of an ANSYS model for the DHLW waste package conceptual design followed the listed steps. Discussion of some of these steps will be combined for convenience.

- 1) Identify the geometry to be modeled.
- 2) Identify the material properties which will be required.

The geometry and the material composition of each component of MGDS DHLW glass waste form, the pour canister, and the disposal container is specified in references 5.12, 5.14, 5.27, 5.30, and 5.32 for the disposal container (see assumptions 4.3.4, 4.3.13, and 4.3.14). Notice that the high thermal load and low thermal load waste packages have the same outer barrier thicknesses and material compositions. The disposal container is 0.020 meter thick Alloy 825 with an outer barrier of 0.050 meter thick C71500 copper-nickel alloy.

Since this model is part of a larger calculational scheme as indicated in reference 5.13, a 3-D waste package with the surface of the emplacement drift (i.e., a shell) will be modeled (see assumption 4.3.8). The full waste package with four pour canisters is modeled with the waste package placed at the midpoint between two SNF waste packages (see assumption 4.3.10). The SNF waste packages are not specifically modeled (see assumption 4.3.34) and the pour canister geometry has been modeled as a right circular cylinder (see assumption 4.3.33). These geometry simplifications have been used as discussed in the outline of the assumptions in Section 4.3. Attachment XI provides mesh plots of the general layout of the waste package and its internals.

Material properties to be used for each component of the design are specified in Section 4.1 along with the references from which they were obtained. The ANSYS file containing this material property data is provided as Attachment X (see assumptions 4.3.26 through 4.3.32). The material properties for the C71500 are included in the input decks directly (see Attachments XVII through XXIII). Attachment X also includes material properties which were not used in this analysis (i.e., those identified as material ID's 3, 8, 9, 10, 11, 12, and 13 were not used).

- 3) Identify the assumptions used to model the real geometry and materials.

All assumptions used for this ANSYS model are listed in Section 4.3. These assumptions provide all of the required insight for a competent ANSYS user as to why the ANSYS geometry and material selections were entered into the ANSYS input decks in the given fashion (including assumptions 4.3.3, 4.3.12, 4.3.15, 4.3.16, 4.3.17, 4.3.18, 4.3.19, 4.3.20, 4.3.21, 4.3.22, 4.3.23, 4.3.24, 4.3.25).

- 4) Identify the body loads (i.e., heat generation rates in specific materials).
- 5) Identify the boundary conditions/surface loads (i.e., surfaces with known or given temperatures).
- 6) Specify the problem as steady state or transient. If transient specify the time frame which is to be considered.
- 7) Execute the model generated to obtain solutions for the given conditions.

The material which generates the heat load is the glass waste form and is modeled as a solid material placed in the interior of each pour canister. The heat load is dependant upon the design basis heat load selected and is discussed in Section 7.2. Briefly, the heat loads for the glass waste form volumes were generated from the data provided in references 5.12 and 5.14 for each of the MGDS DHLW glass waste forms analyzed in this design analysis. The heat load will decrease logarithmically with time as the fission products decay and therefore was created as a function of time. The heat loads were applied volumetrically and were multiplied by an axial heat peaking factor of 1.00 as discussed in assumption 4.3.9.

As indicated in Section 7.1, this analysis is part of a two step calculation method. As such the boundary conditions are provided by the calculations performed in reference 5.13. The boundary conditions for each repository thermal loading scenario are applied to the emplacement drift wall surface as a temperature condition to create each of the ANSYS decks (see assumption 4.3.11). The boundary conditions are time dependent, the glass waste form heat generation rate is also time dependent, and therefore the problem is solved at various points in time which correspond to the points in time reported in reference 5.13. The boundary conditions and heat loads were applied and solved out to 1000 years for each of the thermal loading scenarios described in Section 7.1 and for the MGDS DHLW glass waste form heat load conditions presented in Attachments III, VI, IX. The time span of 1000 years was performed to be consistent with the analysis performed in reference 5.13.

- 8) Analyze the results to form a conclusion or support a design thesis.

The outputs of each ANSYS execution are provided as Attachments XVII through XXIII. Discussion and summary of the ANSYS results are provided in Section 7.4 and the conclusions are provided in Section 8.0. Notice that selected data was requested in the input deck and echoed into the output file for ease of use. This data is summarized in Section 7.4.

7.4 3-D Waste Package Analysis Results

All of the results provided in this section were derived from the ANSYS V5.0A executions. These models are presented in the ANSYS output files summarized in Section 9.0 and provided as attachments to this report. All of the assumptions concerning geometry, material composition, boundary conditions, and other inputs are provided in Section 4.3.

Tables 7.4-1 through 7.4-7 summarize the temperature data for each of the cases analyzed. Peak glass matrix, pour canister, and disposal container temperatures are calculated directly in the ANSYS program for each time step and provided in Attachments XVII through XXIII. The third column of the tables provides the peak pour canister surface temperature for the half of the pour canister which faces the center line of the disposal container. The fifth column provides the peak pour canister surface temperature for the half of the pour canister which faces the interior surface of the disposal container. The remaining column designations are self-explanatory.

Peak temperatures inside the waste package occur between the time of emplacement and the time of peak drift wall temperatures. At emplacement the glass matrix heat load is at its highest, but the drift is still cool, and by the time of peak drift temperatures, the glass matrix heat load has decayed so that internal waste package temperature drops are lower. For MGDS design basis glass waste forms, peak DHLW WP internal temperatures will occur in less than 50 years after emplacement and the waste package surface temperatures do not peak for 60 years or more. By 100 years the temperature drop across the WP (from center to edge) has dropped to less than 10°C. The long times to peak temperatures for the DHLW WP is a result of the fact that the near and far field repository temperatures are driven by the SNF WPs which have a much larger heat generation rate than the DHLW WPs.

Figure 7.4-1 displays a comparison of maximum WP surface temperatures for the five thermal loading scenarios on a logarithmic time scale. As expected, low thermal loading #3 actually has higher near-field temperatures than the high thermal loadings for the first year due to the use of smaller SNF WP spacing. However, by 500 years, the three low thermal loading temperatures have nearly converged to a single temperature, which is much lower than that for the high thermal loading. Peak DHLW WP surface temperatures occur in 40 years for the high thermal loadings and in about 20 years for the low thermal loadings. The figure demonstrates a significant difference in short-term, near-field temperatures between short and long WP spacings. If the goal of a low thermal loading scenario is to maintain low near-field temperatures, a low

AML and a long WP spacing are needed.

Figure 7.4-2 compares maximum drift wall temperatures for the five loadings. These drift wall temperatures are at the mid-point between SNF WPs, as presented in reference 5.13. Just as for the WP surface temperatures, the peak temperatures occurred earlier for the low loadings than for the high thermal loading. Reference 5.13 compares the drift-to-drift midplane temperatures and demonstrates that the WP spacing has little effect on temperatures half-way between drifts. At the drift-to-drift midplane, temperatures are primarily a function of thermal loading in MTU/acre. For all of the thermal loading scenarios presented in reference 5.13, the drift wall temperature limit of 200°C was not exceeded, and the TSw2/TSw3 interface reached 106°C (less than the limit of 115°C) at 1,000 years for the high loading.

The thermal history for the Hanford waste form and a repository thermal heat load of 83 MTU/acre is presented in Figure 7.4-3. The temperature profile across the DHLW glass, pour canister, and disposal container for the time of peak internal temperatures (30 years) is presented in Figure 7.4-4. The peak conservative estimate for glass temperature was 167°C for high thermal load #2.

The thermal history of the DHLW and WP at 100 MTU/acre (24.7 kgU/m^2) for the Hanford, Savannah River Plant, and West Valley Demonstration Project thermal heat loads, respectively, are presented in Figures 7.4-5, 7.4-6, and 7.4-7. The Hanford and Savannah River Plant thermal heat loads result in nearly the same temperature history. Based on this, it is assumed that the West Valley and INEL thermal heat loads will also produce similar results; therefore, only the West Valley thermal heat load was analyzed. The hottest glass temperature the DHLW WP experienced was 193°C, which is less than the thermal design goal (limit) of 500°C.

Peak temperatures inside the WP occur between the time of emplacement and the time of peak drift wall temperatures. At emplacement the thermal heat load is at its highest, but the drift is still cool, and by the time of peak drift temperatures, the heat load has decayed so that internal temperature gradients are lower. As indicated in Tables 7.4-1 through 7.4-7, the time of peak temperatures varies depending on thermal loading, WP spacing, and the time-dependent WP decay heat.

Figures 7.4-8, 7.4-9, and 7.4-10 display the thermal history of the DHLW WP in the low thermal loadings #1, #2, and #3 for the Hanford design basis thermal load. Because the WP spacing is similar to the high thermal loading case, similar temperatures are predicted for the first few years of emplacement. However, as thermal loading effects emerge, all of the low thermal loading results converge to similar long term temperatures. The highest internal temperature for all cases occurred where the WPs have the shortest WP spacing (16.2 m), which defines the thermal loading. Even though the thermal loading is low, the peak temperatures occur before drift-to-drift effects emerge such that WP spacing drives the peak near-field temperatures (Ref. 5.13).

Table 7.4-1. High Thermal Load #1; DHLW Waste Package Thermal Results
(Hanford Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lotz 05-25-95 File.c

Four Pour Canisters with Disposal Container

100 MTU/acre with 16.165 m WP Spacing

0 years aging before emplacement, 871 W (Hanford) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DCCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX Surf. Temp.	Peak WP Exterior Surf. Temp.	Drift Wall
0	871.2	125.26	134.84	87.61	57.06	56.36	26.14
0.1	844.3	133.89	143.44	98.44	72.06	71.39	46.42
0.2	819.7	137.02	146.39	102.99	78.60	77.95	55.29
0.3	797.1	138.88	148.04	106.02	83.05	82.41	61.36
0.4	776.4	140.16	149.13	108.32	86.49	85.87	66.06
0.5	757.4	141.13	149.91	110.20	89.32	88.71	69.92
0.6	739.9	141.90	150.50	111.79	91.73	91.14	73.22
0.7	723.7	142.55	150.98	113.18	93.85	93.27	76.10
0.8	708.9	143.11	151.39	114.42	95.72	95.16	78.64
0.9	695.2	143.61	151.74	115.54	97.42	96.86	80.93
1	682.5	144.08	152.08	116.59	98.98	98.44	83.03
2	596.7	148.22	155.32	124.61	110.40	109.93	97.82
3	552.1	152.08	158.73	130.57	118.13	117.70	107.22
4	524.9	155.91	162.31	135.74	124.44	124.04	114.60
5	505.5	159.62	165.85	140.45	130.00	129.62	120.93
6	489.9	162.87	168.96	144.50	134.71	134.35	126.24
7	476.4	165.58	171.55	147.89	138.63	138.28	130.64
8	464.3	168.01	173.87	150.92	142.12	141.78	134.54
9	452.9	169.75	175.49	153.18	144.76	144.42	137.50
10	442.1	171.13	176.75	155.03	146.94	146.62	139.97
20	351.5	180.82	185.41	168.48	162.70	162.45	157.78
30	280.9	186.84	190.57	177.21	172.90	172.70	169.24
40	225.4	188.20	191.21	180.53	177.17	177.01	174.32
50	181.6	187.79	190.22	181.62	178.93	178.81	176.67
60	147.2	186.72	188.68	181.71	179.53	179.43	177.71
70	120	185.23	186.82	181.13	179.35	179.27	177.83
80	98.57	183.27	184.57	179.88	178.41	178.34	177.18
90	81.64	181.52	182.60	178.70	177.47	177.42	176.45
100	68.25	179.96	180.86	177.59	176.56	176.51	175.70
200	21.19	172.60	172.87	171.85	171.51	171.50	171.24
300	14.26	167.71	167.90	167.20	166.97	166.96	166.78
400	11.42	165.18	165.32	164.77	164.58	164.57	164.42
500	9.355	163.53	163.65	163.19	163.03	163.02	162.90
600	7.684	161.63	161.72	161.35	161.22	161.21	161.11
700	6.318	159.38	159.46	159.15	159.04	159.04	158.95
800	5.199	156.93	157.00	156.74	156.65	156.65	156.57
900	4.283	154.57	154.63	154.41	154.34	154.33	154.27
1000	3.533	152.44	152.48	152.30	152.24	152.23	152.18

Table 7.4-2. High Thermal Load #1; DHLW Waste Package Thermal Results
(Savannah River Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lotz 05-25-95 File:41

Four Four Canisters with Disposal Container
100 MTU/acre with 16.165 m WP Spacing
0 years aging before emplacement, 710 W (SRP) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DCCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX	Peak WP Exterior Surf. Temp.	Drift Wall
0	710.1	110.51	117.97	78.67	51.95	51.38	26.14
0.1	699.2	121.42	129.04	91.11	68.05	67.49	46.42
0.2	689	126.07	133.70	96.66	75.19	74.64	55.29
0.3	679.6	129.19	136.79	100.48	80.10	79.55	61.36
0.4	670.8	131.56	139.12	103.44	83.91	83.38	66.06
0.5	662.6	133.48	141.00	105.89	87.06	86.53	69.92
0.6	654.9	135.10	142.57	107.98	89.75	89.22	73.22
0.7	647.7	136.50	143.93	109.82	92.10	91.59	76.10
0.8	641	137.74	145.12	111.45	94.19	93.68	78.64
0.9	634.8	138.86	146.20	112.92	96.07	95.57	80.93
1	628.9	139.89	147.18	114.28	97.80	97.30	83.03
2	585.9	147.40	154.36	124.18	110.18	109.73	97.82
3	559.9	152.65	159.41	130.87	118.27	117.84	107.22
4	541.5	157.10	163.72	136.35	124.74	124.33	114.60
5	526.7	161.10	167.61	141.20	130.36	129.97	120.93
6	513.7	164.50	170.92	145.32	135.11	134.73	126.24
7	501.7	167.29	173.60	148.74	139.04	138.67	130.64
8	490.4	169.76	175.97	151.78	142.54	142.17	134.54
9	479.4	171.50	177.60	154.04	145.17	144.81	137.50
10	468.8	172.88	178.87	155.89	147.35	147.00	139.97
20	376	182.34	187.27	169.19	163.04	162.77	157.78
30	302.5	188.14	192.17	177.80	173.18	172.96	169.24
40	244.2	189.53	192.64	181.04	177.40	177.23	174.32
50	198	188.77	191.42	182.06	179.13	179.00	176.67
60	161.2	187.56	189.71	182.06	179.70	179.59	177.71
70	131.9	185.95	187.70	181.45	179.50	179.41	177.18
80	108.5	183.87	185.31	180.15	178.53	178.46	177.18
90	89.82	182.02	183.21	178.93	177.58	177.51	176.45
100	74.84	180.37	181.35	177.77	176.64	176.59	175.70
200	18.33	172.41	172.65	171.76	171.47	171.46	171.24
300	8.147	167.31	167.42	167.02	166.89	166.88	166.78
400	4.549	164.72	164.78	164.56	164.48	164.48	164.42
500	2.793	163.09	163.12	162.99	162.94	162.94	162.90
600	1.868	161.24	161.26	161.17	161.13	161.13	161.11
700	1.372	159.04	159.06	158.99	158.97	158.97	158.95
800	1.105	156.65	156.66	156.61	156.59	156.59	156.57
900	0.9608	154.34	154.35	154.31	154.29	154.29	154.27
1000	0.8819	152.25	152.26	152.21	152.20	152.20	152.18

Table 7.4-3. High Thermal Load #1; DHLW Waste Package Thermal Results
(West Valley Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lotz 05-24-95 File: w

Four Pour Canisters with Disposal Container

100 MTU/acre with 16.165 m WP Spacing

0 years aging before emplacement, 326 W (West Valley) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp. DCCL	Peak Glass Matrix Temp.	Peak Pour Can. Surf. Temp. DCEX	Peak WP Interior Surf. Temp.	Peak WP Exterior Surf. Temp.	Drift Wall
0	325.932	69.80	72.79	53.69	38.75	38.48	26.14
0.1	325.174	85.00	88.16	69.61	57.00	56.73	46.42
0.2	324.417	91.86	95.09	76.80	65.10	64.83	55.29
0.3	323.662	96.60	99.88	81.78	70.67	70.40	61.36
0.4	322.909	100.30	103.62	85.68	75.00	74.74	66.06
0.5	322.158	103.36	106.70	88.90	78.57	78.31	69.92
0.6	321.408	105.97	109.34	91.66	81.62	81.36	73.22
0.7	320.66	108.26	111.65	94.09	84.30	84.04	76.10
0.8	319.914	110.29	113.69	96.24	86.66	86.40	78.64
0.9	319.17	112.11	115.53	98.17	88.79	88.53	80.93
1	318.428	113.79	117.21	99.95	90.74	90.49	83.03
2	311.102	125.60	129.08	112.58	104.55	104.30	97.82
3	303.95	133.08	136.56	120.66	113.35	113.11	107.22
4	296.968	138.93	142.40	127.03	120.26	120.03	114.60
5	290.152	143.96	147.40	132.52	126.22	125.99	120.93
6	283.497	148.17	151.57	137.15	131.22	131.00	126.24
7	277	151.61	154.97	140.97	135.35	135.14	130.64
8	270.657	154.65	157.96	144.35	139.02	138.81	134.54
9	264.465	156.88	160.14	146.90	141.79	141.59	137.50
10	258.42	158.70	161.89	149.00	144.09	143.90	139.97
20	205.307	171.51	174.14	164.14	160.68	160.53	157.78
30	163.502	179.64	181.78	173.94	171.38	171.27	169.24
40	130.579	182.46	184.18	177.96	175.98	175.88	174.32
50	104.635	183.14	184.53	179.54	177.98	177.90	176.67
60	84.176	182.90	184.02	180.01	178.75	178.65	177.71
70	68.0298	182.07	182.96	179.72	178.71	178.66	177.18
80	55.2759	180.61	181.34	178.70	177.87	177.83	177.18
90	45.1913	179.27	179.86	177.70	177.02	176.99	176.45
100	37.2081	178.03	178.52	176.73	176.17	176.14	175.70
200	9.18995	171.83	171.95	171.50	171.36	171.35	171.24
300	5.50206	167.14	167.21	166.94	166.85	166.85	166.78
400	4.37096	164.71	164.77	164.55	164.48	164.48	164.42
500	3.6478	163.15	163.19	163.01	162.95	162.95	162.90
600	3.08065	161.32	161.36	161.20	161.15	161.15	161.11
700	2.62014	159.13	159.16	159.03	158.99	158.99	158.95
800	2.24398	156.73	156.76	156.65	156.61	156.61	156.57
900	1.93628	154.41	154.43	154.34	154.30	154.30	154.27
1000	1.68442	152.30	152.32	152.24	152.21	152.21	152.18

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Table 7.4-4. High Thermal Load #2; DHLW Waste Package Thermal Results
(Hanford Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lotz 05-30-95 File:c:

Four Pour Canisters with Disposal Container

83 MTU/acre with 19.477 m WP Spacing

0 years aging before emplacement, 871 W (Hanford) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DCCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX	Peak WP Exterior Surf. Temp.	Drift Wall
0	871.2	125.15	134.73	87.53	56.97	56.27	26.14
0.1	844.3	130.47	139.92	94.67	67.29	66.61	40.51
0.2	819.7	132.38	141.63	97.89	72.25	71.60	47.57
0.3	797.1	133.41	142.43	100.01	75.67	75.03	52.51
0.4	776.4	134.04	142.85	101.61	78.33	77.71	56.39
0.5	757.4	134.46	143.07	102.90	80.53	79.92	59.60
0.6	739.9	134.76	143.18	103.99	82.40	81.81	62.34
0.7	723.7	134.98	143.23	104.93	84.05	83.47	64.76
0.8	708.9	135.18	143.27	105.79	85.54	84.97	66.92
0.9	695.2	135.37	143.31	106.59	86.90	86.35	68.89
1	682.5	135.56	143.36	107.33	88.17	87.63	70.71
2	596.7	138.09	144.98	113.73	98.08	97.60	84.18
3	552.1	141.45	147.90	119.22	105.49	105.05	93.44
4	524.9	144.48	150.68	123.58	111.04	110.63	100.12
5	505.5	147.23	153.24	127.30	115.63	115.24	105.51
6	489.9	149.68	155.56	130.53	119.55	119.17	110.05
7	476.4	151.85	157.60	133.38	122.96	122.59	113.97
8	464.3	153.83	159.47	135.96	126.03	125.67	117.48
9	452.9	155.32	160.85	137.98	128.46	128.12	120.29
10	442.1	156.52	161.94	139.67	130.52	130.18	122.67
20	351.5	161.82	166.20	148.71	141.99	141.73	136.29
30	280.9	163.86	167.38	153.49	148.34	148.13	144.00
40	225.4	163.86	166.71	155.59	151.53	151.37	148.14
50	181.6	162.80	165.08	155.11	152.87	152.73	150.17
60	147.2	161.23	163.07	155.79	153.16	153.02	150.97
70	120	159.64	161.14	155.19	153.04	152.95	151.12
80	98.57	157.70	158.93	154.03	152.25	152.18	150.78
90	81.64	156.02	157.03	152.96	151.47	151.41	150.25
100	68.25	154.61	155.45	152.04	150.79	150.74	149.77
200	21.19	147.98	148.24	147.17	146.77	146.75	146.44
300	14.26	144.45	144.62	143.90	143.62	143.61	143.40
400	11.42	142.54	142.68	142.10	141.87	141.87	141.69
500	9.355	140.92	141.03	140.55	140.36	140.36	140.21
600	7.684	139.06	139.15	138.75	138.60	138.59	138.47
700	6.318	137.34	137.41	137.09	136.96	136.95	136.85
800	5.199	135.81	135.87	135.61	135.50	135.49	135.41
900	4.283	134.42	134.47	134.25	134.16	134.16	134.09
1000	3.533	133.19	133.23	133.05	132.98	132.97	132.92

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Table 7.4-5. Low Thermal Load #1; DHLW Waste Package Thermal Results
(Hanford Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lutz 05-30-95 File:c:

Four Pour Canisters with Disposal Container

25 MTU/acre with 32.331 m WP Spacing

0 years aging before emplacement, 871 W (Hanford) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DOCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX Surf. Temp.	Peak WP Exterior Surf. Temp.	Drift Wall
0	871.2	125.06	134.65	87.48	56.93	56.24	26.14
0.1	844.3	125.21	134.52	88.87	59.82	59.15	31.01
0.2	819.7	124.84	133.87	89.56	61.67	61.01	34.32
0.3	797.1	124.25	133.02	89.92	62.98	62.34	36.82
0.4	776.4	123.58	132.11	90.11	64.00	63.38	38.86
0.5	757.4	122.91	131.21	90.22	64.85	64.24	40.59
0.6	739.9	122.24	130.34	90.27	65.56	64.97	42.09
0.7	723.7	121.59	129.51	90.29	66.18	65.60	43.42
0.8	708.9	121.00	128.73	90.30	66.74	66.17	44.60
0.9	695.2	120.43	128.01	90.30	67.23	66.68	45.68
1	682.5	119.91	127.33	90.29	67.69	67.14	46.65
2	596.7	116.51	122.95	90.47	70.97	70.49	53.35
3	552.1	115.15	121.09	91.02	73.18	72.73	57.28
4	524.9	114.61	120.25	91.66	74.86	74.44	60.03
5	505.5	114.36	119.79	92.27	76.23	75.82	62.15
6	489.9	114.21	119.47	92.80	77.37	76.97	63.88
7	476.4	114.07	119.19	93.27	78.35	77.97	65.37
8	464.3	113.97	118.96	93.70	79.24	78.87	66.71
9	452.9	113.71	118.58	93.94	79.90	79.53	67.75
10	442.1	113.41	118.16	94.10	80.43	80.08	68.65
20	351.5	109.68	113.41	94.22	83.48	83.20	74.44
30	280.9	105.12	108.07	92.65	84.01	83.78	76.87
40	225.4	100.42	102.75	90.30	83.27	83.09	77.53
50	181.6	96.21	98.05	87.97	82.20	82.06	77.67
60	147.2	92.62	94.10	85.89	81.14	81.02	77.36
70	120	89.60	90.79	84.07	80.15	80.05	77.05
80	98.57	86.92	87.90	82.35	79.09	79.01	76.53
90	81.64	84.76	85.56	80.95	78.22	78.15	76.08
100	68.25	82.98	83.64	79.78	77.48	77.42	75.68
200	21.19	75.90	76.10	74.89	74.14	74.13	73.57
300	14.26	73.71	73.85	73.03	72.52	72.51	72.13
400	11.42	72.61	72.72	72.06	71.65	71.64	71.34
500	9.355	71.76	71.85	71.31	70.97	70.96	70.71
600	7.684	70.85	70.92	70.48	70.20	70.19	69.99
700	6.318	69.98	70.04	69.67	69.44	69.43	69.26
800	5.199	69.16	69.21	68.91	68.71	68.71	68.57
900	4.283	68.39	68.43	68.19	68.03	68.02	67.91
1000	3.533	67.70	67.74	67.53	67.40	67.40	67.30

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Table 7.4-6. Low Thermal Load #2; DHLW Waste Package Thermal Results
(Hanford Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Loiz 05-30-95 File:c

Four Pour Canisters with Disposal Container

25 MTU/acre with 21.554 m WP Spacing

0 years aging before emplacement, 871 W (Hanford) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DOCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX Surf. Temp.	Peak WP Exterior Surf. Temp.	Drift Wall
0	871.2	125.08	134.66	87.48	56.92	56.23	26.14
0.1	844.3	129.19	138.62	93.28	65.52	64.85	38.32
0.2	819.7	130.60	139.80	95.94	69.81	69.16	44.60
0.3	797.1	131.26	140.23	97.67	72.77	72.13	49.01
0.4	776.4	131.59	140.34	98.94	75.05	74.43	52.47
0.5	757.4	131.74	140.28	99.93	76.91	76.31	55.31
0.6	739.9	131.78	140.13	100.74	78.48	77.89	57.73
0.7	723.7	131.76	139.93	101.43	79.84	79.26	59.83
0.8	708.9	131.72	139.72	102.02	81.04	80.47	61.68
0.9	695.2	131.65	139.51	102.55	82.11	81.55	63.34
1	682.5	131.58	139.30	103.03	83.08	82.53	64.84
2	596.7	131.30	138.05	106.43	89.70	89.22	74.79
3	552.1	131.69	137.95	108.76	93.68	93.24	80.41
4	524.9	132.22	138.19	110.50	96.42	96.01	84.13
5	505.5	132.67	138.44	111.80	98.44	98.03	86.81
6	489.9	132.96	138.55	112.77	99.94	99.55	88.83
7	476.4	133.09	138.53	113.48	101.10	100.72	90.41
8	464.3	133.13	138.44	114.04	102.06	101.69	91.73
9	452.9	132.88	138.06	114.25	102.60	102.24	92.58
10	442.1	132.48	137.52	114.28	102.92	102.56	93.17
20	351.5	127.00	130.96	112.35	103.24	102.88	95.57
30	280.9	120.56	123.67	108.67	101.19	100.97	95.00
40	225.4	114.07	116.50	104.35	98.16	97.98	93.08
50	181.6	108.38	110.31	100.43	95.29	95.14	91.12
60	147.2	103.64	105.18	97.12	92.83	92.71	89.40
70	120	99.68	100.92	94.30	90.73	90.64	87.89
80	98.57	96.13	97.13	91.67	88.68	88.60	86.31
90	81.64	93.30	94.12	89.58	87.06	86.99	85.07
100	68.25	90.97	91.65	87.84	85.70	85.65	84.03
200	21.19	80.90	81.11	79.91	79.20	79.18	78.65
300	14.26	77.63	77.77	76.96	76.46	76.45	76.09
400	11.42	75.92	76.03	75.37	74.97	74.96	74.67
500	9.355	74.63	74.72	74.18	73.85	73.84	73.60
600	7.684	73.35	73.42	72.98	72.70	72.70	72.49
700	6.318	72.20	72.25	71.89	71.66	71.66	71.49
800	5.199	71.15	71.20	70.90	70.71	70.71	70.57
900	4.283	70.22	70.26	70.01	69.85	69.85	69.73
1000	3.533	69.39	69.42	69.22	69.09	69.09	68.99

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Table 7.4-7. Low Thermal Load #3; DHLW Waste Package Thermal Results
(Hanford Waste Form Heat Load)

Summary of DHLW/WP Temperatures

Thomas Lotz 05-30-95 File.c

Four Pour Canisters with Disposal Container

25 MTU/acre with 16.165 m WP Spacing

0 years aging before emplacement, 871 W (Hanford) design basis Initial Heat Rate (WPD)

Time (years)	Heat Load (W/P. Can.)	ANSYS FEM Temperature Results (Deg. C)					
		Peak Pour Can. Surf. Temp.	Peak Glass DCCL Matrix Temp.	Peak Pour Can. Surf. Temp.	Peak WP Interior DCEX Surf. Temp.	Peak WP Exterior Surf. Temp.	Drift Wall
0	871.2	125.27	134.84	87.61	57.06	56.36	26.14
0.1	844.3	133.90	143.45	98.44	72.07	71.40	46.43
0.2	819.7	137.04	146.41	103.01	78.63	77.98	55.33
0.3	797.1	138.91	148.07	106.05	83.09	82.45	61.41
0.4	776.4	140.18	149.15	108.34	86.51	85.89	66.08
0.5	757.4	141.11	149.89	110.18	89.30	88.69	69.90
0.6	739.9	141.84	150.44	111.72	91.65	91.06	73.12
0.7	723.7	142.41	150.85	113.04	93.67	93.10	75.90
0.8	708.9	142.89	151.16	114.18	95.44	94.88	78.32
0.9	695.2	143.28	151.41	115.19	97.00	96.45	80.46
1	682.5	143.62	151.61	116.09	98.41	97.86	82.38
2	596.7	145.95	153.00	122.18	107.65	107.18	94.78
3	552.1	147.53	154.10	125.70	112.72	112.29	101.34
4	524.9	148.94	155.21	128.31	116.27	115.87	105.77
5	505.5	150.06	156.13	130.29	118.91	118.52	109.02
6	489.9	150.93	156.82	131.84	120.96	120.58	111.54
7	476.4	151.53	157.28	133.02	122.56	122.19	113.52
8	464.3	151.99	157.60	133.98	123.89	123.53	115.17
9	452.9	152.04	157.51	134.49	124.69	124.34	116.25
10	442.1	151.86	157.20	134.73	125.19	124.86	116.99
20	351.5	146.43	150.62	132.64	124.97	124.70	116.46
30	280.9	138.52	141.80	127.26	120.88	120.67	115.55
40	225.4	130.36	132.92	121.11	115.74	115.57	111.31
50	181.6	123.04	125.06	115.43	110.91	110.77	107.22
60	147.2	116.86	118.47	110.59	106.78	106.66	103.69
70	120	111.69	112.98	106.50	103.29	103.19	100.71
80	98.57	107.04	108.08	102.72	100.00	99.92	97.83
90	81.64	103.29	104.15	99.68	97.37	97.30	95.53
100	68.25	100.24	100.95	97.20	95.23	95.17	93.67
200	21.19	86.64	86.85	85.66	84.98	84.96	84.46
300	14.26	82.10	82.24	81.43	80.96	80.94	80.59
400	11.42	79.67	79.78	79.13	78.75	78.74	78.45
500	9.355	77.89	77.98	77.45	77.13	77.12	76.88
600	7.684	76.18	76.25	75.81	75.55	75.54	75.34
700	6.318	74.71	74.77	74.41	74.18	74.18	74.01
800	5.199	73.42	73.47	73.17	72.98	72.98	72.84
900	4.283	72.28	72.32	72.07	71.92	71.92	71.80
1000	3.533	71.31	71.34	71.13	71.01	71.00	70.91

Figure 7.4-1. DHLW WP Surface Temperatures

Figure 7.4-2. DHLW Drift Wall Temperatures

Figure 7.4-3. DHLW WP, High Thermal Load #2, Hanford Heat Load

Figure 7.4-4. Radial Temperature Profile in a DHLW WP (HTL #2, Hanford)

Figure 7.4-5. DHLW WP, High Thermal Load #1, Hanford Heat Load

Figure 7.4-6. DHLW WP, High Thermal Load #1, Savannah River Heat Load

Figure 7.4-7. DHLW WP, High Thermal Load #1, West Valley Heat Load

Figure 7.4-8. DHLW WP, Low Thermal Load #1, Hanford Heat Load

Figure 7.4-9. DHLW WP, Low Thermal Load #2, Hanford Heat Load

Figure 7.4-10. DHLW WP, Low Thermal Load #3, Hanford Heat Load

8. Conclusions

Table 8-1 summarizes the peak temperatures and the time of occurrence for each of the cases analyzed. The thermal loading scenarios indicated in Table 8-1 are defined in Table 7.1-1, and the design basis glass heat load descriptions are defined and discussed in Section 7.2. Peak glass, pour canister, and disposal container temperatures are calculated directly in the ANSYS program.

Table 8-1. DHLW WP Thermal Analysis Results Summary

Thermal Load	Design Basis Heat Load	Peak Glass Matrix		Peak Pour Canister Surface		Peak WP Surface		Peak Drift Wall	
		°C	yrs	°C	yrs	°C	yrs	°C	yrs
High #1	Hanford	192	40	188	40	179	60	178	70
	SRP	193	40	189	40	180	60	178	70
	WVDP	185	50	183	50	179	60	178	70
High #2	Hanford	167	40	164	40	153	60	151	70
Low #1	Hanford	135	0.0	125	0.1	84	30	78	50
Low #2	Hanford	140	0.4	132	0.6	103	20	96	20
Low #3	Hanford	158	8	152	9	125	10	119	20

The repository thermal loading has not been specified by the MGDS program. Therefore, the thermal evaluation of the DHLW disposal container conceptual design with MGDS design basis heat loads with respect to the repository has considered a number of thermal loading scenarios. For this analysis, the most limiting thermal loading scenario from reference 5.12 was selected as a bounding case. For each repository thermal loading scenario analyzed, a 3-D repository emplacement (Ref. 5.13) and 3-D waste package evaluation were performed. As indicated by the data provided in Table 8-1, the peak glass matrix temperatures remain below 500°C and the temperatures for the materials used in the DHLW disposal container conceptual design are not such that melting or rapid mechanical failure would occur.

The results of the thermal evaluations indicate that the DHLW disposal container conceptual design with the MGDS design basis glass waste forms can satisfy the thermal limitations (i.e., goals) specified in Section 4.2.5 during normal expected conditions for disposal in the MGDS and therefore has a reasonable chance to meet the MGDS requirements for permanent disposal. Thus, this DHLW disposal container conceptual design may be used as a point of departure for analysis of designs put forth by the disposal container manufacturers. Two points should be noted: 1) more analysis is required to determine conditions for anticipated off-normal conditions, drift backfill, and for the vendor specific designs and 2) this analysis relies on unqualified design inputs. These items need to be considered in any work which utilizes these results.

9. Attachments

The attachments included are summarized in Table 9-1.

Table 9-1. Attachments of Supporting Documentation for the DHLW WP Analysis

Attachment Number	Title / Description	# of Pages
I	MATHCAD file listing determine the Hanford glass matrix heat load (File name: hanfg1.mcd date: 11/2/95)	6
II	MATHCAD print file of the Hanford glass matrix heat load versus ANSYS time steps (File name: hangls.prn date: 11/2/95)	2
III	ANSYS ready input created from MATHCAD print file for Hanford glass matrix. (File name: hangls1.dat date: 4/22/95)	1
IV	MATHCAD file listing determine the Savannah River glass matrix heat load (File name: srpg1.mcd date: 11/2/95)	6
V	MATHCAD print file of the Savannah River glass matrix heat load versus ANSYS time steps (File name: srpgls.prn date: 11/2/95)	2
VI	ANSYS ready input created from MATHCAD print file for Savannah River glass matrix. (File name: srpgls1.dat date: 5/4/95)	1
VII	MATHCAD file listing determine the West Valley glass matrix heat load (File name: wvyg1.mcd date: 11/2/95)	6
VIII	MATHCAD print file of the West Valley glass matrix heat load versus ANSYS time steps (File name: wvygls.prn date: 11/2/95)	2
IX	ANSYS ready input created from MATHCAD print file for West Valley glass matrix. (File name: wvygls1.dat date: 5/9/95)	1
X	Material properties file for ANSYS; data from Section 4.1. (File name: propsd1.dat date: 8/4/95)	3
XI	Model mesh plots of geometry. (File name: ansysplots.doc date: 8/4/95)	3
XII	Boundary condition file for high thermal load #1; from reference 5.13. (File name: c21x5a.parm used in Attachment XVII, XVIII, and XIX date: 3/31/95)	11
XIII	Boundary condition file for high thermal load #2; from reference 5.13. (File name: c21b5a.parm used in Attachment XX date: 3/7/95)	11
XIV	Boundary condition file for low thermal load #1; from reference 5.13. (File name: c21w5a.parm used in Attachment XXI date: 3/7/95)	11
XV	Boundary condition file for low thermal load #2; from reference 5.13. (File name: c21j5a.parm used in Attachment XXII date: 3/7/95)	11
XVI	Boundary condition file for low thermal load #3; from reference 5.13. (File name: c21h5a.parm used in Attachment XXIII date: 3/7/95)	11

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Attachment Number	Title / Description	# of Pages
XVII	ANSYS output for the 100 MTU/acre thermal loading for the Hanford glass matrix. (WP spacing: 16.2 m; drift spacing: 22.5 m date: 11/2/95 File name: glsh21x2.old.out)	182
XVIII	ANSYS output for the 100 MTU/acre thermal loading for the Savannah River glass matrix. (WP spacing: 16.2 m; drift spacing: 22.5 m date: 11/7/95 File name: glss21x2.old.out)	182
XIX	ANSYS output for the 100 MTU/acre thermal loading for the West Valley glass matrix. (WP spacing: 16.2 m; drift spacing: 22.5 m date: 11/9/95 File name: glsw21x2.old.out)	182
XX	ANSYS output for the 83 MTU/acre thermal loading for the Hanford glass matrix. (WP spacing: 19.5 m; drift spacing: 22.5 m date: 11/3/95 File name: glsh21b2.old.out) NOTE: Comment card in deck states 100 MTU/acre, but, boundary condition used is for 83 MTU/acre and the analysis is correct.	182
XXI	ANSYS output for the 25 MTU/acre thermal loading for the Hanford glass matrix. (WP spacing: 32.3 m; drift spacing: 45.0 m date: 11/7/95 File name: glsh21w2.old.out)	182
XXII	ANSYS output for the 25 MTU/acre thermal loading for the Hanford glass matrix. (WP spacing: 21.6 m; drift spacing: 67.5 m date: 11/7/95 File name: glsh21j2.old.out)	182
XXIII	ANSYS output for the 25 MTU/acre thermal loading for the Hanford glass matrix. (WP spacing: 16.2 m; drift spacing: 90.0 m date: 11/3/95 File name: glsh21h2.old.out)	182

File name: hanfg1.ued re 12/3/95

1) Read in data from reference 5.13 to obtain ANSYS time steps, file setup is as follows:

Column 1 = Time step in years; MGDS emplacement is $t=0$

Column 2 = W/Assembly for 10 year old/ 49 GWd/MTU BWR SNF (Not Used)

Column 3 = W/Assembly for 10 year old/ 48 GWd/MTU PWR SNF (Not Used)

Number of rows = nl

HL := READPRN(heatfile)

nl := rows(HL) nl = 101

Set index range: it := 1 .. nl

2) Break matrix into respective vectors for processing (i.e., get vector of ANSYS time steps isolated for use in the curve fit tests). The glass pour canisters are assumed to be emplaced in the repository immediately after manufacture (i.e., T is time since manufacture as stated in Section 4.3) :

$T := HL^{<1>}$ $BWR := HL^{<2>}$ $PWR := HL^{<3>}$

Echo the time steps to show that they are indeed the desired ANSYS time steps:

i1 := 1..15 i2 := 16..30 i3 := 31..45 i4 := 46..60

i5 := 61..75 i6 := 76..90 i7 := 91..nl

T_{i1}	T_{i2}	T_{i3}	T_{i4}	T_{i5}	T_{i6}	T_{i7}
0.000001	0.35	2	9.5	80	650	5000
0.01	0.4	2.5	10	85	700	5500
0.02	0.45	3	15	90	750	6000
0.03	0.5	3.5	20	95	800	6500
0.04	0.55	4	25	100	850	7000
0.05	0.6	4.5	30	150	900	7500
0.06	0.65	5	35	200	950	8000
0.07	0.7	5.5	40	250	1000	8500
0.08	0.75	6	45	300	1500	9000
0.09	0.8	6.5	50	350	2000	9500
0.1	0.85	7	55	400	2500	10000
0.15	0.9	7.5	60	450	3000	
0.2	0.95	8	65	500	3500	
0.25	1	8.5	70	550	4000	
0.3	1.5	9	75	600	4500	

3) Enter DHLW glass heat generation data (Hanford) from Table 3.4.7, page 3.4-15 of reference 5.12:

The current analysis is interested in W/glass pour canister with no cooling period (i.e., time zero) to 10,000 years after emplacement, therefore only the data for 0 to 10,000 years after manufacture will be curve fit.

Tb = the vector containing the base, or reference, time steps

HGb = the vector which contains the base, or reference, W/glass pour canister

nbt = the number of data points from reference 5.12

bm = the index range counter

nbt := 19

bm := 1 .. nbt

Tb_{bm} :=

0
1
2
5
10
15
20
30
50
100
200
300
350
500
1000
1050
2000
5000
10000

HGb_{bm} :=

869
683
595
502
439
391
349
279
181
67
19
12
11
8.7
3.9
3.6
0.86
0.08
0.06

4) Perform function fit to DHLW Hanford glass matrix data:

4.1) Define function equation form for curve fit:

The variables used are defined as follows:

F = Value of W/glass pour canister at time x after Manufacture

x = Time since manufacture for desired W/glass pour canister

aa = Curve fit coefficient 1

bb = Curve fit coefficient 2

cc = Curve fit coefficient 3

dd = Curve fit coefficient 4

ee = Curve fit coefficient 5

ff = Curve fit coefficient 6

gg = Curve fit coefficient 7

hh = Curve fit coefficient 8

ii = Curve fit coefficient 9

jj = Curve fit coefficient 10

$$F(x, aa, bb, cc, dd, ee, ff, gg, hh, ii, jj) := aa \cdot e^{\left(\frac{x}{bb}\right)} + cc \cdot e^{\left(\frac{x}{dd}\right)} + ee \cdot e^{\left(\frac{x}{ff}\right)} + gg \cdot e^{\left(\frac{x}{hh}\right)} + ii \cdot x + jj$$

4.2) Define an initial guess for each equation coefficient in order to start:

$$\begin{array}{lllll} a := 100 & c := 100 & e := 50 & g := 0 & i := 0 \\ b := -30 & d := -100 & f := -1500 & h := 5.0 & j := 1.0 \end{array}$$

4.3) Define function to minimize:

Function is simply the sum of the squares of the difference between the data point and the curve fit function's estimate of the value of the data point; as per the least squares method (p. 612, Ref. 5.1).

$$SSE(a, b, c, d, e, f, g, h, i, j) := \sum_{n=1}^{nbt} \left(HGb_n - F(Tb_n, a, b, c, d, e, f, g, h, i, j) \right)^2$$

4.4) Set MATHCAD to perform least squares solution to obtain curve fit equation coefficients. Set value restrictions for selected coefficients, give MATHCAD the goal of obtaining a set of equation coefficients which sets the function SSE to as close to zero as possible, and assign the newly defined curve fit coefficients to variables for later use.

Given

$$\text{SSE}(a, b, c, d, e, f, g, h, i, j) = 0 \quad b < 0 \quad d < 0 \quad f < 0 \quad h < 0 \quad i < 0$$

$$1 = 1 \quad 2 = 2 \quad 3 = 3 \quad 4 = 4$$

$$\begin{bmatrix} a \\ b \\ c \\ d \\ e \\ f \\ g \\ h \\ i \\ j \end{bmatrix} := \text{Minerr}(a, b, c, d, e, f, g, h, i, j)$$

4.5) List the new curve fit coefficient values as obtained from least squares method:

$$a = 227 \quad c = 89 \quad e = 530 \quad g = 25 \quad i = -0.00001$$

$$b = -1 \quad d = -2.2 \quad f = -41.5 \quad h = -500 \quad j = 0.16$$

5) Compare the curve fit function to the data points:

D = Curve fit function at each desired data point

res = Residual i.e., difference between curve fit function and data point

perc = Percent difference from data point value HGb

HGb = Data point value (Watts/glass pour canister)

Tb = Time in years since manufacture / repository emplacement

$$D_{bm} = F(Tb_{bm}, a, b, c, d, e, f, g, h, i, j)$$

$$res_{bm} = HGb_{bm} - D_{bm}$$

$$perc_{bm} = 100 \cdot \frac{res_{bm}}{HGb_{bm}}$$

Tb_{bm}	D_{bm}	HGb_{bm}	res_{bm}	$perc_{bm}$
0	871.16	869	-2.16	-0.248562
1	682.49177	683	0.50823	0.074411
2	596.702064	595	-1.702064	-0.286061
5	505.451799	502	-3.451799	-0.687609
10	442.131055	439	-3.131055	-0.713224
15	393.752632	391	-2.752632	-0.703998
20	351.513169	349	-2.513169	-0.720106
30	280.93773	279	-1.93773	-0.694527
50	181.645903	181	-0.645903	-0.356853
100	68.246584	67	-1.246584	-1.860573
200	21.19449	19	-2.19449	-11.549948
300	14.261704	12	-2.261704	-18.84753
350	12.686359	11	-1.686359	-15.330535
500	9.355089	8.7	-0.655089	-7.529761
1000	3.533382	3.9	0.366618	9.400459
1050	3.210911	3.6	0.389089	10.808036
2000	0.597891	0.86	0.262109	30.477794
5000	0.111135	0.08	-0.031135	-38.918748
10000	0.06	0.06	-0	-0.000086

The curve fit values are slightly larger, with the exception of the 1 year and 1000 year data points, than the data points provided in reference 5.12. Thus, the curve fit is a slightly conservative representation of the data. The data point at 1 year differs by only 0.075% and is therefore judged to be within an acceptable tolerance. The data point at 1000 years is 10% low, but this represents only a 0.37 W difference in the heat generation rate. This analysis is concerned with only 0 to 1000 years, therefore the values beyond 1000 years has no impact upon this analysis. Based on engineering judgement, the use of the curve fit function will not significantly affect the solutions performed by ANSYS.

6.0) Calculate the Watts/glass pour canister for each ANSYS time step, create the matrix "A" which has the ANSYS time step as the first column and the Watts/glass pour canister as the second column, and write the newly created matrix out to a MATHCAD print file.

$$DD_{it} := F(T_{it}, a, b, c, d, e, f, g, h, i, j)$$

$$A^{<1>} := T \quad A^{<2>} := DD$$

$$WRITEPRN(HANGLS) := A$$

1e-006	871.2
0.01	868.4
0.02	865.6
0.03	862.9
0.04	860.1
0.05	857.4
0.06	854.8
0.07	852.1
0.08	849.5
0.09	846.9
0.1	844.3
0.15	831.8
0.2	819.7
0.25	808.2
0.3	797.1
0.35	786.6
0.4	776.4
0.45	766.7
0.5	757.4
0.55	748.4
0.6	739.9
0.65	731.6
0.7	723.7
0.75	716.1
0.8	708.9
0.85	701.9
0.9	695.2
0.95	688.7
1	682.5
1.5	631.9
2	596.7
2.5	571.3
3	552.1
3.5	537.1
4	524.9
4.5	514.5
5	505.5
5.5	497.3
6	489.9
6.5	483
7	476.4
7.5	470.2
8	464.3
8.5	458.5
9	452.9
9.5	447.5
10	442.1
15	393.8
20	351.5
25	314.1
30	280.9
35	251.5
40	225.4
45	202.2
50	181.6
55	163.4
60	147.2
65	132.8
70	120
75	108.7
80	98.57
85	89.6
90	81.64
95	74.55
100	68.25
150	32.95
200	21.19
250	16.6
300	14.26
350	12.69

400	11.42
450	10.33
500	9.355
550	8.477
600	7.684
650	6.967
700	6.318
750	5.731
800	5.199
850	4.719
900	4.283
950	3.89
1000	3.533
1500	1.39
2000	0.5979
2500	0.3034
3000	0.192
3500	0.1478
4000	0.1284
4500	0.1181
5000	0.1111
5500	0.1054
6000	0.1002
6500	0.09506
7000	0.09002
7500	0.08501
8000	0.08
8500	0.075
9000	0.07
9500	0.065
1e+004	0.06

```

/COM, *****
/COM, ** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
/COM, ** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **
/COM, **
/COM, ** Executable File Name: MATHCAD.EXE **
/COM, ** Output File Name: hanfgl1.dat **
/COM, ** Execution Date: 04/17/95 **
/COM, ** Start Age (years): 0.0 **
/COM, ** Decay Period (years): 10000 **
/COM, ** Enrichment (kg Pu): N.A. **
/COM, ** Burnup (MWd/MTM): N.A. **
/COM, ** Assembly Type: SR Pour Canis **
/COM, ** Pu Fract. (kg Pu/KG HM):N.A. **
/COM, **
/COM, ** ASSY(1) is the Pour Canister heat in Watts. **
/COM, ** ASSY(0) is the time post emplacement in years. **
/COM, *****
ASSY( 1,1)= 871.20, 868.40, 865.60, 862.90, 860.10, 857.40,
ASSY( 7,1)= 854.80, 852.10, 849.50, 846.90, 844.30, 831.80,
ASSY(13,1)= 819.70, 808.20, 797.10, 786.60, 776.40, 766.70,
ASSY(19,1)= 757.40, 748.40, 739.90, 731.60, 723.70, 716.10,
ASSY(25,1)= 708.90, 701.90, 695.20, 688.70, 682.50, 631.90,
ASSY(31,1)= 596.70, 571.30, 552.10, 537.10, 524.90, 514.50,
ASSY(37,1)= 505.50, 497.30, 489.90, 483.00, 476.40, 470.20,
ASSY(43,1)= 464.30, 458.50, 452.90, 447.50, 442.10, 393.80,
ASSY(49,1)= 351.50, 314.10, 280.90, 251.50, 225.40, 202.20,
ASSY(55,1)= 181.60, 163.40, 147.20, 132.80, 120.00, 108.70,
ASSY(61,1)= 98.57, 89.60, 81.64, 74.55, 68.25, 32.95,
ASSY(67,1)= 21.19, 16.60, 14.26, 12.69, 11.42, 10.33,
ASSY(73,1)= 9.355, 8.477, 7.684, 6.967, 6.318, 5.731,
ASSY(79,1)= 5.199, 4.719, 4.283, 3.890, 3.533, 1.390,
ASSY(85,1)= 0.5979, 0.3034, 0.1920, 0.1478, 0.1284, 0.1181,
ASSY(91,1)= 0.1111, 0.1054, 0.1002, 0.0951, 0.0900, 0.0850,
ASSY(97,1)= 0.0800, 0.0750, 0.0700, 0.0650, 0.0600,
ASSY( 1,0)= 0.000001, 0.01, 0.02, 0.03, 0.04, 0.05,
ASSY( 7,0)= 0.06, 0.07, 0.08, 0.09, 0.10, 0.15,
ASSY(13,0)= 0.20, 0.25, 0.30, 0.35, 0.40, 0.45,
ASSY(19,0)= 0.50, 0.55, 0.60, 0.65, 0.70, 0.75,
ASSY(25,0)= 0.80, 0.85, 0.90, 0.95, 1.00, 1.50,
ASSY(31,0)= 2.00, 2.50, 3.00, 3.50, 4.00, 4.50,
ASSY(37,0)= 5.00, 5.50, 6.00, 6.50, 7.00, 7.50,
ASSY(43,0)= 8.00, 8.50, 9.00, 9.50, 10.00, 15.00,
ASSY(49,0)= 20.00, 25.00, 30.00, 35.00, 40.00, 45.00,
ASSY(55,0)= 50.00, 55.00, 60.00, 65.00, 70.00, 75.00,
ASSY(61,0)= 80.00, 85.00, 90.00, 95.00, 100.00, 150.00,
ASSY(67,0)= 200.00, 250.00, 300.00, 350.00, 400.00, 450.00,
ASSY(73,0)= 500.00, 550.00, 600.00, 650.00, 700.00, 750.00,
ASSY(79,0)= 800.00, 850.00, 900.00, 950.00, 1000.00, 1500.00,
ASSY(85,0)= 2000.00, 2500.00, 3000.00, 3500.00, 4000.00, 4500.00,
ASSY(91,0)= 5000.00, 5500.00, 6000.00, 6500.00, 7000.00, 7500.00,
ASSY(97,0)= 8000.00, 8500.00, 9000.00, 9500.00, 10000.00,
ASSY( 0,1)=1.0
/COM, *****
/EOF

```


File name: supgl.mcd rev 11/2/95

1) Read in data from reference 5.13 to obtain ANSYS time steps,
file setup is as follows:

Column 1 = Time step in years; MGDS emplacement is $t=0$

Column 2 = W/Assembly for 10 year old/ 49 GWd/MTU BWR SNF (Not Used)

Column 3 = W/Assembly for 10 year old/ 48 GWd/MTU PWR SNF (Not Used)

Number of rows = nl

HL := READPRN(heatfile)

nl := rows(HL)

nl = 101

Set index range:

it := 1 .. nl

2) Break matrix into respective vectors for processing (i.e., get vector of ANSYS time steps isolated for use in the curve fit tests). The glass pour canisters are assumed to be emplaced in the repository immediately after manufacture (i.e., T is time since manufacture as stated in Section 4.3) :

T := HL^{<1>}

BWR := HL^{<2>}

PWR := HL^{<3>}

Echo the time steps to show that they are indeed the desired ANSYS time steps:

i1 := 1 .. 15

i2 := 16 .. 30

i3 := 31 .. 45

i4 := 46 .. 60

i5 := 61 .. 75

i6 := 76 .. 90

i7 := 91 .. nl

T _{i1}	T _{i2}	T _{i3}	T _{i4}	T _{i5}	T _{i6}	T _{i7}
0.000001	0.35	2	9.5	80	650	5000
0.01	0.4	2.5	10	85	700	5500
0.02	0.45	3	15	90	750	6000
0.03	0.5	3.5	20	95	800	6500
0.04	0.55	4	25	100	850	7000
0.05	0.6	4.5	30	150	900	7500
0.06	0.65	5	35	200	950	8000
0.07	0.7	5.5	40	250	1000	8500
0.08	0.75	6	45	300	1500	9000
0.09	0.8	6.5	50	350	2000	9500
0.1	0.85	7	55	400	2500	10000
0.15	0.9	7.5	60	450	3000	
0.2	0.95	8	65	500	3500	
0.25	1	8.5	70	550	4000	
0.3	1.5	9	75	600	4500	

3) Enter DHLW glass heat generation data (Savannah River) from Table 3.3.5, page 3.3-12 of reference 5.12:

The current analysis is interested in W/glass pour canister with no cooling period (i.e., time zero) to 10,000 years after emplacement, therefore only the data for 0 to 10,000 years after manufacture will be curve fit.

Tb = the vector containing the base, or reference, time steps

HGb = the vector which contains the base, or reference, W/glass pour canister

nbt = the number of data points from reference 5.12

bm = the index range counter

nbt := 19

bm := 1 .. nbt

Tb_{bm} :=

0
1
2
5
10
15
20
30
50
100
200
300
350
500
1000
1050
2000
5000
10000

HGb_{bm} :=

709
627
586
527
467
418
374
301
198
75
17
7.2
5.2
2.7
1.1
1.1
0.72
0.54
0.43

4) Perform function fit to DHLW Savannah River glass matrix data:

4.1) Define function equation form for curve fit:

The variables used are defined as follows:

F = Value of W/glass pour canister at time x after Manufacture

x = Time since manufacture for desired W/glass pour canister

aa = Curve fit coefficient 1

bb = Curve fit coefficient 2

cc = Curve fit coefficient 3

dd = Curve fit coefficient 4

ee = Curve fit coefficient 5

ff = Curve fit coefficient 6

gg = Curve fit coefficient 7

hh = Curve fit coefficient 8

ii = Curve fit coefficient 9

jj = Curve fit coefficient 10

$$F(x, aa, bb, cc, dd, ee, ff, gg, hh, ii, jj) = aa \cdot e^{\left(\frac{x}{bb}\right)} + cc \cdot e^{\left(\frac{x}{dd}\right)} + ee \cdot e^{\left(\frac{x}{ff}\right)} + gg \cdot e^{\left(\frac{x}{hh}\right)} + ii \cdot x + jj$$

4.2) Define an initial guess for each equation coefficient in order to start:

a := 100

c := 100

e := 50

g := 0

i := 0

b := -30

d := -100

f := -1500

h := 5.0

j := 1.0

4.3) Define function to minimize:

Function is simply the sum of the squares of the difference between the data point and the curve fit function's estimate of the value of the data point; as per the least squares method (p. 612, Ref. 5.1).

$$SSE(a, b, c, d, e, f, g, h, i, j) = \sum_{n=1}^{nbt} \left(HGb_n - F(Tb_n, a, b, c, d, e, f, g, h, i, j) \right)^2$$

4.4) Set MATHCAD to perform least squares solution to obtain curve fit equation coefficients. Set value restrictions for selected coefficients, give MATHCAD the goal of obtaining a set of equation coefficients which sets the function SSE to as close to zero as possible, and assign the newly defined curve fit coefficients to variables for later use.

Given

$$\text{SSE}(a, b, c, d, e, f, g, h, i, j) = 0 \quad b < 0 \quad d < 0 \quad f < 0 \quad h < 0 \quad i < 0$$

$$1 = 1 \quad 2 = 2 \quad 3 = 3 \quad 4 = 4$$

$$\begin{bmatrix} a \\ b \\ c \\ d \\ e \\ f \\ g \\ h \\ i \\ j \end{bmatrix} = \text{Minerr}(\alpha, b, c, d, e, f, g, h, i, j)$$

4.5) List the new curve fit coefficient values as obtained from least squares method:

$$a = 87.5 \quad c = 36.8 \quad e = 540 \quad g = 45 \quad i = -0.000035$$

$$b = -1.12 \quad d = -1.67 \quad f = -42 \quad h = -160 \quad j = 0.83$$

5) Compare the curve fit function to the data points:

D = Curve fit function at each desired data point

res = Residual i.e., difference between curve fit function and data point

perc = Percent difference from data point value HGb

HGb = Data point value (Watts/glass pour canister)

Tb = Time in years since manufacture / repository emplacement

$$D_{bm} := F(Tb_{bm}, a, b, c, d, e, f, g, h, i, j)$$

$$res_{bm} := HGb_{bm} - D_{bm}$$

$$perc_{bm} := 100 \cdot \frac{res_{bm}}{HGb_{bm}}$$

Tb _{bm}	D _{bm}	HGb _{bm}	res _{bm}	perc _{bm}
0	710.13	709	-1.13	-0.159379
1	628.894634	627	-1.894634	-0.302174
2	585.941573	586	0.058427	0.00997
5	526.689252	527	0.310748	0.058965
10	468.796072	467	-1.796072	-0.384598
15	419.630369	418	-1.630369	-0.39004
20	375.960279	374	-1.960279	-0.524139
30	302.487757	301	-1.487757	-0.494271
50	197.952226	198	0.047774	0.024128
100	74.843001	75	0.156999	0.209332
200	18.332343	17	-1.332343	-7.837312
300	8.147338	7.2	-0.947338	-13.157476
350	5.99641	5.2	-0.79641	-15.315569
500	2.793311	2.7	-0.093311	-3.455978
1000	0.88187	1.1	0.21813	19.829958
1050	0.856806	1.1	0.243194	22.108566
2000	0.760168	0.72	-0.040168	-5.578847
5000	0.655	0.54	-0.115	-21.296296
10000	0.48	0.43	-0.05	-11.627907

The majority of the curve fit values are slightly larger than the data points provided in reference 5.12. Thus, the curve fit is a slightly conservative representation of the data. The data points less than 1000 years which are less than the reference 5.12 values differ by at most by 0.21% and is therefore judged to be within an acceptable tolerance. The data point at 1000 years is 19.83% low, but this represents only a 0.22 W difference in the heat generation rate. This analysis is concerned with only 0 to 1000 years, therefore the values beyond 1000 years has no impact upon this analysis. Based on engineering judgement, the use of the curve fit function will not significantly affect the solutions performed by ANSYS.

6.0) Calculate the Watts/glass pour canister for each ANSYS time step, create the matrix "A" which has the ANSYS time step as the first column and the Watts/glass pour canister as the second column, and write the newly created matrix out to a MATHCAD print file.

$$DD_{it} := F(T_{it}, a, b, c, d, e, f, g, h, i, j)$$

$$A^{<1>} := T \quad A^{<2>} := DD$$

$$WRITEPRN(SRPGLS) := A$$

1e-006	710.1
0.01	709
0.02	707.9
0.03	706.8
0.04	705.7
0.05	704.6
0.06	703.5
0.07	702.4
0.08	701.3
0.09	700.3
0.1	699.2
0.15	694
0.2	689
0.25	684.2
0.3	679.6
0.35	675.1
0.4	670.8
0.45	666.6
0.5	662.6
0.55	658.7
0.6	654.9
0.65	651.3
0.7	647.7
0.75	644.3
0.8	641
0.85	637.9
0.9	634.8
0.95	631.8
1	628.9
1.5	604.4
2	585.9
2.5	571.6
3	559.9
3.5	550
4	541.5
4.5	533.8
5	526.7
5.5	520
6	513.7
6.5	507.6
7	501.7
7.5	496
8	490.4
8.5	484.8
9	479.4
9.5	474.1
10	468.8
15	419.6
20	376
25	337.1
30	302.5
35	271.7
40	244.2
45	219.8
50	198
55	178.5
60	161.2
65	145.7
70	131.9
75	119.5
80	108.5
85	98.64
90	89.82
95	81.92
100	74.84
150	33.63
200	18.33
250	11.66
300	8.147
350	5.996

400	4.549
450	3.529
500	2.793
550	2.258
600	1.868
650	1.582
700	1.372
750	1.218
800	1.105
850	1.022
900	0.9608
950	0.9155
1000	0.8819
1500	0.7813
2000	0.7602
2500	0.7425
3000	0.725
3500	0.7075
4000	0.69
4500	0.6725
5000	0.655
5500	0.6375
6000	0.62
6500	0.6025
7000	0.585
7500	0.5675
8000	0.55
8500	0.5325
9000	0.515
9500	0.4975
1e+004	0.48


```

/COM, *****
/COM, ** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
/COM, ** Output Calculated by T. L. Lotz 5/04/95 for ORNL Report Data **
/COM, **
/COM, ** Executable File Name: MATHCAD.EXE **
/COM, ** Output File Name: srpgls1.dat **
/COM, ** Execution Date: 05/04/95 **
/COM, ** Start Age (years): 0.0 **
/COM, ** Decay Period (years): 10000 **
/COM, ** Enrichment (kg Pu): N.A. **
/COM, ** Burnup (MWd/MTHM): N.A. **
/COM, ** Assembly Type: SR Pour Canisters **
/COM, ** Pu Fract. (kg Pu/KG HM):N.A. **
/COM, **
/COM, ** ASSY(#,1) is the Pour Canister heat in Watts. **
/COM, ** ASSY(#,0) is the time post emplacement in years. **
/COM, *****
ASSY( 1,1)= 710.10, 709.00, 707.90, 706.80, 705.70, 704.60,
ASSY( 7,1)= 703.50, 702.40, 701.30, 700.30, 699.20, 694.00,
ASSY(13,1)= 689.00, 684.20, 679.60, 675.10, 670.80, 666.60,
ASSY(19,1)= 662.60, 658.70, 654.90, 651.30, 647.70, 644.30,
ASSY(25,1)= 641.00, 637.90, 634.80, 631.80, 628.90, 604.40,
ASSY(31,1)= 585.90, 571.60, 559.90, 550.00, 541.50, 533.80,
ASSY(37,1)= 526.70, 520.00, 513.70, 507.60, 501.70, 496.00,
ASSY(43,1)= 490.40, 484.80, 479.40, 474.10, 468.80, 419.60,
ASSY(49,1)= 376.00, 337.10, 302.50, 271.70, 244.20, 219.80,
ASSY(55,1)= 198.00, 178.50, 161.20, 145.70, 131.90, 119.50,
ASSY(61,1)= 108.50, 98.64, 89.82, 81.92, 74.84, 33.63,
ASSY(67,1)= 18.33, 11.66, 8.147, 5.996, 4.549, 3.529,
ASSY(73,1)= 2.793, 2.258, 1.868, 1.582, 1.372, 1.218,
ASSY(79,1)= 1.105, 1.022, 0.9608, 0.9155, 0.8819, 0.7813,
ASSY(85,1)= 0.7602, 0.7425, 0.7250, 0.7075, 0.6900, 0.6725,
ASSY(91,1)= 0.6550, 0.6375, 0.6200, 0.6025, 0.5850, 0.5675,
ASSY(97,1)= 0.5500, 0.5325, 0.5150, 0.4975, 0.4800,
ASSY( 1,0)= 0.000001, 0.01, 0.02, 0.03, 0.04, 0.05,
ASSY( 7,0)= 0.06, 0.07, 0.08, 0.09, 0.10, 0.15,
ASSY(13,0)= 0.20, 0.25, 0.30, 0.35, 0.40, 0.45,
ASSY(19,0)= 0.50, 0.55, 0.60, 0.65, 0.70, 0.75,
ASSY(25,0)= 0.80, 0.85, 0.90, 0.95, 1.00, 1.50,
ASSY(31,0)= 2.00, 2.50, 3.00, 3.50, 4.00, 4.50,
ASSY(37,0)= 5.00, 5.50, 6.00, 6.50, 7.00, 7.50,
ASSY(43,0)= 8.00, 8.50, 9.00, 9.50, 10.00, 15.00,
ASSY(49,0)= 20.00, 25.00, 30.00, 35.00, 40.00, 45.00,
ASSY(55,0)= 50.00, 55.00, 60.00, 65.00, 70.00, 75.00,
ASSY(61,0)= 80.00, 85.00, 90.00, 95.00, 100.00, 150.00,
ASSY(67,0)= 200.00, 250.00, 300.00, 350.00, 400.00, 450.00,
ASSY(73,0)= 500.00, 550.00, 600.00, 650.00, 700.00, 750.00,
ASSY(79,0)= 800.00, 850.00, 900.00, 950.00, 1000.00, 1500.00,
ASSY(85,0)= 2000.00, 2500.00, 3000.00, 3500.00, 4000.00, 4500.00,
ASSY(91,0)= 5000.00, 5500.00, 6000.00, 6500.00, 7000.00, 7500.00,
ASSY(97,0)= 8000.00, 8500.00, 9000.00, 9500.00, 10000.00,
ASSY( 0,1)=1.0
/COM, *****
/EOF

```

File name: wnygl.mcd on 11/2/95

1) Read in data from reference 5.13 to obtain ANSYS time steps,
file setup is as follows:

Column 1 = Time step in years; MGDS emplacement is $t=0$

Column 2 = W/Assembly for 10 year old/ 49 GWd/MTU BWR SNF (Not Used)

Column 3 = W/Assembly for 10 year old/ 48 GWd/MTU PWR SNF (Not Used)

Number of rows = nl

HL := READPRN(heatfile)

nl := rows(HL) nl = 101

Set index range: it := 1 .. nl

2) Break matrix into respective vectors for processing (i.e., get vector of ANSYS time steps isolated for use in the curve fit tests). The glass pour canisters are assumed to be emplaced in the repository immediately after manufacture (i.e., T is time since manufacture as stated in Section 4.3) :

T := HL^{<1>}

BWR := HL^{<2>}

PWR := HL^{<3>}

Echo the time steps to show that they are indeed the desired ANSYS time steps:

i1 := 1 .. 15

i2 := 16 .. 30

i3 := 31 .. 45

i4 := 46 .. 60

i5 := 61 .. 75

i6 := 76 .. 90

i7 := 91 .. nl

T _{i1}	T _{i2}	T _{i3}	T _{i4}	T _{i5}	T _{i6}	T _{i7}
0.000001	0.35	2	9.5	80	650	5000
0.01	0.4	2.5	10	85	700	5500
0.02	0.45	3	15	90	750	6000
0.03	0.5	3.5	20	95	800	6500
0.04	0.55	4	25	100	850	7000
0.05	0.6	4.5	30	150	900	7500
0.06	0.65	5	35	200	950	8000
0.07	0.7	5.5	40	250	1000	8500
0.08	0.75	6	45	300	1500	9000
0.09	0.8	6.5	50	350	2000	9500
0.1	0.85	7	55	400	2500	10000
0.15	0.9	7.5	60	450	3000	
0.2	0.95	8	65	500	3500	
0.25	1	8.5	70	550	4000	
0.3	1.5	9	75	600	4500	

3) Enter DHLW glass heat generation data (West Valley) from Table 3.2.5, page 3.2-10 of reference 5.12:

The current analysis is interested in W/glass pour canister with no cooling period (i.e., time zero) to 10,000 years after emplacement, therefore only the data for 0 to 10,000 years after manufacture will be curve fit.

Tb = the vector containing the base, or reference, time steps

HGb = the vector which contains the base, or reference, W/glass pour canister

nbt = the number of data points from reference 5.12

bm = the index range counter

nbt := 19

bm := 1 .. nbt

Tb_{bm} :=

0
1
2
5
10
15
20
30
50
100
200
300
350
500
1000
1050
2000
5000
10000

HGb_{bm} :=

326
319
311
290
258
230
205
164
105
37
8.9
5.4
4.8
3.7
1.9
1.8
0.70
0.33
0.26

4) Perform function fit to DHLW West Valley glass matrix data:

4.1) Define function equation form for curve fit:

The variables used are defined as follows:

F = Value of W/glass pour canister at time x after Manufacture
 x = Time since manufacture for desired W/glass pour canister
 aa = Curve fit coefficient 1
 bb = Curve fit coefficient 2
 cc = Curve fit coefficient 3
 dd = Curve fit coefficient 4
 ee = Curve fit coefficient 5
 ff = Curve fit coefficient 6
 gg = Curve fit coefficient 7
 hh = Curve fit coefficient 8
 ii = Curve fit coefficient 9
 jj = Curve fit coefficient 10

$$F(x, aa, bb, cc, dd, ee, ff, gg, hh, ii, jj) := aa \cdot e^{\left(\frac{x}{bb}\right)} + cc \cdot e^{\left(\frac{x}{dd}\right)} + ee \cdot e^{\left(\frac{x}{ff}\right)} + gg \cdot e^{\left(\frac{x}{hh}\right)} + ii \cdot x + jj$$

4.2) Define an initial guess for each equation coefficient in order to start:

a := 9.0 c := 59.0 e := 226.6 g := 32.5 i := -0.00005
 b := -450 d := -35.0 f := -39.8 h := -79.0 j := 0.7

4.3) Define function to minimize:

Function is simply the sum of the squares of the difference between the data point and the curve fit function's estimate of the value of the data point; as per the least squares method (p. 612, Ref. 5.1).

$$SSE(a, b, c, d, e, f, g, h, i, j) := \sum_{n=1}^{nbt} \left(HGb_n - F(Tb_n, a, b, c, d, e, f, g, h, i, j) \right)^2$$

4.4) Set MATHCAD to perform least squares solution to obtain curve fit equation coefficients. Set value restrictions for selected coefficients, give MATHCAD the goal of obtaining a set of equation coefficients which sets the function SSE to as close to zero as possible, and assign the newly defined curve fit coefficients to variables for later use.

Given

$$\text{SSE}(a,b,c,d,e,f,g,h,i,j)=0 \quad b<0 \quad d<0 \quad f<0 \quad h<0 \quad i<0$$

$$1=1 \quad 2=2 \quad 3=3 \quad 4=4$$

$$\begin{bmatrix} a \\ b \\ c \\ d \\ e \\ f \\ g \\ h \\ i \\ j \end{bmatrix} := \text{Minerr}(a,b,c,d,e,f,g,h,i,j)$$

4.5) List the new curve fit coefficient values as obtained from least squares method:

$a = 8.391027$	$e = 226.205571$	$i = -0.000037$
$b = -492.856902$	$f = -40.888468$	$j = 0.61829$
$c = 58.594658$	$g = 32.122501$	
$d = -39.82491$	$h = -55.973088$	

5) Compare the curve fit function to the data points:

D = Curve fit function at each desired data point

res = Residual i.e., difference between curve fit function and data point

perc = Percent difference from data point value HGb

HGb = Data point value (Watts/glass pour canister)

Tb = Time in years since manufacture / repository emplacement

$$D_{bm} := F(Tb_{bm}, a, b, c, d, e, f, g, h, i, j)$$

$$res_{bm} := HGb_{bm} - D_{bm}$$

$$perc_{bm} := 100 \cdot \frac{res_{bm}}{HGb_{bm}}$$

Tb _{bm}	D _{bm}	HGb _{bm}	res _{bm}	perc _{bm}
0	325.932046	326	0.067954	0.020845
1	318.428061	319	0.571939	0.179291
2	311.102251	311	-0.102251	-0.032878
5	290.151764	290	-0.151764	-0.052332
10	258.419541	258	-0.419541	-0.162613
15	230.274125	230	-0.274125	-0.119185
20	205.307039	205	-0.307039	-0.149775
30	163.502168	164	0.497832	0.303556
50	104.635015	105	0.364985	0.347605
100	37.208103	37	-0.208103	-0.56244
200	9.189948	8.9	-0.289948	-3.257848
300	5.502063	5.4	-0.102063	-1.890048
350	4.844242	4.8	-0.044242	-0.921706
500	3.647799	3.7	0.052201	1.410824
1000	1.684423	1.9	0.215577	11.346158
1050	1.576146	1.8	0.223854	12.436306
2000	0.689271	0.7	0.010729	1.532682
5000	0.433497	0.33	-0.103497	-31.362635
10000	0.248045	0.26	0.011955	4.598161

The majority of the curve fit values are slightly larger than the data points provided in reference 5.12. Thus, the curve fit is a slightly conservative representation of the data. The data points less than 500 years which are less than the reference 5.12 values differ by at most by 0.35% and is therefore judged to be within an acceptable tolerance. The data point at 500 years is 1.41% low and at 1000 years is 11.35% low, but this represents only a 0.052 W and 0.22 W difference respectively in the heat generation rate. This analysis is concerned with only 0 to 1000 years, therefore the values beyond 1000 years has no impact upon this analysis. Based on engineering judgement, the use of the curve fit function will not significantly affect the solutions performed by ANSYS.

6.0) Calculate the Watts/glass pour canister for each ANSYS time step, create the matrix "A" which has the ANSYS time step as the first column and the Watts/glass pour canister as the second column, and write the newly created matrix out to a MATHCAD print file.

$$DD_{it} := F(T_{it}, a, b, c, d, e, f, g, h, i, j)$$

$$A^{<1>} := T \quad A^{<2>} := DD$$

$$WRITEPRN(WVYGLS) := A$$

1e-006 325.932
0.01 325.856
0.02 325.78
0.03 325.704
0.04 325.628
0.05 325.553
0.06 325.477
0.07 325.401
0.08 325.325
0.09 325.249
0.1 325.174
0.15 324.795
0.2 324.417
0.25 324.039
0.3 323.662
0.35 323.285
0.4 322.909
0.45 322.533
0.5 322.158
0.55 321.783
0.6 321.408
0.65 321.034
0.7 320.66
0.75 320.287
0.8 319.914
0.85 319.542
0.9 319.17
0.95 318.799
1 318.428
1.5 314.743
2 311.102
2.5 307.505
3 303.95
3.5 300.438
4 296.968
4.5 293.54
5 290.152
5.5 286.804
6 283.497
6.5 280.229
7 277
7.5 273.81
8 270.657
8.5 267.543
9 264.465
9.5 261.424
10 258.42
15 230.274
20 205.307
25 183.157
30 163.502
35 146.06
40 130.579
45 116.837
50 104.635
55 93.7998
60 84.176
65 75.6265
70 68.0298
75 61.2781
80 55.2759
85 49.9386
90 45.1913
95 40.9674
100 37.2081
150 16.1317
200 9.18995
250 6.64098
300 5.50206
350 4.84424

400	4.37096
450	3.98379
500	3.6478
550	3.349
600	3.08065
650	2.83869
700	2.62014
750	2.4226
800	2.24398
850	2.08242
900	1.93628
950	1.80406
1000	1.68442
1500	0.962742
2000	0.689271
2500	0.578314
3000	0.526283
3500	0.495617
4000	0.472698
4500	0.452588
5000	0.433497
5500	0.414774
6000	0.396186
6500	0.377646
7000	0.359124
7500	0.340608
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8500	0.303582
9000	0.285069
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10000	0.248045

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/COM, ** Output File Name: wvygls1.dat **
/COM, ** Execution Date: 05/08/95 **
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/COM, ** Decay Period (years): 10000 **
/COM, ** Enrichment (kg Pu): N.A. **
/COM, ** Burnup (MWd/MTM): N.A. **
/COM, ** Assembly Type: SR Pour Canisters **
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ASSY(13,1)= 324.42, 324.04, 323.66, 323.29, 322.91, 322.53,
ASSY(19,1)= 322.16, 321.78, 321.41, 321.03, 320.66, 320.29,
ASSY(25,1)= 319.91, 319.54, 319.17, 318.80, 318.43, 314.74,
ASSY(31,1)= 311.10, 307.51, 303.95, 300.44, 296.97, 293.54,
ASSY(37,1)= 290.15, 286.80, 283.50, 280.23, 277.00, 273.81,
ASSY(43,1)= 270.66, 267.54, 264.47, 261.42, 258.42, 230.27,
ASSY(49,1)= 205.31, 183.16, 163.50, 146.06, 130.58, 116.84,
ASSY(55,1)= 104.64, 93.80, 84.18, 75.63, 68.03, 61.28,
ASSY(61,1)= 55.28, 49.94, 45.19, 40.97, 37.21, 16.13,
ASSY(67,1)= 9.190, 6.641, 5.502, 4.844, 4.371, 3.984,
ASSY(73,1)= 3.648, 3.349, 3.081, 2.839, 2.620, 2.423,
ASSY(79,1)= 2.244, 2.082, 1.936, 1.804, 1.684, 0.9627,
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ASSY( 7,0)= 0.06, 0.07, 0.08, 0.09, 0.10, 0.15,
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ASSY(25,0)= 0.80, 0.85, 0.90, 0.95, 1.00, 1.50,
ASSY(31,0)= 2.00, 2.50, 3.00, 3.50, 4.00, 4.50,
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ASSY(55,0)= 50.00, 55.00, 60.00, 65.00, 70.00, 75.00,
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ASSY(73,0)= 500.00, 550.00, 600.00, 650.00, 700.00, 750.00,
ASSY(79,0)= 800.00, 850.00, 900.00, 950.00, 1000.00, 1500.00,
ASSY(85,0)= 2000.00, 2500.00, 3000.00, 3500.00, 4000.00, 4500.00,
ASSY(91,0)= 5000.00, 5500.00, 6000.00, 6500.00, 7000.00, 7500.00,
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/COM, 2 Incaloy 825 Inner Container (resistant)
/COM, 3 A516 Mild Steel Outer Container (allowance)
/COM, 4 Concrete Concrete used for invert; Track Bed
/COM, 5 Glass (Pyrex) Boro-Silicate Glass form
/COM, 6 TSw2 Drift Wall - Repository Horizon
/COM, 7 Helium Canister Fill Gas
/COM, 8 Air Alternate Fill Gas
/COM, 9 Nitrogen Alternate Fill Gas
/COM, 10 Argon Alternate Fill Gas
/COM, 11 Aluminum 6063 Thermal Conductor
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/COM, **      Emissivity .EMIS **
/COM, **      Conductivity: KXX (W/m/K) **
/COM, **      Specific Heat: C (J/kg/K) **
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/COM,
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/COM, Density of rock (6) is 1.0 because
/COM, heat capacitances (J/m^3/K) are entered for C
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MPDATA, KXX, 9, 1, 0.0230, 0.0240, 0.0260, 0.0290, 0.0330, 0.0360,
MPDATA, KXX, 9, 7, 0.0390, 0.0420, 0.0450, 0.0470, 0.0500, 0.0520,
MPDATA, KXX, 9, 13, 0.0550, 0.0600, 0.0650,
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ZV =1
*DIST=5
YF =.5333
PRECISE HIDDEN

1

ANSYS 5.0 A
NOV 1 1995
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PLOT NO. 1
ELEMENTS
MAT NUM

ZV =1
*DIST=5
YF =.5333
PRECISE HIDDEN

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

1

ANSYS 5.0 A
NOV 1 1995
19:39:23
PLOT NO. 1
ELEMENTS
MAT NUM


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WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glsh21x2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

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 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glsh21x2.inp *
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP *
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat *
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED) *
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: hangls1.dat *
 16 /COM, * Initial Heat Load: 871 W/canister *
 17 /COM, *
 18 /COM, * Surface Temp. file: c21x5a.parm *


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19 /COM, *      100 MTU/acre (24.7 kgU/m^2) AML (High Thermal Loading) *
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 22.5 m *
22 /COM, *      WP c/c spacing = 16.165 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,parm,
35 /COM, Read in surface temps. from repository model
36 /COM, PARRES,CHANGE,c21x5a,parm,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 /COM, PI=3.141592654
64 /COM, SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 /COM, *SET,DFRAD,2.5,
73 /COM, *SET,INVRT,0.7,
74 /COM, *SET,WPSPC,16.165,
75 /COM, *SET,OFFST,0.1833,
76 /COM, XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 /COM, YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLen = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM, DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM, Required ceramic and drum parameters:
102 /COM, CDRAD = glass radius (m)
103 /COM, CDHGT = glass hieght; hieght of fill (m)
104 /COM, DRMIR = SRP Canister inner rad. (m)
105 /COM, DRMOR = SRP Canister drum outer rad. (m)
106 /COM, DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM, DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM, DRLEN = SRP Canister outer length (m)
109 /COM, DRILN = SRP Canister Inner length (m)
110 /COM, DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM, DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM, DRMOF = SRP Canister center line off set (m)
113 /COM, PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM, FVOLU = can_volume=PI*glass_fill_radius^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM, Define Extrude Distances as required:
130 /COM, Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM, Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM, *****
146 /COM, Define calculated parameters
147 /COM, ASSY = assembly heat production (W) f(yrs)
148 /COM, FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM, *****
154 /COM, Define 45 degree point of reference:
155 /COM, TC045 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM, TC145 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM, HC145 = x coord. WP Center Line side of center Glass at
158 /COM, HC045 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM, CC045 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM, SC045 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM, SC145 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM, MI45 = x coord. DCIRD at 45 deg.
163 /COM, MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM, DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TCO45=(DRMOF+DRMOR-DRMOR/SQT)
166 TCI45=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CCO45=(DRMOF+DRMOR)
170 SCO45=(DRMOF+DRMOR+DRMOR/SQT)
171 SCI45=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM, *****
177 /COM, Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM, *****
194 /COM, File props01.dat describes material properties
195 /COM, and thier reference numbers
196 MPREAD,propsd1,dat,
197 /COM, *****
198 /COM, Define new material 15 for low thermal loading
199 /COM, outer barrier of 70/30 Copper Nickel (C71500)
200 /COM, DENS (kg/m^3)
201 /COM, Emissivity: EMIS
202 /COM, Conductivity: KXX (W/m/K)
203 /COM, Specific Heat: C (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM, Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM, Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM, Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM, Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7, (5.0/9.0*(1112.0-32.0)), (5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM, *****
223 /COM, Read in single drum heat loads
224 /COM, Calculate the volumetric heat generation
225 /COM, (Assembly time is in years, FUEL is in seconds)
226 /INPUT,hangls1,dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLUME),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0.0,0.0,0.0,45.0,0.0,0.0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9, 10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5, 10, 15, 11,
274 AL, 8, 9, 16, 10,
275 AL, 7, 12, 13, 9,
276 AL, 6, 11, 14, 12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, 0.0, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, MO45, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, DO45, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM,      Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM,      *****
388 /COM,      Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM,      GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM,      Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM,      Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM,      Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM,      Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM,      Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM,      Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM,      *****
421 /COM,      Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM,      *****
425 /COM,      Set up drift wall radiation matrix
426 /COM,      (K's 32 - 34)
427 /COM,      1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM,      Define extrude lines (will not use)
432 /COM,      (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM,      Extrude drift 8 elements with smallest
436 /COM,      elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),      YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WSPC/2.0),
466 K,44, (0.0-XXX),      YYY, -1*(WSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WSPC/2.0),
485 K,49, (0.0-XXX),      YYY, (WSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,,83,84,1,
614 LSEL,A,LINE,,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,
637 VDRAG, 9,10,11,12,,,35,36,,,
638 VDRAG,13,14,,,,,35,36,,,
639 VDRAG,15,16,,,,,35,36,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,
646 VDRAG,13,14,,,,,40,41,42,,,
647 VDRAG,15,16,,,,,40,41,42,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0,0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0,0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0,0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM,      *****
735 /COM,      Define Some LOCAL Coordidinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM,      *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM,      *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrcangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obdrwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrcangap,
1140 SE,obrdrwgap,
1141 /COM, Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM, *****
1151 /COM, Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM, *****
1156 /COM, GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM, DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM, This section used only if both rad. and He conducti
1159 /COM, is used in the model.
1160 /COM, He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM, Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM, He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM, Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM, He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,6,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TME0,TM10
1342     TIME,TM,
1343     VSEL,S,MAT,,5,
1344     ESLV,S,
1345     BFE,ALL,HGEN,,(FUEL(TM)),
1346     VSEL,ALL
1347     ESEL,ALL
1348     ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359      *ENDDO
1360      /COM, NSUBST,15,30,10,ON
1361      /COM, Apply loads and solve for 1 to 9 years
1362      *DO,TM,TME1,TME9,TMI1
1363      TIME,TM,
1364      VSEL,S,MAT,,5,
1365      ESLV,S,
1366      BFE,ALL,HGEN,,(FUEL(TM)),
1367      VSEL,ALL
1368      ESEL,ALL
1369      ASEL,S,AREA,,17,26,1
1370      NSLA,S,1,
1371      DDELE,ALL,TEMP,
1372      ASEL,ALL,
1373      NSEL,ALL,
1374      ASEL,S,AREA,,17,26,1
1375      NSLA,S,1,
1376      D,ALL,TEMP,(DFSID(TM)),
1377      ASEL,ALL,
1378      NSEL,ALL,
1379      SOLVE
1380      *ENDDO
1381      /COM, NSUBST,20,40,15,ON
1382      /COM, Apply loads and solve for 10 to 90 years
1383      *DO,TM,TME10,TME90,TMI10
1384      TIME,TM,
1385      VSEL,S,MAT,,5,
1386      ESLV,S,
1387      BFE,ALL,HGEN,,(FUEL(TM)),
1388      VSEL,ALL
1389      ESEL,ALL
1390      ASEL,S,AREA,,17,26,1
1391      NSLA,S,1,
1392      DDELE,ALL,TEMP,
1393      ASEL,ALL,
1394      NSEL,ALL,
1395      ASEL,S,AREA,,17,26,1
1396      NSLA,S,1,
1397      D,ALL,TEMP,(DFSID(TM)),
1398      ASEL,ALL,
1399      NSEL,ALL,
1400      SOLVE
1401      *ENDDO
1402      /COM, NSUBST,30,60,20,ON
1403      /COM, Apply loads and solve for 100 to 1000 years
1404      *DO,TM,TME100,TME1000,TMI100
1405      TIME,TM,
1406      VSEL,S,MAT,,5,
1407      ESLV,S,
1408      BFE,ALL,HGEN,,(FUEL(TM)),
1409      VSEL,ALL
1410      ESEL,ALL
1411      ASEL,S,AREA,,17,26,1
1412      NSLA,S,1,
1413      DDELE,ALL,TEMP,
1414      ASEL,ALL,
1415      NSEL,ALL,
1416      ASEL,S,AREA,,17,26,1
1417      NSLA,S,1,
1418      D,ALL,TEMP,(DFSID(TM)),

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1419      ASEL,ALL,
1420      NSEL,ALL,
1421      SOLVE
1422 *ENDDO
1423 FINISH
1424 /COM, *****
1425 /COM,      Create element contour plots of solution results
1426 /COM,
1427 /COM,      Sort through solution results for time of max temp.
1428 /POST26,
1429 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1430 STORE,NEW,
1431 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1432 FINISH
1433 /POST1,
1434 /COM,      Create temperature contour plots of WP at peak
1435 /RESET,
1436 /TYPE,,HIDP,
1437 /VIEW,1,1,1,1,
1438 /DIST,1,3,0,
1439 /NUM, 1,
1440 /GLINE,,-1,
1441 /TRIAD,OFF,
1442 /PNUM,MAT, 1,
1443 VSEL,S,MAT,,1,5,4
1444 CSYS,31,
1445 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1446 VSEL,U,LOC,Y,-45.0,135.0,
1447 CSYS,0,
1448 ESLV,S
1449 VSEL,S,MAT,,1,5,4
1450 CSYS,32,
1451 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1452 VSEL,U,LOC,Y,-45.0,45.0,
1453 CSYS,0,
1454 ESLV,A
1455 VSEL,S,LOC,X,-100.0,0.0,
1456 ESLV,A
1457 ASEL,S,AREA,,17,26,1
1458 ASEL,R,LOC,X,-100.0,0.0,
1459 ESLA,A
1460 SET,NEAR,,,,TMTMAX,
1461 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1462 /SHOW,solupk,grph,0,8,
1463 /CONTOUR,1,128,AUTO,
1464 PLNSOL,TEMP,
1465 /COM,      Create temperature contour plots at 5, 10, 50, and 100 yrs
1466 SET,NEAR,,,,(TM_START+(5*TMI1)),
1467 /TITLE, DHLW WP at 5 years
1468 /SHOW,solu5,grph,0,8,
1469 /CONTOUR,1,128,USER,
1470 PLNSOL,TEMP,
1471 SET,NEAR,,,,TME10,
1472 /TITLE, DHLW WP at 10 years
1473 /SHOW,solu10,grph,0,8,
1474 /CONTOUR,1,128,USER,
1475 PLNSOL,TEMP,
1476 SET,NEAR,,,,TME50,
1477 /TITLE, DHLW WP at 50 years
1478 /SHOW,solu50,grph,0,8,
1479 /CONTOUR,1,128,USER,
1480 PLNSOL,TEMP,
1481 SET,NEAR,,,,TME100,
1482 /TITLE, DHLW WP at 100 years
1483 /SHOW,solu100,grph,0,8,
1484 /CONTOUR,1,128,USER,
1485 PLNSOL,TEMP,
1486 ESEL,ALL,
1487 FINISH
1488 /COM, *****

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1489 /COM,      Print time/temperature output at specific locations
1490 /COM,      Save profile from center to edge
1491 /COM,
1492 /COM,      Variable Legend: A01i000
1493 /COM,      t = structural stainless Canister near center line
1494 /COM,      c = center of Glass log
1495 /COM,      h = halfway between center and Canister
1496 /COM,      s = structural stainless Canister
1497 /COM,      i = inner barrier of DC
1498 /COM,      o = outer barrier of DC
1499 /COM,      ## = cartesian quadrant number of Canister
1500 /COM,      i = side of assembly toward center of WP
1501 /COM,      o = side of assembly toward edge of WP
1502 /COM,      045 = profile 45 deg down
1503 /COM,      135 = profile 45 deg up
1504 /POST26,
1505 NUMVAR,32,
1506 /COM,      *****
1507 /COM,      *Temperature Profile from center to lower right (45 deg.) z=2/3*
1508 /COM,      *****
1509 NSOL, 2,(NODE(TCO45,      (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1510 NSOL, 3,(NODE(TCI45,      (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1511 NSOL, 4,(NODE(HCI45,      (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1512 NSOL, 5,(NODE(CCO45,      (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1513 NSOL, 6,(NODE(HCO45,      (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1514 NSOL, 7,(NODE(SCI45,      (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1515 NSOL, 8,(NODE(SCO45,      (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1516 NSOL, 9,(NODE(MI45,       (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1517 NSOL,10,(NODE(MO45,       (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1518 NSOL,11,(NODE( DO45,      (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1519 PRVAR, 2, 3, 4, 5, 6, 7,
1520 PRVAR, 8, 9,10,11,
1521 /COM,      *****
1522 /COM,      * Temperature Profile from center to lower right (45 deg.) *
1523 /COM,      *****
1524 NSOL, 2,(NODE(      TCO45,      (-1.0*TCO45),0.0)),TEMP,,t04i045,
1525 NSOL, 3,(NODE(      TCI45,      (-1.0*TCI45),0.0)),TEMP,,t04o045,
1526 NSOL, 4,(NODE(      HCI45,      (-1.0*HCI45),0.0)),TEMP,,h04i045,
1527 NSOL, 5,(NODE(      CCO45,      (-1.0*CCO45),0.0)),TEMP,,c04i045,
1528 NSOL, 6,(NODE(      HCO45,      (-1.0*HCO45),0.0)),TEMP,,h04o045,
1529 NSOL, 7,(NODE(      SCI45,      (-1.0*SCI45),0.0)),TEMP,,s04i045,
1530 NSOL, 8,(NODE(      SCO45,      (-1.0*SCO45),0.0)),TEMP,,s04o045,
1531 NSOL, 9,(NODE(      MI45,       (-1.0*MI45),0.0)),TEMP,,i04i045,
1532 NSOL,10,(NODE(      MO45,       (-1.0*MO45),0.0)),TEMP,,i04o045,
1533 NSOL,11,(NODE(      DO45,       (-1.0*DO45),0.0)),TEMP,,o04o045,
1534 PRVAR, 2, 3, 4, 5, 6, 7,
1535 PRVAR, 8, 9,10,11,
1536 /COM,
1537 /COM,      *****
1538 /COM,      * Temperature Profile from center to upper right (135 deg.) *
1539 /COM,      *****
1540 NSOL, 2,(NODE(      TCO45,      TCO45,0.0)),TEMP,,t01i135,
1541 NSOL, 3,(NODE(      TCI45,      TCI45,0.0)),TEMP,,t01o135,
1542 NSOL, 4,(NODE(      HCI45,      HCI45,0.0)),TEMP,,h01i135,
1543 NSOL, 5,(NODE(      CCO45,      CCO45,0.0)),TEMP,,c01i135,
1544 NSOL, 6,(NODE(      HCO45,      HCO45,0.0)),TEMP,,h01o135,
1545 NSOL, 7,(NODE(      SCI45,      SCI45,0.0)),TEMP,,s01i135,
1546 NSOL, 8,(NODE(      SCO45,      SCO45,0.0)),TEMP,,s01o135,
1547 NSOL, 9,(NODE(      MI45,      MI45,0.0)),TEMP,,i01i135,
1548 NSOL,10,(NODE(      MO45,      MO45,0.0)),TEMP,,i01o135,
1549 NSOL,11,(NODE(      DO45,      DO45,0.0)),TEMP,,o01o135,
1550 PRVAR, 2, 3, 4, 5, 6, 7,
1551 PRVAR, 8, 9,10,11,
1552 /COM,
1553 /COM,      *****
1554 /COM,      * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1555 /COM,      *****
1556 NSOL, 2,(NODE(      TCO45,      (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1557 NSOL, 3,(NODE(      TCI45,      (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1558 NSOL, 4,(NODE(      HCI45,      (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,

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1559 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), (-1*BTPT4))), TEMP, ,cb4i045,
1560 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), (-1*BTPT4))), TEMP, ,hb4o045,
1561 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), (-1*BTPT4))), TEMP, ,sb4i045,
1562 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, ,sb4o045,
1563 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, ,ib4i045,
1564 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, ,ib4o045,
1565 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, ,ob4o045,
1566 PRVAR, 2, 3, 4, 5, 6, 7,
1567 PRVAR, 8, 9, 10, 11,
1568 /COM,
1569 /COM, *****
1570 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1571 /COM, *****
1572 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, ,t01i135,
1573 NSOL, 3, (NODE(      TCI45,      TCI45, (-1*BTPT4))), TEMP, ,t01o135,
1574 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, ,h01i135,
1575 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, ,c01i135,
1576 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, ,h01o135,
1577 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, ,s01i135,
1578 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, ,s01o135,
1579 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, ,i01i135,
1580 NSOL, 10, (NODE(      MO45,      MO45, (-1*BTPT4))), TEMP, ,i01o135,
1581 NSOL, 11, (NODE(      DO45,      DO45, (-1*BTPT4))), TEMP, ,o01o135,
1582 PRVAR, 2, 3, 4, 5, 6, 7,
1583 PRVAR, 8, 9, 10, 11,
1584 /COM,
1585 /COM, *****
1586 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top*
1587 /COM, *****
1588 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, ,tt4i045,
1589 NSOL, 3, (NODE(      TCI45,      (-1.0*TCI45), TPPT6)), TEMP, ,tt4o045,
1590 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, ,ht4i045,
1591 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, ,ct4i045,
1592 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, ,ht4o045,
1593 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, ,st4i045,
1594 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, ,st4o045,
1595 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, ,it4i045,
1596 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), TPPT6)), TEMP, ,it4o045,
1597 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), TPPT6)), TEMP, ,ot4o045,
1598 PRVAR, 2, 3, 4, 5, 6, 7,
1599 PRVAR, 8, 9, 10, 11,
1600 /COM,
1601 /COM, *****
1602 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1603 /COM, *****
1604 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, ,t01i135,
1605 NSOL, 3, (NODE(      TCI45,      TCI45, TPPT6)), TEMP, ,t01o135,
1606 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, ,h01i135,
1607 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, ,c01i135,
1608 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, ,h01o135,
1609 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, ,s01i135,
1610 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, ,s01o135,
1611 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, ,i01i135,
1612 NSOL, 10, (NODE(      MO45,      MO45, TPPT6)), TEMP, ,i01o135,
1613 NSOL, 11, (NODE(      DO45,      DO45, TPPT6)), TEMP, ,o01o135,
1614 PRVAR, 2, 3, 4, 5, 6, 7,
1615 PRVAR, 8, 9, 10, 11,
1616 /COM,
1617 /COM, *****
1618 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1619 /COM, *****
1620 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, ,ot1o135,
1621 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, ,ot1i135,
1622 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, ,it1o135,
1623 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, ,it1i135,
1624 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, ,st1o135,
1625 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, ,st1i135,
1626 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, ,ht1i135,
1627 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, ,gt1i135,
1628 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, ,c01i135,

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1629 NSOL,11,(NODE(      CC045,      CC045,      (-0.33*BTPT4))),TEMP,,gb1i135,
1630 NSOL,12,(NODE(      CC045,      CC045,      (-0.66*BTPT4))),TEMP,,gb1h135,
1631 NSOL,13,(NODE(      CC045,      CC045,      (-1.0*BTPT4))),TEMP,,sb1i135,
1632 NSOL,14,(NODE(      CC045,      CC045,      (-1.0*BTPT3))),TEMP,,sb1o135,
1633 NSOL,15,(NODE(      CC045,      CC045,      (-1.0*BTPT2))),TEMP,,ib1i135,
1634 NSOL,16,(NODE(      CC045,      CC045,      (-1.0*BTPT1))),TEMP,,ib1o135,
1635 NSOL,17,(NODE(      CC045,      CC045,      MIDPT)),TEMP,,ob1o135,
1636 PRVAR, 2, 3, 4, 5, 6, 7,
1637 PRVAR, 8, 9,10,11,12,13,
1638 PRVAR,14,15,16,17,
1639 /COM,
1640 /COM, *****
1641 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1642 /COM, *****
1643 NSOL, 2,(NODE(      CC045,(-1.0*CC045),      MIDPT)),TEMP,,ot4o045,
1644 NSOL, 3,(NODE(      CC045,(-1.0*CC045),      TPPT1)),TEMP,,ot4i045,
1645 NSOL, 4,(NODE(      CC045,(-1.0*CC045),      TPPT2)),TEMP,,it4o045,
1646 NSOL, 5,(NODE(      CC045,(-1.0*CC045),      TPPT3)),TEMP,,it4i045,
1647 NSOL, 6,(NODE(      CC045,(-1.0*CC045),      TPPT4)),TEMP,,st4o045,
1648 NSOL, 7,(NODE(      CC045,(-1.0*CC045),      TPPT5)),TEMP,,st4i045,
1649 NSOL, 8,(NODE(      CC045,(-1.0*CC045),      TPPT6)),TEMP,,ht4i045,
1650 NSOL, 9,(NODE(      CC045,(-1.0*CC045),      ( 0.5*TPPT6))),TEMP,,gt4i045,
1651 NSOL,10,(NODE(      CC045,(-1.0*CC045),      0.0)),TEMP,,c04i045,
1652 NSOL,11,(NODE(      CC045,(-1.0*CC045),      (-0.33*BTPT4))),TEMP,,gb4i045,
1653 NSOL,12,(NODE(      CC045,(-1.0*CC045),      (-0.66*BTPT4))),TEMP,,gb4h045,
1654 NSOL,13,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT4))),TEMP,,sb4i045,
1655 NSOL,14,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT3))),TEMP,,sb4o045,
1656 NSOL,15,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT2))),TEMP,,ib4i045,
1657 NSOL,16,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT1))),TEMP,,ib4o045,
1658 NSOL,17,(NODE(      CC045,(-1.0*CC045),      MIDPT)),TEMP,,ob4o045,
1659 PRVAR, 2, 3, 4, 5, 6, 7,
1660 PRVAR, 8, 9,10,11,12,13,
1661 PRVAR,14,15,16,17,
1662 /COM,
1663 /COM, *****
1664 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1665 /COM, *****
1666 NSOL, 2,(NODE(      TC045,      TC045,      MIDPT)),TEMP,,ot1oise,
1667 NSOL, 3,(NODE(      TC045,      TC045,      TPPT1)),TEMP,,ot1iise,
1668 NSOL, 4,(NODE(      TC045,      TC045,      TPPT2)),TEMP,,it1oise,
1669 NSOL, 5,(NODE(      TC045,      TC045,      TPPT3)),TEMP,,it1iise,
1670 NSOL, 6,(NODE(      TC045,      TC045,      TPPT4)),TEMP,,st1oise,
1671 NSOL, 7,(NODE(      TC045,      TC045,      TPPT5)),TEMP,,st1iise,
1672 NSOL, 8,(NODE(      TC045,      TC045,      TPPT6)),TEMP,,ht1iise,
1673 NSOL, 9,(NODE(      TC045,      TC045,      ( 0.5*TPPT6))),TEMP,,gt1iise,
1674 NSOL,10,(NODE(      TC045,      TC045,      0.0)),TEMP,,c01iise,
1675 NSOL,11,(NODE(      TC045,      TC045,      (-0.33*BTPT4))),TEMP,,gb1iise,
1676 NSOL,12,(NODE(      TC045,      TC045,      (-0.66*BTPT4))),TEMP,,gb1hise,
1677 NSOL,13,(NODE(      TC045,      TC045,      (-1.0*BTPT4))),TEMP,,sb1iise,
1678 NSOL,14,(NODE(      TC045,      TC045,      (-1.0*BTPT3))),TEMP,,sb1oise,
1679 NSOL,15,(NODE(      TC045,      TC045,      (-1.0*BTPT2))),TEMP,,ib1iise,
1680 NSOL,16,(NODE(      TC045,      TC045,      (-1.0*BTPT1))),TEMP,,ib1oise,
1681 NSOL,17,(NODE(      TC045,      TC045,      MIDPT)),TEMP,,ob1oise,
1682 PRVAR, 2, 3, 4, 5, 6, 7,
1683 PRVAR, 8, 9,10,11,12,13,
1684 PRVAR,14,15,16,17,
1685 /COM,
1686 /COM, *****
1687 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1688 /COM, *****
1689 NSOL, 2,(NODE(      SC045,      SC045,      MIDPT)),TEMP,,ot1oose,
1690 NSOL, 3,(NODE(      SC045,      SC045,      TPPT1)),TEMP,,ot1iise,
1691 NSOL, 4,(NODE(      SC045,      SC045,      TPPT2)),TEMP,,it1oose,
1692 NSOL, 5,(NODE(      SC045,      SC045,      TPPT3)),TEMP,,it1iise,
1693 NSOL, 6,(NODE(      SC045,      SC045,      TPPT4)),TEMP,,st1oose,
1694 NSOL, 7,(NODE(      SC045,      SC045,      TPPT5)),TEMP,,st1iise,
1695 NSOL, 8,(NODE(      SC045,      SC045,      TPPT6)),TEMP,,ht1iise,
1696 NSOL, 9,(NODE(      SC045,      SC045,      ( 0.5*TPPT6))),TEMP,,gt1iise,
1697 NSOL,10,(NODE(      SC045,      SC045,      0.0)),TEMP,,c01iise,
1698 NSOL,11,(NODE(      SC045,      SC045,      (-0.33*BTPT4))),TEMP,,gb1iise,

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1699 NSOL,12,(NODE( SC045, SC045, (-0.66*BTPT4))),TEMP,,gb1hose,
1700 NSOL,13,(NODE( SC045, SC045, (-1.0*BTPT4))),TEMP,,sb1iose,
1701 NSOL,14,(NODE( SC045, SC045, (-1.0*BTPT3))),TEMP,,sb1oose,
1702 NSOL,15,(NODE( SC045, SC045, (-1.0*BTPT2))),TEMP,,ib1iose,
1703 NSOL,16,(NODE( SC045, SC045, (-1.0*BTPT1))),TEMP,,ib1oose,
1704 NSOL,17,(NODE( SC045, SC045, MIDPT)),TEMP,,ob1oose,
1705 PRVAR, 2, 3, 4, 5, 6, 7,
1706 PRVAR, 8, 9,10,11,12,13,
1707 PRVAR,14,15,16,17,
1708 /COM,
1709 /COM, *****
1710 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1711 /COM, *****
1712 NSOL, 2,(NODE( TCO45,(-1.0*TCO45), MIDPT)),TEMP,,ot4iose,
1713 NSOL, 3,(NODE( TCO45,(-1.0*TCO45), TPPT1)),TEMP,,ot4iise,
1714 NSOL, 4,(NODE( TCO45,(-1.0*TCO45), TPPT2)),TEMP,,it4iose,
1715 NSOL, 5,(NODE( TCO45,(-1.0*TCO45), TPPT3)),TEMP,,it4iise,
1716 NSOL, 6,(NODE( TCO45,(-1.0*TCO45), TPPT4)),TEMP,,st4iose,
1717 NSOL, 7,(NODE( TCO45,(-1.0*TCO45), TPPT5)),TEMP,,st4iise,
1718 NSOL, 8,(NODE( TCO45,(-1.0*TCO45), TPPT6)),TEMP,,ht4iise,
1719 NSOL, 9,(NODE( TCO45,(-1.0*TCO45), ( 0.5*TPPT6))),TEMP,,gt4iise,
1720 NSOL,10,(NODE( TCO45,(-1.0*TCO45), 0.0)),TEMP,,c04iise,
1721 NSOL,11,(NODE( TCO45,(-1.0*TCO45), (-0.33*BTPT4))),TEMP,,gb4iise,
1722 NSOL,12,(NODE( TCO45,(-1.0*TCO45), (-0.66*BTPT4))),TEMP,,gb4hise,
1723 NSOL,13,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT4))),TEMP,,sb4iise,
1724 NSOL,14,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT3))),TEMP,,sb4iose,
1725 NSOL,15,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT2))),TEMP,,ib4iise,
1726 NSOL,16,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT1))),TEMP,,ib4iose,
1727 NSOL,17,(NODE( TCO45,(-1.0*TCO45), MIDPT)),TEMP,,ob4iose,
1728 PRVAR, 2, 3, 4, 5, 6, 7,
1729 PRVAR, 8, 9,10,11,12,13,
1730 PRVAR,14,15,16,17,
1731 /COM,
1732 /COM, *****
1733 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1734 /COM, *****
1735 NSOL, 2,(NODE( SC045,(-1.0*SC045), MIDPT)),TEMP,,ot4oose,
1736 NSOL, 3,(NODE( SC045,(-1.0*SC045), TPPT1)),TEMP,,ot4iose,
1737 NSOL, 4,(NODE( SC045,(-1.0*SC045), TPPT2)),TEMP,,it4oose,
1738 NSOL, 5,(NODE( SC045,(-1.0*SC045), TPPT3)),TEMP,,it4iose,
1739 NSOL, 6,(NODE( SC045,(-1.0*SC045), TPPT4)),TEMP,,st4oose,
1740 NSOL, 7,(NODE( SC045,(-1.0*SC045), TPPT5)),TEMP,,st4iose,
1741 NSOL, 8,(NODE( SC045,(-1.0*SC045), TPPT6)),TEMP,,ht4iose,
1742 NSOL, 9,(NODE( SC045,(-1.0*SC045), ( 0.5*TPPT6))),TEMP,,gt4iose,
1743 NSOL,10,(NODE( SC045,(-1.0*SC045), 0.0)),TEMP,,c04iose,
1744 NSOL,11,(NODE( SC045,(-1.0*SC045), (-0.33*BTPT4))),TEMP,,gb4iose,
1745 NSOL,12,(NODE( SC045,(-1.0*SC045), (-0.66*BTPT4))),TEMP,,gb4hose,
1746 NSOL,13,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT4))),TEMP,,sb4iose,
1747 NSOL,14,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT3))),TEMP,,sb4oose,
1748 NSOL,15,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT2))),TEMP,,ib4iose,
1749 NSOL,16,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT1))),TEMP,,ib4oose,
1750 NSOL,17,(NODE( SC045,(-1.0*SC045), MIDPT)),TEMP,,ob4oose,
1751 PRVAR, 2, 3, 4, 5, 6, 7,
1752 PRVAR, 8, 9,10,11,12,13,
1753 PRVAR,14,15,16,17,
1754 /COM,
1755 /COM, *****
1756 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1757 /COM, *****
1758 NSOL, 2,(NODE( DCORD,0.0, MIDPT)),TEMP,,otwoose,
1759 NSOL, 3,(NODE( DCORD,0.0, TPPT1)),TEMP,,otwiiose,
1760 NSOL, 4,(NODE( DCORD,0.0, TPPT2)),TEMP,,itwoose,
1761 NSOL, 5,(NODE( DCORD,0.0, TPPT3)),TEMP,,itwiiose,
1762 NSOL, 6,(NODE( DCORD,0.0, TPPT4)),TEMP,,stwoose,
1763 NSOL, 7,(NODE( DCORD,0.0, TPPT5)),TEMP,,stwiiose,
1764 NSOL, 8,(NODE( DCORD,0.0, TPPT6)),TEMP,,htwiiose,
1765 NSOL, 9,(NODE( DCORD,0.0, ( 0.5*TPPT6))),TEMP,,gtwiiose,
1766 NSOL,10,(NODE( DCORD,0.0, 0.0)),TEMP,,c0wiiose,
1767 NSOL,11,(NODE( DCORD,0.0, (-0.33*BTPT4))),TEMP,,gbwiiose,
1768 NSOL,12,(NODE( DCORD,0.0, (-0.66*BTPT4))),TEMP,,gbwoose,

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1769 NSOL,13,(NODE( DCORD,0.0, (-1.0*BTPT4))),TEMP,,sbwiose,
1770 NSOL,14,(NODE( DCORD,0.0, (-1.0*BTPT3))),TEMP,,sbwoose,
1771 NSOL,15,(NODE( DCORD,0.0, (-1.0*BTPT2))),TEMP,,ibwiose,
1772 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1773 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1774 PRVAR, 2, 3, 4, 5, 6, 7,
1775 PRVAR, 8, 9,10,11,12,13,
1776 PRVAR,14,15,16,17,
1777 FINISH
1778 /COM, *****
1779 /COM, End of batch input file
1780 /COM, *****
1781 SAVE,
1782 /EXIT,
1783 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP      /input,,inp,
ABBREVIATION= X3D      /show,3d,
ABBREVIATION= X11      /show,x11,
ABBREVIATION= VEC      /show,,1,

```

ABBREVIATION= RAS /show,,,0,
 ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

 ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

 *
 * File name: glsh21x2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 *
 * Material Property file: propsd1.dat *
 *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 *
 * SNF Heat Loads file: hangls1.dat *
 * Initial Heat Load: 871 W/canister *
 *
 * Surface Temp. file: c21x5a.parm *
 * 100 MTU/acre (24.7 kgU/m²) AML (High Thermal Loading) *
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 22.5 m *
 * WP c/c spacing = 16.165 m *
 *

 Increase the number of database pages from 16 (256) to 32 Mb
 DONT DO: /CONFIG,nvpag,512,
 Work space must also be increased (-m 87) For Radiation Matix

TITLE=
 DHLW Glass Form Waste Package

SI UNITS SPECIFIED
 LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT = AMPS

 Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE *** CP= .600 TIME= 17:27:44
Restore ANSYS parameters from file= c21x5a.parm.

/INPUT FILE= c21x5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TM11+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TM110+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TM1100+TM_START

TME1000=TM11000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WPSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WPSPC = 16.16500

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01
 PARAMETER IWALL = .2000000E-01
 PARAMETER DCORD = .8545000
 PARAMETER DCLEN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass hieght; hieght of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000

PARAMETER BTPT4 = 1.495000
 Top of WP
 PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)
 FUEL = volumetric heat production (W/m³) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TC045 = x coord. WP Center Line Outer Pour Can. at 45 de
 TC145 = x coord. WP Center Line Inner Pour Can. at 45 de
 HCI45 = x coord. WP Center Line side of center Glass at
 HCO45 = x coord. WP Edge side of center Glass at 45 deg.
 CC045 = x coord. Glass Center Line in Pour Can. at 45 de
 SC045 = x coord. WP Edge Outer Pour Can. at 45 deg.
 SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
 MI45 = x coord. DCIRD at 45 deg.
 MO45 = x coord. DCIRD+IWALL at 45 deg.
 DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TC045 = .1094244
 PARAMETER TC145 = .1161419
 PARAMETER HCI45 = .2205462
 PARAMETER HCO45 = .4293549
 PARAMETER CC045 = .3249505
 PARAMETER SC045 = .5404767
 PARAMETER SCI45 = .5337592
 PARAMETER MI45 = .5547253
 PARAMETER MO45 = .5688674
 PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 17:27:44 NOV 01, 1995 CP= 1.370
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **
** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSW2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **
** Emissivity EMIS **
** Conductivity: KXX (W/m/K) **
** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1

SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1
SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 21.11000 37.78000 65.56000
 93.33000 121.1100 148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 176.6700 204.4400 232.2200
 260.0000 287.7800 315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***
 SLOC= 13 343.3300 371.1100 398.8900
 426.6700 454.4400 482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***
 SLOC= 19 510.0000 537.7800 565.5600
 593.3300 621.1100 648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***
 SLOC= 25 676.6700 704.4400 732.2200
 760.0000 787.7800 815.5600

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 6
 SLOC= 1 13.33000 13.67000 14.19000 14.54000
 15.06000 15.58000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 12
 SLOC= 7 15.92000 16.44000 16.96000 17.31000
 17.83000 18.17000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 18
 SLOC= 13 18.52000 19.04000 19.38000 19.90000
 20.25000 20.77000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 24
 SLOC= 19 21.11000 21.46000 21.98000 22.33000
 22.67000 23.02000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 30
 SLOC= 25 23.54000 23.88000 24.23000 24.58000
 24.92000 25.27000

PROPERTY TABLE C MAT= 1 NUM. POINTS= 6
 SLOC= 1 481.6800 486.9200 498.0900 499.3800
 509.9800 520.2900

PROPERTY TABLE C MAT= 1 NUM. POINTS= 12
 SLOC= 7 521.0700 527.3800 536.9200 537.3400
 543.0200 543.3100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 18
 SLOC= 13 546.9100 552.1400 552.2600 557.2200
 557.2500 565.1100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 24
 SLOC= 19 565.0100 564.9100 572.3500 572.1400
 574.9200 574.6800

PROPERTY TABLE C MAT= 1 NUM. POINTS= 30
 SLOC= 25 581.6400 581.3000 583.8600 586.3600
 585.9600 588.3900

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 6
 SLOC= 1 40.84000 41.36000 41.88000 42.23000
 42.23000 42.23000

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 12
 SLOC= 7 42.06000 41.88000 41.36000 41.02000
 40.50000 39.98000

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 18	
SLOC= 13	39.29000	38.77000	38.08000	37.56000
	36.69000	36.17000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 24	
SLOC= 19	35.48000	34.61000	33.92000	33.23000
	32.36000	31.50000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 30	
SLOC= 25	30.29000	28.90000	27.35000	26.48000
	26.13000	26.13000		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 6	
SLOC= 1	428.7200	444.9500	460.9400	476.8700
	486.0800	495.6600		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 12	
SLOC= 7	506.0900	517.0700	525.6400	536.9900
	543.6300	550.6200		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 18	
SLOC= 13	562.2100	577.3200	589.1000	600.5700
	611.3500	629.0900		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 24	
SLOC= 19	645.3200	665.1200	682.0700	694.5200
	724.0700	761.9500		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 30	
SLOC= 25	806.3100	888.6000	1095.040	1638.780
	808.6800	736.9000		

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 6 ***
SLOC= 1	93.33000 121.1100 148.8900
	176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 12 ***
SLOC= 7	260.0000 287.7800 315.5600
	343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 18 ***
SLOC= 13	426.6700 454.4400 482.2200
	510.0000 537.7800 565.5600

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 24 ***
SLOC= 19	593.3300 621.1100 648.8900
	676.6700 704.4400 732.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 27 ***
SLOC= 25	760.0000 787.7800 815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 6	
SLOC= 1	12.29000	12.63000	13.15000	13.67000
	14.02000	14.54000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 12	
SLOC= 7	14.88000	15.40000	15.75000	16.10000
	16.61000	16.96000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 18	
SLOC= 13	17.31000	17.65000	18.00000	18.52000
	18.86000	19.21000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 24	
SLOC= 19	19.73000	20.08000	20.42000	20.94000

21.46000 21.98000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 27
 SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 93.33000 121.1100 148.8900
 176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 260.0000 287.7800 315.5600
 343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***
 SLOC= 13 426.6700 454.4400 482.2200
 510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6
 SLOC= 1 460.6900 477.4200 501.0200 504.6500
 498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12
 SLOC= 7 536.8800 559.8500 576.8300 576.2100
 581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17
 SLOC= 13 619.5800 636.7600 654.2000 678.2500
 696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***
 SLOC= 1 25.00000 50.00000 94.00000
 95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***
 SLOC= 5 105.0000 114.0000 115.0000
 155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***
 SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4
 SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8
 SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11
 SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, -10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -13.15000 6.850000 26.85000
 76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 226.8500 276.8500 326.8500

376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***
SLOC= 13 526.8500 626.8500 726.8500

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6
SLOC= 1 .1875000 .1750000 .1625000 .1422000
 .1219000 .1097000

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12
SLOC= 7 .9750000E-01 .9060000E-01 .8360000E-01 .7670000E-01
 .6970000E-01 .6620000E-01

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15
SLOC= 13 .6270000E-01 .5580000E-01 .4880000E-01

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6
SLOC= 1 .1370000 .1450000 .1520000 .1700000
 .1870000 .2040000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12
SLOC= 7 .2200000 .2360000 .2520000 .2640000
 .2780000 .2910000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15
SLOC= 13 .3040000 .3300000 .3540000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6
SLOC= 1 1.348000 1.254700 1.161400 .9950000
 .8711000 .7740000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12
SLOC= 7 .6964000 .6329000 .5804000 .5356000
 .4975000 .4643000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15
SLOC= 13 .4354000 .3868000 .3482000

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6
SLOC= 1 .2300000E-01 .2500000E-01 .2600000E-01 .3000000E-01
 .3400000E-01 .3700000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12
SLOC= 7 .4100000E-01 .4400000E-01 .4700000E-01 .5000000E-01
 .5200000E-01 .5500000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15
SLOC= 13 .5700000E-01 .6200000E-01 .6700000E-01

PROPERTY TABLE C MAT= 8 NUM. POINTS= 6
SLOC= 1 1006.200 1006.600 1007.000 1009.000
 1014.000 1021.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 12
SLOC= 7 1030.000 1040.000 1051.000 1063.000
 1075.000 1087.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 15
SLOC= 13 1099.000 1121.000 1141.000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6
SLOC= 1 1.303700 1.213500 1.123300 .9625000
 .8425000 .7485000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12
SLOC= 7 .6739000 .6124000 .5615000 .5214000
 .4812000 .4512000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15

SLOC= 13 .4211000 .3743000 .3368000

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6
SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
.3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
.5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
SLOC= 1 1041.800 1041.400 1041.000 1042.000
1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
SLOC= 7 1056.000 1065.000 1075.000 1086.500
1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
.2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
.3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 -73.15000 26.85000 126.8500
326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
SLOC= 1 413.0000 401.0000 393.0000 379.0000
366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
SLOC= 1 356.0000 385.0000 397.0000 417.0000
433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
SLOC= 1 23.00000 50.00000 100.0000
150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
SLOC= 1 182.5600 190.1700 199.2200 202.9100
203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
SLOC= 1 868.0000 903.0000 946.0000 976.0000
998.0000

** End of Material Property List **

Define new material 15 for low thermal loading
outer barrier of 70/30 Copper Nickel (C71500)
Density: DENS (kg/m³)
Emissivity: EMIS
Conductivity: KXX (W/m/K)
Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .000000E+00
Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
Calculate the volumetric heat generation
(Assembly time is in years, FUEL is in seconds)

/INPUT FILE= hanfls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **

** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **

** **

** Executable File Name: MATHCAD.EXE **

** Output File Name: hanflg1.dat **

** Execution Date: 04/17/95 **

** Start Age (years): 0.0 **

** Decay Period (years): 10000 **

** Enrichment (kg Pu): N.A. **

** Burnup (Mwd/MTHM): N.A. **

** Assembly Type: SR Pour Canis **

** Pu Fract. (kg Pu/KG HM):N.A. **

**
 ** ASSY(#,1) is the Pour Cainster heat in Watts.
 ** ASSY(#,0) is the time post emplacement in years.

PARAMETER ASSY(1,1) =	871.2000 860.1000	868.4000 857.4000	865.6000	862.9000
PARAMETER ASSY(7,1) =	854.8000 844.3000	852.1000 831.8000	849.5000	846.9000
PARAMETER ASSY(13,1) =	819.7000 776.4000	808.2000 766.7000	797.1000	786.6000
PARAMETER ASSY(19,1) =	757.4000 723.7000	748.4000 716.1000	739.9000	731.6000
PARAMETER ASSY(25,1) =	708.9000 682.5000	701.9000 631.9000	695.2000	688.7000
PARAMETER ASSY(31,1) =	596.7000 524.9000	571.3000 514.5000	552.1000	537.1000
PARAMETER ASSY(37,1) =	505.5000 476.4000	497.3000 470.2000	489.9000	483.0000
PARAMETER ASSY(43,1) =	464.3000 442.1000	458.5000 393.8000	452.9000	447.5000
PARAMETER ASSY(49,1) =	351.5000 225.4000	314.1000 202.2000	280.9000	251.5000
PARAMETER ASSY(55,1) =	181.6000 120.0000	163.4000 108.7000	147.2000	132.8000
PARAMETER ASSY(61,1) =	98.57000 68.25000	89.60000 32.95000	81.64000	74.55000
PARAMETER ASSY(67,1) =	21.19000 11.42000	16.60000 10.33000	14.26000	12.69000
PARAMETER ASSY(73,1) =	9.355000 6.318000	8.477000 5.731000	7.684000	6.967000
PARAMETER ASSY(79,1) =	5.199000 3.533000	4.719000 1.390000	4.283000	3.890000
PARAMETER ASSY(85,1) =	.5979000 .1284000	.3034000 .1181000	.1920000	.1478000
PARAMETER ASSY(91,1) =	.1111000 .9000000E-01	.1054000 .8500000E-01	.1002000	.9510000E-01
PARAMETER ASSY(97,1) =	.8000000E-01 .6000000E-01	.7500000E-01	.7000000E-01	.6500000E-01
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000

PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000
PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
INPUT MATRIX= ASSY(1,0)
INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
FUEL(1) = COPY ASSY(1)
SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
if use CSYS,0, the P. Cans are 2x2,
if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,0,45.0,0,0,0,0,

Construct geometry for a single SRP Pour Canister
(K's 1 - 10)

(L's 1 - 16)
(A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.= 1	KP1= 3	TAN1=	-.7071	-.7071	.0000
	KP2= 2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.= 2	KP1= 2	TAN1=	-.7071	.7071	.0000
	KP2= 6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.= 3	KP1= 4	TAN1=	-.7071	.7071	.0000
	KP2= 2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.= 4	KP1= 2	TAN1=	-.7071	-.7071	.0000
	KP2= 5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 5	KP1= 6	TAN1= -.7071
	KP2= 5	TAN2= -.7071
		.0000

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 6	KP1= 5	TAN1= .7071
	KP2= 4	TAN2= -.7071
		.0000

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 7	KP1= 4	TAN1= .7071
	KP2= 3	TAN2= .7071
		.0000

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 8	KP1= 3	TAN1= -.7071
	KP2= 6	TAN2= .7071
		.0000

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.= 9	KP1= 7	TAN1=	-.7071	-.7071	.0000
	KP2= 3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.= 10	KP1= 10	TAN1=	.7071	-.7071	.0000
	KP2= 6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.= 11	KP1= 9	TAN1=	.7071	.7071	.0000
	KP2= 5	TAN2=	-.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS 8 4
 LINE NO.= 12 KP1= 8 TAN1= -.7071 .7071 .0000
 KP2= 4 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 7 AND 8 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 13 KP1= 7 TAN1= .7071 -.7071 .0000
 KP2= 8 TAN2= .7071 .7071 .0000

ARC BETWEEN KEYPOINTS 8 AND 9 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 14 KP1= 8 TAN1= -.7071 -.7071 .0000
 KP2= 9 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 9 AND 10 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 15 KP1= 9 TAN1= -.7071 .7071 .0000
 KP2= 10 TAN2= -.7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 10 AND 7 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 16 KP1= 10 TAN1= .7071 .7071 .0000
 KP2= 7 TAN2= -.7071 .7071 .0000

DEFINE AREA BY LIST OF LINES
 LINE LIST = 2 4 5
 (TRAVERSED IN SAME DIRECTION AS LINE 2)

AREA NUMBER = 1

DEFINE AREA BY LIST OF LINES
 LINE LIST = 1 2 8
 (TRAVERSED IN SAME DIRECTION AS LINE 1)

AREA NUMBER = 2

DEFINE AREA BY LIST OF LINES
 LINE LIST = 1 3 7
 (TRAVERSED IN SAME DIRECTION AS LINE 1)

AREA NUMBER = 3

DEFINE AREA BY LIST OF LINES
 LINE LIST = 3 4 6
 (TRAVERSED IN SAME DIRECTION AS LINE 3)

AREA NUMBER = 4

DEFINE AREA BY LIST OF LINES
 LINE LIST = 5 10 15 11
 (TRAVERSED IN SAME DIRECTION AS LINE 5)

AREA NUMBER = 5

DEFINE AREA BY LIST OF LINES
 LINE LIST = 8 9 16 10
 (TRAVERSED IN SAME DIRECTION AS LINE 8)

AREA NUMBER = 6

DEFINE AREA BY LIST OF LINES
 LINE LIST = 7 12 13 9
 (TRAVERSED IN SAME DIRECTION AS LINE 7)

AREA NUMBER = 7

DEFINE AREA BY LIST OF LINES
 LINE LIST = 6 11 14 12
 (TRAVERSED IN SAME DIRECTION AS LINE 6)

AREA NUMBER = 8

Interior and WP, Next

(K's 11 - 19)

(L's 17 - 34)

(A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1= 1	TAN1=	-.7071	-.7071	.0000
	KP2= 7	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1= 10	TAN1=	-.9125	.4092	.0000
	KP2= 11	TAN2=	.9125	-.4092	.0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1= 9	TAN1=	-.7071	-.7071	.0000
	KP2= 12	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1= 8	TAN1=	.4092	-.9125	.0000
	KP2= 13	TAN2=	-.4092	.9125	.0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1= 1	TAN1=	.0000	-1.0000	.0000
	KP2= 13	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1= 1	TAN1=	-1.0000	.0000	.0000
	KP2= 11	TAN2=	1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS	11 AND	12	ORIENTATION KEYPOINT=	1
RADIUS=	.78450			
LINE NO.= 23	KP1= 11	TAN1=	.0000	-1.0000
	KP2= 12	TAN2=	-.7071	.7071

ARC BETWEEN KEYPOINTS	12 AND	13	ORIENTATION KEYPOINT=	1
RADIUS=	.78450			
LINE NO.= 24	KP1= 12	TAN1=	.7071	-.7071
	KP2= 13	TAN2=	-1.0000	.0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1= 11	TAN1=	-1.0000	.0000	.0000
	KP2= 14	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1= 12	TAN1=	-.7071	-.7071	.0000
	KP2= 15	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	16	13			
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LINE NO.= 27 KP1= 16 TAN1= .0000 1.0000 .0000
 KP2= 13 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
 RADIUS= .80450

LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
 KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
 RADIUS= .80450

LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
 KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17

LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
 KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18

LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
 KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16

LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
 KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
 RADIUS= .85450

LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
 KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
 RADIUS= .85450

LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
 KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES

LINE LIST = 22 18 16 17
 (TRAVERSED IN SAME DIRECTION AS LINE 22)

AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES

LINE LIST = 23 19 15 18
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES

LINE LIST = 24 20 14 19
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES

LINE LIST = 21 17 13 20
 (TRAVERSED IN SAME DIRECTION AS LINE 21)

AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES

LINE LIST = 23 25 28 26
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES

LINE LIST = 24 26 29 27
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas
glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.910 TIME= 17:27:46
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.930 TIME= 17:27:46
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.940 TIME= 17:27:46
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.000 TIME= 17:27:46
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.020 TIME= 17:27:46
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE ***

CP= 3.020 TIME= 17:27:46

Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***

92 93 94 95 96

NUMBER OF AREAS MESHED = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces

(K's 20 - 31)

(L's 35 - 46)

Bottom direction first

KEYPOINT 20 X,Y,Z= .000000E+00 .000000E+00 -1.49500 IN CSYS= 0
 KEYPOINT 21 X,Y,Z= .000000E+00 .000000E+00 -1.51000 IN CSYS= 0
 KEYPOINT 22 X,Y,Z= .000000E+00 .000000E+00 -1.53500 IN CSYS= 0
 KEYPOINT 23 X,Y,Z= .000000E+00 .000000E+00 -1.56000 IN CSYS= 0
 KEYPOINT 24 X,Y,Z= .000000E+00 .000000E+00 -1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 20
 LINE NO.= 35 KP1= 1 TAN1= .0000 .0000 1.0000
 KP2= 20 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 20 21
 LINE NO.= 36 KP1= 20 TAN1= .0000 .0000 1.0000
 KP2= 21 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 21 22
 LINE NO.= 37 KP1= 21 TAN1= .0000 .0000 1.0000
 KP2= 22 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 22 23
 LINE NO.= 38 KP1= 22 TAN1= .0000 .0000 1.0000
 KP2= 23 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 23 24
 LINE NO.= 39 KP1= 23 TAN1= .0000 .0000 1.0000
 KP2= 24 TAN2= .0000 .0000 -1.0000

Top direction Next

KEYPOINT 25 X,Y,Z= .000000E+00 .000000E+00 .659900 IN CSYS= 0

KEYPOINT 26 X,Y,Z= .000000E+00 .000000E+00 1.21460 IN CSYS= 0
 KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 8.08250 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -8.08250 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000
KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000
KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000
KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000
KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000
KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000
 KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

Back Point
 (K's 40 - 44)
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -8.08250 IN CSYS= 0

KEYPOINT 41 X,Y,Z= 2.50000 .183300 -8.08250 IN CSYS= 0

KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -8.08250 IN CSYS= 0

KEYPOINT 43 X,Y,Z= -2.50000 .183300 -8.08250 IN CSYS= 0

KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -8.08250 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000
Front Point

(K's 45 - 49)
(L's 59 - 63)

KEYPOINT	45	X,Y,Z=	1.73494	-1.61670	8.08250	IN CSYS= 0
KEYPOINT	46	X,Y,Z=	2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	47	X,Y,Z=	.000000E+00	2.68330	8.08250	IN CSYS= 0
KEYPOINT	48	X,Y,Z=	-2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	49	X,Y,Z=	-1.73494	-1.61670	8.08250	IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 59 KP1= 45 TAN1= -.7200 -.6940 .0000
KP2= 46 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 60 KP1= 46 TAN1= .0000 -1.0000 .0000
KP2= 47 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 61 KP1= 47 TAN1= 1.0000 .0000 .0000
KP2= 48 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 62 KP1= 48 TAN1= .0000 1.0000 .0000
KP2= 49 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 49 45
LINE NO.= 63 KP1= 49 TAN1= -1.0000 .0000 .0000
KP2= 45 TAN2= 1.0000 .0000 .0000
Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000
3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40
LINE NO.= 64 KP1= 35 TAN1= .0000 .0000 1.0000
KP2= 40 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 36 41
LINE NO.= 65 KP1= 36 TAN1= .0000 .0000 1.0000
KP2= 41 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66 KP1= 37 TAN1= .0000 .0000 1.0000
 KP2= 42 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(A's 17 - 26)

DEFINE AREA BY LIST OF LINES
LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.570 TIME= 17:27:47
Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES
LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.610 TIME= 17:27:47
Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES
LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.650 TIME= 17:27:47
Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES
LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.690 TIME= 17:27:47
Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES
LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 3.730 TIME= 17:27:47
Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES
LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 3.770 TIME= 17:27:47
Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES

LINE LIST = 61 72 51 71
(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 3.810 TIME= 17:27:47

Lines 61, 72, 51, and 71 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES

LINE LIST = 62 73 52 72
(TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.850 TIME= 17:27:47

Lines 62, 73, 52, and 72 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES

LINE LIST = 53 64 58 68
(TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES

LINE LIST = 63 69 53 73
(TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
MAXIMUM NODE NUMBER = 430
MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 481
MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
(K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50			
LINE NO.= 74	KP1= 27	TAN1=	-1.0000	.0000	.0000
	KP2= 50	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	27	51			
LINE NO.= 75	KP1= 27	TAN1=	.0000	-1.0000	.0000
	KP2= 51	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	50	52			
LINE NO.= 76	KP1= 50	TAN1=	-1.0000	.0000	.0000
	KP2= 52	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	51	53			
LINE NO.= 77	KP1= 51	TAN1=	.0000	-1.0000	.0000
	KP2= 53	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	52	54			
LINE NO.= 78	KP1= 52	TAN1=	-1.0000	.0000	.0000
	KP2= 54	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	53	55			
LINE NO.= 79	KP1= 53	TAN1=	.0000	-1.0000	.0000
	KP2= 55	TAN2=	.0000	1.0000	.0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS 50 AND 51 ORIENTATION KEYPOINT= 27
RADIUS= .78450

LINE NO.= 80 KP1= 50 TAN1= .0000 -1.0000 .0000
 KP2= 51 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
 RADIUS= .80450
 LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
 KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
 RADIUS= .85450
 LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
 KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 74 TO 75 STEP 1

2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 80 TO 82 STEP 1

5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 76 TO 79 STEP 1

4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 82 STEP 1

82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 55 STEP 1

55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
 (A's 27 - 29)

DEFINE AREA BY LIST OF LINES
 LINE LIST = 74 75 80
 (TRAVERSED IN SAME DIRECTION AS LINE 74)

AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
 LINE LIST = 80 76 81 77
 (TRAVERSED IN SAME DIRECTION AS LINE 80)

AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
 LINE LIST = 81 78 82 79
 (TRAVERSED IN SAME DIRECTION AS LINE 81)

AREA NUMBER = 29

 Construct geometry for WP Bottom end

(K's 56 - 61)

KEYPOINT	56	X,Y,Z=	.784500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	57	X,Y,Z=	.000000E+00	.784500	-1.51000	IN CSYS= 0
KEYPOINT	58	X,Y,Z=	.804500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	59	X,Y,Z=	.000000E+00	.804500	-1.51000	IN CSYS= 0
KEYPOINT	60	X,Y,Z=	.854500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	61	X,Y,Z=	.000000E+00	.854500	-1.51000	IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS		21	56			
LINE NO.=	83	KP1=	21	TAN1=	-1.0000	.0000 .0000
		KP2=	56	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS		21	57			
LINE NO.=	84	KP1=	21	TAN1=	.0000 -1.0000	.0000
		KP2=	57	TAN2=	.0000 1.0000	.0000
LINE CONNECTS KEYPOINTS		56	58			
LINE NO.=	85	KP1=	56	TAN1=	-1.0000	.0000 .0000
		KP2=	58	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS		57	59			
LINE NO.=	86	KP1=	57	TAN1=	.0000 -1.0000	.0000
		KP2=	59	TAN2=	.0000 1.0000	.0000
LINE CONNECTS KEYPOINTS		58	60			
LINE NO.=	87	KP1=	58	TAN1=	-1.0000	.0000 .0000
		KP2=	60	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS		59	61			
LINE NO.=	88	KP1=	59	TAN1=	.0000 -1.0000	.0000
		KP2=	61	TAN2=	.0000 1.0000	.0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS		56 AND	57	ORIENTATION KEYPOINT=	21
RADIUS=		.78450			
LINE NO.=	89	KP1=	56	TAN1=	.0000 -1.0000 .0000
		KP2=	57	TAN2=	-1.0000 .0000 .0000
ARC BETWEEN KEYPOINTS		58 AND	59	ORIENTATION KEYPOINT=	21
RADIUS=		.80450			
LINE NO.=	90	KP1=	58	TAN1=	.0000 -1.0000 .0000
		KP2=	59	TAN2=	-1.0000 .0000 .0000
ARC BETWEEN KEYPOINTS		60 AND	61	ORIENTATION KEYPOINT=	21
RADIUS=		.85450			
LINE NO.=	91	KP1=	60	TAN1=	.0000 -1.0000 .0000
		KP2=	61	TAN2=	-1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES

```

    TO NDIV = 8, SPACING RATIO = 1.000

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    85 TO      88 STEP      1

    4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
    TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      29 STEP      1

    29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      91 STEP      1

    91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT  FOR ITEM=KP   COMPONENT=
IN RANGE    1 TO      61 STEP      1

    61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
    (A's 30 - 32 )

DEFINE AREA BY LIST OF LINES
    LINE LIST = 83 84 89
    (TRAVERSED IN SAME DIRECTION AS LINE 83)

    AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
    LINE LIST = 89 85 90 86
    (TRAVERSED IN SAME DIRECTION AS LINE 89)

    AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
    LINE LIST = 90 87 91 88
    (TRAVERSED IN SAME DIRECTION AS LINE 90)

    AREA NUMBER = 32
        Mesh areas
            Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
    PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
    IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6
MAXIMUM NODE NUMBER = 675
MAXIMUM ELEMENT NUMBER = 928
*****
    Extrude 2-D WP Interior into 3-D Space
    (V's 1 - 32)
        Bottom WP Area

DRAG AREAS
    1, 2, 3, 4,
    ALONG LINES
    35, 36,

DRAG AREAS

```

5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
9, 10, 11, 12,
ALONG LINES
35, 36,

DRAG AREAS
13, 14,
ALONG LINES
35, 36,

DRAG AREAS
15, 16,
ALONG LINES
35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.740 TIME= 17:27:52
Unmeshed line 178 is merged into meshed line 83.
LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.740 TIME= 17:27:52
Unmeshed line 196 is merged into meshed line 84.
LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.740 TIME= 17:27:52
Unmeshed line 218 is merged into meshed line 85.
LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.740 TIME= 17:27:52
Unmeshed line 221 is merged into meshed line 86.

LINE 87 USED FOR LINE(S) 244

*** WARNING ***

CP= 8.750 TIME= 17:27:52

Unmeshed line 244 is merged into meshed line 87.

LINE 88 USED FOR LINE(S) 247

*** WARNING ***

CP= 8.750 TIME= 17:27:52

Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119
 LINE 95 USED FOR LINE(S) 118
 LINE 96 USED FOR LINE(S) 120
 LINE 99 USED FOR LINE(S) 127
 LINE 100 USED FOR LINE(S) 126
 LINE 102 USED FOR LINE(S) 132
 LINE 103 USED FOR LINE(S) 131
 LINE 104 USED FOR LINE(S) 136
 LINE 107 USED FOR LINE(S) 139
 LINE 108 USED FOR LINE(S) 138
 LINE 109 USED FOR LINE(S) 140
 LINE 112 USED FOR LINE(S) 147
 LINE 113 USED FOR LINE(S) 146
 LINE 115 USED FOR LINE(S) 152
 LINE 116 USED FOR LINE(S) 151
 LINE 117 USED FOR LINE(S) 156
 LINE 122 USED FOR LINE(S) 169
 LINE 123 USED FOR LINE(S) 170
 LINE 124 USED FOR LINE(S) 162
 LINE 128 USED FOR LINE(S) 163
 LINE 129 USED FOR LINE(S) 164
 LINE 133 USED FOR LINE(S) 177
 LINE 134 USED FOR LINE(S) 174
 LINE 137 USED FOR LINE(S) 175
 LINE 142 USED FOR LINE(S) 189
 LINE 143 USED FOR LINE(S) 190
 LINE 144 USED FOR LINE(S) 182
 LINE 148 USED FOR LINE(S) 183
 LINE 149 USED FOR LINE(S) 184
 LINE 153 USED FOR LINE(S) 197
 LINE 154 USED FOR LINE(S) 194
 LINE 157 USED FOR LINE(S) 195
 LINE 160 USED FOR LINE(S) 199
 LINE 166 USED FOR LINE(S) 198
 LINE 167 USED FOR LINE(S) 200
 LINE 171 USED FOR LINE(S) 206
 LINE 172 USED FOR LINE(S) 207
 LINE 180 USED FOR LINE(S) 212
 LINE 186 USED FOR LINE(S) 211
 LINE 187 USED FOR LINE(S) 213
 LINE 191 USED FOR LINE(S) 219
 LINE 192 USED FOR LINE(S) 220
 LINE 202 USED FOR LINE(S) 226
 LINE 203 USED FOR LINE(S) 224
 LINE 204 USED FOR LINE(S) 225
 LINE 209 USED FOR LINE(S) 233
 LINE 210 USED FOR LINE(S) 232
 LINE 215 USED FOR LINE(S) 239
 LINE 216 USED FOR LINE(S) 237
 LINE 217 USED FOR LINE(S) 238
 LINE 222 USED FOR LINE(S) 246
 LINE 223 USED FOR LINE(S) 245
 AREA 34 USED FOR AREA(S) 57
 AREA 38 USED FOR AREA(S) 62
 AREA 41 USED FOR AREA(S) 66
 AREA 43 USED FOR AREA(S) 70
 AREA 46 USED FOR AREA(S) 73
 AREA 50 USED FOR AREA(S) 78
 AREA 53 USED FOR AREA(S) 82
 AREA 55 USED FOR AREA(S) 86
 AREA 59 USED FOR AREA(S) 96
 AREA 63 USED FOR AREA(S) 91

AREA 67 USED FOR AREA(S) 103
 AREA 71 USED FOR AREA(S) 100
 AREA 75 USED FOR AREA(S) 112
 AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153
 (V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	25 USED FOR KEYPOINT(S)	131	
KEYPOINT	26 USED FOR KEYPOINT(S)	139	
KEYPOINT	27 USED FOR KEYPOINT(S)	147	
KEYPOINT	50 USED FOR KEYPOINT(S)	148	167
KEYPOINT	51 USED FOR KEYPOINT(S)	153	171
KEYPOINT	52 USED FOR KEYPOINT(S)	170	185
KEYPOINT	53 USED FOR KEYPOINT(S)	172	189
KEYPOINT	54 USED FOR KEYPOINT(S)	188	
KEYPOINT	55 USED FOR KEYPOINT(S)	190	
KEYPOINT	73 USED FOR KEYPOINT(S)	98	
KEYPOINT	76 USED FOR KEYPOINT(S)	99	
KEYPOINT	78 USED FOR KEYPOINT(S)	103	
KEYPOINT	80 USED FOR KEYPOINT(S)	105	
KEYPOINT	84 USED FOR KEYPOINT(S)	110	
KEYPOINT	86 USED FOR KEYPOINT(S)	111	
KEYPOINT	88 USED FOR KEYPOINT(S)	115	
KEYPOINT	90 USED FOR KEYPOINT(S)	117	
KEYPOINT	93 USED FOR KEYPOINT(S)	122	
KEYPOINT	95 USED FOR KEYPOINT(S)	123	
KEYPOINT	96 USED FOR KEYPOINT(S)	127	
KEYPOINT	97 USED FOR KEYPOINT(S)	129	
KEYPOINT	101 USED FOR KEYPOINT(S)	136	
KEYPOINT	102 USED FOR KEYPOINT(S)	133	
KEYPOINT	104 USED FOR KEYPOINT(S)	134	
KEYPOINT	108 USED FOR KEYPOINT(S)	138	
KEYPOINT	113 USED FOR KEYPOINT(S)	144	
KEYPOINT	114 USED FOR KEYPOINT(S)	141	

KEYPOINT 116 USED FOR KEYPOINT(S) 142
 KEYPOINT 120 USED FOR KEYPOINT(S) 146
 KEYPOINT 125 USED FOR KEYPOINT(S) 152
 KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 12.860 TIME= 17:27:56
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.860 TIME= 17:27:56
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.860 TIME= 17:27:56
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.860 TIME= 17:27:56
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.870 TIME= 17:27:56
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.870 TIME= 17:27:56
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282

LINE	200	USED	FOR	LINE(S)	287
LINE	213	USED	FOR	LINE(S)	300
LINE	218	USED	FOR	LINE(S)	301
LINE	219	USED	FOR	LINE(S)	293
LINE	225	USED	FOR	LINE(S)	294
LINE	226	USED	FOR	LINE(S)	295
LINE	238	USED	FOR	LINE(S)	308
LINE	239	USED	FOR	LINE(S)	305
LINE	246	USED	FOR	LINE(S)	306
LINE	253	USED	FOR	LINE(S)	320
LINE	254	USED	FOR	LINE(S)	321
LINE	255	USED	FOR	LINE(S)	313
LINE	259	USED	FOR	LINE(S)	314
LINE	260	USED	FOR	LINE(S)	315
LINE	264	USED	FOR	LINE(S)	328
LINE	265	USED	FOR	LINE(S)	325
LINE	268	USED	FOR	LINE(S)	326
LINE	273	USED	FOR	LINE(S)	340
LINE	274	USED	FOR	LINE(S)	341
LINE	275	USED	FOR	LINE(S)	333
LINE	279	USED	FOR	LINE(S)	334
LINE	280	USED	FOR	LINE(S)	335
LINE	284	USED	FOR	LINE(S)	348
LINE	285	USED	FOR	LINE(S)	345
LINE	288	USED	FOR	LINE(S)	346
LINE	291	USED	FOR	LINE(S)	350
LINE	297	USED	FOR	LINE(S)	349
LINE	298	USED	FOR	LINE(S)	351
LINE	302	USED	FOR	LINE(S)	357
LINE	303	USED	FOR	LINE(S)	358
LINE	311	USED	FOR	LINE(S)	363
LINE	317	USED	FOR	LINE(S)	362
LINE	318	USED	FOR	LINE(S)	364
LINE	322	USED	FOR	LINE(S)	370
LINE	323	USED	FOR	LINE(S)	371
LINE	331	USED	FOR	LINE(S)	376
LINE	337	USED	FOR	LINE(S)	375
LINE	338	USED	FOR	LINE(S)	377
LINE	342	USED	FOR	LINE(S)	383
LINE	343	USED	FOR	LINE(S)	384
LINE	353	USED	FOR	LINE(S)	390
LINE	354	USED	FOR	LINE(S)	388
LINE	355	USED	FOR	LINE(S)	389
LINE	360	USED	FOR	LINE(S)	397
LINE	361	USED	FOR	LINE(S)	396
LINE	366	USED	FOR	LINE(S)	403
LINE	367	USED	FOR	LINE(S)	401
LINE	368	USED	FOR	LINE(S)	402
LINE	373	USED	FOR	LINE(S)	410
LINE	374	USED	FOR	LINE(S)	409
LINE	379	USED	FOR	LINE(S)	416
LINE	380	USED	FOR	LINE(S)	414
LINE	381	USED	FOR	LINE(S)	415
LINE	386	USED	FOR	LINE(S)	423
LINE	387	USED	FOR	LINE(S)	422
AREA	62	USED	FOR	AREA(S)	169
AREA	78	USED	FOR	AREA(S)	174
AREA	91	USED	FOR	AREA(S)	178
AREA	100	USED	FOR	AREA(S)	182
AREA	112	USED	FOR	AREA(S)	185
AREA	126	USED	FOR	AREA(S)	190
AREA	139	USED	FOR	AREA(S)	194
AREA	148	USED	FOR	AREA(S)	198
AREA	158	USED	FOR	AREA(S)	201
AREA	162	USED	FOR	AREA(S)	206
AREA	165	USED	FOR	AREA(S)	210
AREA	167	USED	FOR	AREA(S)	214
AREA	171	USED	FOR	AREA(S)	224
AREA	175	USED	FOR	AREA(S)	219
AREA	179	USED	FOR	AREA(S)	231

AREA 183 USED FOR AREA(S) 228
 AREA 187 USED FOR AREA(S) 240
 AREA 191 USED FOR AREA(S) 235
 AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)

Bottom WP Area

DRAG AREAS
 30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310
 (V's 90 - 101)

Top WP Area

DRAG AREAS
 27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846

MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS
IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 960
MAXIMUM ELEMENT NUMBER = 1168
SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1017
MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.790 TIME= 17:28:01
Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.790 TIME= 17:28:01
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.830 TIME= 17:28:01
Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.830 TIME= 17:28:01
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.930 TIME= 17:28:02
Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.930 TIME= 17:28:02
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 18.030 TIME= 17:28:02
Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 18.030 TIME= 17:28:02
Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
MAXIMUM NODE NUMBER = 1081
MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1195
MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.560 TIME= 17:28:03
Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.560 TIME= 17:28:03
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.600 TIME= 17:28:03
Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.600 TIME= 17:28:03
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.680 TIME= 17:28:03
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.690 TIME= 17:28:03
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.770 TIME= 17:28:03
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.770 TIME= 17:28:03
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.920 TIME= 17:28:04
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.920 TIME= 17:28:04
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.950 TIME= 17:28:04
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.960 TIME= 17:28:04
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 20.060 TIME= 17:28:04
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.060 TIME= 17:28:04
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 20.160 TIME= 17:28:04
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.160 TIME= 17:28:04
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 20.790 TIME= 17:28:04
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.790 TIME= 17:28:04
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.840 TIME= 17:28:04
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.840 TIME= 17:28:04
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.970 TIME= 17:28:05
Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.970 TIME= 17:28:05
Worst aspect ratio is 49.8333333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.650 TIME= 17:28:05
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.650 TIME= 17:28:05
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.690 TIME= 17:28:05
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.690 TIME= 17:28:05
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.810 TIME= 17:28:05
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.810 TIME= 17:28:05
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.950 TIME= 17:28:06
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.950 TIME= 17:28:06
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.990 TIME= 17:28:06
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.990 TIME= 17:28:06
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 22.110 TIME= 17:28:06
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.110 TIME= 17:28:06
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888

Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2528

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1

He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
MAT, 7,

TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 29.060 TIME= 17:28:13
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.070 TIME= 17:28:13
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.070 TIME= 17:28:13
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.080 TIME= 17:28:13
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.080 TIME= 17:28:13
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.090 TIME= 17:28:13
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.090 TIME= 17:28:13
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.090 TIME= 17:28:13
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.110 TIME= 17:28:13
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.120 TIME= 17:28:13
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.120 TIME= 17:28:13
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.130 TIME= 17:28:13
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.150 TIME= 17:28:13
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.160 TIME= 17:28:13
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only
elements are deleted.

*** NOTE *** CP= 29.190 TIME= 17:28:13
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only

elements are deleted.

*** NOTE *** CP= 29.190 TIME= 17:28:13
Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373

NODE 557 USED FOR NODES 1507
 NODE 654 USED FOR NODES 1378
 NODE 549 USED FOR NODES 1506
 NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.640 TIME= 17:28:14
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

 Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
 MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 3488	USED FOR NODES	5848
NODE 4099	USED FOR NODES	6471
NODE 4100	USED FOR NODES	6472
NODE 4539	USED FOR NODES	6911
NODE 4540	USED FOR NODES	6912
NODE 4037	USED FOR NODES	6397
NODE 5238	USED FOR NODES	7610
NODE 5239	USED FOR NODES	7611
NODE 4011	USED FOR NODES	6363
NODE 4012	USED FOR NODES	6364
NODE 3446	USED FOR NODES	5782
NODE 4920	USED FOR NODES	7292
NODE 4656	USED FOR NODES	7030
NODE 4657	USED FOR NODES	7031
NODE 4974	USED FOR NODES	7346
NODE 4345	USED FOR NODES	6717
NODE 4346	USED FOR NODES	6718
NODE 3448	USED FOR NODES	5786
NODE 3449	USED FOR NODES	5787
NODE 3450	USED FOR NODES	5788
NODE 4658	USED FOR NODES	7032
NODE 3975	USED FOR NODES	6327
NODE 3976	USED FOR NODES	6328
NODE 4921	USED FOR NODES	7293
NODE 4975	USED FOR NODES	7347
NODE 4660	USED FOR NODES	7055
NODE 3453	USED FOR NODES	5801
NODE 3452	USED FOR NODES	5800
NODE 4102	USED FOR NODES	6488
NODE 4014	USED FOR NODES	6372
NODE 4923	USED FOR NODES	7309
NODE 3978	USED FOR NODES	6336
NODE 4348	USED FOR NODES	6734
NODE 4541	USED FOR NODES	6927
NODE 4013	USED FOR NODES	6371
NODE 5240	USED FOR NODES	7626
NODE 3447	USED FOR NODES	5798
NODE 4038	USED FOR NODES	6401
NODE 4976	USED FOR NODES	7362
NODE 4659	USED FOR NODES	7054
NODE 4347	USED FOR NODES	6733
NODE 3489	USED FOR NODES	5852
NODE 3451	USED FOR NODES	5799
NODE 3977	USED FOR NODES	6335
NODE 4977	USED FOR NODES	7363
NODE 4101	USED FOR NODES	6487
NODE 4922	USED FOR NODES	7308
NODE 4661	USED FOR NODES	7056
NODE 5241	USED FOR NODES	7627
NODE 4542	USED FOR NODES	6928
NODE 3350	USED FOR NODES	5672
NODE 4603	USED FOR NODES	6977
NODE 5195	USED FOR NODES	7567
NODE 3398	USED FOR NODES	5754
NODE 4064	USED FOR NODES	6436
NODE 4884	USED FOR NODES	7256

NODE	3947	USED FOR NODES	6303
NODE	4885	USED FOR NODES	7257
NODE	3347	USED FOR NODES	5667
NODE	3858	USED FOR NODES	6202
NODE	4503	USED FOR NODES	6875
NODE	4504	USED FOR NODES	6876
NODE	4063	USED FOR NODES	6435
NODE	4958	USED FOR NODES	7324
NODE	4966	USED FOR NODES	7325
NODE	3859	USED FOR NODES	6203
NODE	4602	USED FOR NODES	6976
NODE	4309	USED FOR NODES	6681
NODE	4310	USED FOR NODES	6682
NODE	3349	USED FOR NODES	5671
NODE	5194	USED FOR NODES	7566
NODE	3912	USED FOR NODES	6256
NODE	3913	USED FOR NODES	6257
NODE	3351	USED FOR NODES	5673
NODE	4604	USED FOR NODES	6978
NODE	3354	USED FOR NODES	5686
NODE	4606	USED FOR NODES	7001
NODE	3861	USED FOR NODES	6211
NODE	4312	USED FOR NODES	6698
NODE	4887	USED FOR NODES	7273
NODE	4066	USED FOR NODES	6452
NODE	3353	USED FOR NODES	5685
NODE	5197	USED FOR NODES	7584
NODE	5196	USED FOR NODES	7583
NODE	4505	USED FOR NODES	6891
NODE	3860	USED FOR NODES	6210
NODE	3948	USED FOR NODES	6307
NODE	4886	USED FOR NODES	7272
NODE	3399	USED FOR NODES	5758
NODE	4506	USED FOR NODES	6892
NODE	3348	USED FOR NODES	5683
NODE	4311	USED FOR NODES	6697
NODE	4605	USED FOR NODES	7000
NODE	4065	USED FOR NODES	6451
NODE	4607	USED FOR NODES	7002
NODE	3914	USED FOR NODES	6264
NODE	3352	USED FOR NODES	5684
NODE	5193	USED FOR NODES	7582
NODE	3915	USED FOR NODES	6265
NODE	4045	USED FOR NODES	6415
NODE	3943	USED FOR NODES	6297
NODE	4736	USED FOR NODES	7086
NODE	4737	USED FOR NODES	7087
NODE	4400	USED FOR NODES	6750
NODE	4575	USED FOR NODES	6946
NODE	4576	USED FOR NODES	6954
NODE	4577	USED FOR NODES	6955
NODE	4161	USED FOR NODES	6511
NODE	4399	USED FOR NODES	6749
NODE	4046	USED FOR NODES	6423
NODE	3331	USED FOR NODES	5639
NODE	3394	USED FOR NODES	5748
NODE	4162	USED FOR NODES	6512
NODE	3850	USED FOR NODES	6190
NODE	3335	USED FOR NODES	5647
NODE	3851	USED FOR NODES	6194
NODE	3336	USED FOR NODES	5651
NODE	5037	USED FOR NODES	7379
NODE	3337	USED FOR NODES	5652
NODE	3904	USED FOR NODES	6244
NODE	5045	USED FOR NODES	7387
NODE	5046	USED FOR NODES	7388
NODE	3905	USED FOR NODES	6248
NODE	5075	USED FOR NODES	7404
NODE	4752	USED FOR NODES	7085
NODE	4759	USED FOR NODES	7095

NODE	4184	USED	FOR	NODES	6520
NODE	4415	USED	FOR	NODES	6758
NODE	5068	USED	FOR	NODES	7396
NODE	4177	USED	FOR	NODES	6510
NODE	4422	USED	FOR	NODES	6766
NODE	5061	USED	FOR	NODES	7386
NODE	4766	USED	FOR	NODES	7103
NODE	4191	USED	FOR	NODES	6528
NODE	5069	USED	FOR	NODES	7395
NODE	4416	USED	FOR	NODES	6757
NODE	4753	USED	FOR	NODES	7084
NODE	4185	USED	FOR	NODES	6519
NODE	4178	USED	FOR	NODES	6509
NODE	4760	USED	FOR	NODES	7094
NODE	5062	USED	FOR	NODES	7385
NODE	4767	USED	FOR	NODES	7102
NODE	5076	USED	FOR	NODES	7403
NODE	4423	USED	FOR	NODES	6765
NODE	4192	USED	FOR	NODES	6527
NODE	4193	USED	FOR	NODES	6526
NODE	4768	USED	FOR	NODES	7101
NODE	4761	USED	FOR	NODES	7093
NODE	5070	USED	FOR	NODES	7394
NODE	4417	USED	FOR	NODES	6756
NODE	4186	USED	FOR	NODES	6518
NODE	5063	USED	FOR	NODES	7384
NODE	4179	USED	FOR	NODES	6508
NODE	4754	USED	FOR	NODES	7083
NODE	5077	USED	FOR	NODES	7402
NODE	4424	USED	FOR	NODES	6764
NODE	5078	USED	FOR	NODES	7401
NODE	4755	USED	FOR	NODES	7082
NODE	4180	USED	FOR	NODES	6507
NODE	4187	USED	FOR	NODES	6517
NODE	4194	USED	FOR	NODES	6525
NODE	4418	USED	FOR	NODES	6755
NODE	4762	USED	FOR	NODES	7092
NODE	5064	USED	FOR	NODES	7383
NODE	4425	USED	FOR	NODES	6763
NODE	4769	USED	FOR	NODES	7100
NODE	5071	USED	FOR	NODES	7393
NODE	4756	USED	FOR	NODES	7081
NODE	4763	USED	FOR	NODES	7091
NODE	5065	USED	FOR	NODES	7382
NODE	5072	USED	FOR	NODES	7392
NODE	4181	USED	FOR	NODES	6506
NODE	4188	USED	FOR	NODES	6516
NODE	4419	USED	FOR	NODES	6754
NODE	5079	USED	FOR	NODES	7400
NODE	4770	USED	FOR	NODES	7099
NODE	4195	USED	FOR	NODES	6524
NODE	4426	USED	FOR	NODES	6762
NODE	4189	USED	FOR	NODES	6515
NODE	4764	USED	FOR	NODES	7090
NODE	4757	USED	FOR	NODES	7080
NODE	4420	USED	FOR	NODES	6753
NODE	4182	USED	FOR	NODES	6505
NODE	5073	USED	FOR	NODES	7391
NODE	5066	USED	FOR	NODES	7381
NODE	5080	USED	FOR	NODES	7399
NODE	4196	USED	FOR	NODES	6523
NODE	4771	USED	FOR	NODES	7098
NODE	4427	USED	FOR	NODES	6761
NODE	4421	USED	FOR	NODES	6752
NODE	4758	USED	FOR	NODES	7079
NODE	4190	USED	FOR	NODES	6514
NODE	5074	USED	FOR	NODES	7390
NODE	5067	USED	FOR	NODES	7380
NODE	4197	USED	FOR	NODES	6522
NODE	4765	USED	FOR	NODES	7089

NODE	5081	USED FOR NODES	7398
NODE	4183	USED FOR NODES	6504
NODE	4772	USED FOR NODES	7097
NODE	4428	USED FOR NODES	6760
NODE	6379	USED FOR NODES	8731
NODE	7342	USED FOR NODES	9714
NODE	7343	USED FOR NODES	9715
NODE	6468	USED FOR NODES	8840
NODE	6908	USED FOR NODES	9280
NODE	6343	USED FOR NODES	8695
NODE	6344	USED FOR NODES	8696
NODE	6380	USED FOR NODES	8732
NODE	5817	USED FOR NODES	8155
NODE	6467	USED FOR NODES	8839
NODE	5814	USED FOR NODES	8150
NODE	5818	USED FOR NODES	8156
NODE	5816	USED FOR NODES	8154
NODE	6713	USED FOR NODES	9085
NODE	6714	USED FOR NODES	9086
NODE	7024	USED FOR NODES	9398
NODE	5856	USED FOR NODES	8216
NODE	7606	USED FOR NODES	9978
NODE	7607	USED FOR NODES	9979
NODE	6907	USED FOR NODES	9279
NODE	6405	USED FOR NODES	8765
NODE	7025	USED FOR NODES	9399
NODE	7026	USED FOR NODES	9400
NODE	7288	USED FOR NODES	9660
NODE	7289	USED FOR NODES	9661
NODE	5821	USED FOR NODES	8169
NODE	5820	USED FOR NODES	8168
NODE	7028	USED FOR NODES	9423
NODE	6470	USED FOR NODES	8856
NODE	6346	USED FOR NODES	8704
NODE	6382	USED FOR NODES	8740
NODE	6716	USED FOR NODES	9102
NODE	7291	USED FOR NODES	9677
NODE	7608	USED FOR NODES	9994
NODE	6715	USED FOR NODES	9101
NODE	6909	USED FOR NODES	9295
NODE	5819	USED FOR NODES	8167
NODE	7290	USED FOR NODES	9676
NODE	5857	USED FOR NODES	8220
NODE	6469	USED FOR NODES	8855
NODE	6381	USED FOR NODES	8739
NODE	6406	USED FOR NODES	8769
NODE	7344	USED FOR NODES	9730
NODE	6345	USED FOR NODES	8703
NODE	7027	USED FOR NODES	9422
NODE	5815	USED FOR NODES	8166
NODE	7345	USED FOR NODES	9731
NODE	7029	USED FOR NODES	9424
NODE	7609	USED FOR NODES	9995
NODE	6910	USED FOR NODES	9296
NODE	5718	USED FOR NODES	8040
NODE	6971	USED FOR NODES	9345
NODE	6677	USED FOR NODES	9049
NODE	7252	USED FOR NODES	9624
NODE	5719	USED FOR NODES	8041
NODE	6678	USED FOR NODES	9050
NODE	6970	USED FOR NODES	9344
NODE	7334	USED FOR NODES	9693
NODE	6281	USED FOR NODES	8625
NODE	6972	USED FOR NODES	9346
NODE	7253	USED FOR NODES	9625
NODE	7562	USED FOR NODES	9934
NODE	5715	USED FOR NODES	8035
NODE	5766	USED FOR NODES	8122
NODE	6315	USED FOR NODES	8671
NODE	6432	USED FOR NODES	8804

NODE	6226	USED	FOR	NODES	8570
NODE	6227	USED	FOR	NODES	8571
NODE	6871	USED	FOR	NODES	9243
NODE	7326	USED	FOR	NODES	9692
NODE	6872	USED	FOR	NODES	9244
NODE	7563	USED	FOR	NODES	9935
NODE	6431	USED	FOR	NODES	8803
NODE	5717	USED	FOR	NODES	8039
NODE	6280	USED	FOR	NODES	8624
NODE	6974	USED	FOR	NODES	9369
NODE	5722	USED	FOR	NODES	8054
NODE	5720	USED	FOR	NODES	8052
NODE	7565	USED	FOR	NODES	9952
NODE	6679	USED	FOR	NODES	9065
NODE	6282	USED	FOR	NODES	8632
NODE	7564	USED	FOR	NODES	9951
NODE	7254	USED	FOR	NODES	9640
NODE	6873	USED	FOR	NODES	9259
NODE	6973	USED	FOR	NODES	9368
NODE	6433	USED	FOR	NODES	8819
NODE	6316	USED	FOR	NODES	8675
NODE	6434	USED	FOR	NODES	8820
NODE	6229	USED	FOR	NODES	8579
NODE	5767	USED	FOR	NODES	8126
NODE	6228	USED	FOR	NODES	8578
NODE	6874	USED	FOR	NODES	9260
NODE	7561	USED	FOR	NODES	9950
NODE	5721	USED	FOR	NODES	8053
NODE	6975	USED	FOR	NODES	9370
NODE	7255	USED	FOR	NODES	9641
NODE	5716	USED	FOR	NODES	8051
NODE	6680	USED	FOR	NODES	9066
NODE	6283	USED	FOR	NODES	8633
NODE	5762	USED	FOR	NODES	8116
NODE	6413	USED	FOR	NODES	8783
NODE	6530	USED	FOR	NODES	8880
NODE	6944	USED	FOR	NODES	9322
NODE	7104	USED	FOR	NODES	9454
NODE	5704	USED	FOR	NODES	8019
NODE	6945	USED	FOR	NODES	9323
NODE	7105	USED	FOR	NODES	9455
NODE	6272	USED	FOR	NODES	8612
NODE	5699	USED	FOR	NODES	8007
NODE	5703	USED	FOR	NODES	8015
NODE	6529	USED	FOR	NODES	8879
NODE	6414	USED	FOR	NODES	8791
NODE	7405	USED	FOR	NODES	9747
NODE	7414	USED	FOR	NODES	9756
NODE	6311	USED	FOR	NODES	8665
NODE	6767	USED	FOR	NODES	9117
NODE	6768	USED	FOR	NODES	9118
NODE	5705	USED	FOR	NODES	8020
NODE	7413	USED	FOR	NODES	9755
NODE	6943	USED	FOR	NODES	9314
NODE	6273	USED	FOR	NODES	8616
NODE	6218	USED	FOR	NODES	8558
NODE	6219	USED	FOR	NODES	8562
NODE	6783	USED	FOR	NODES	9126
NODE	6545	USED	FOR	NODES	8878
NODE	7443	USED	FOR	NODES	9772
NODE	7429	USED	FOR	NODES	9754
NODE	6552	USED	FOR	NODES	8888
NODE	7127	USED	FOR	NODES	9463
NODE	6790	USED	FOR	NODES	9134
NODE	7120	USED	FOR	NODES	9453
NODE	7436	USED	FOR	NODES	9764
NODE	7134	USED	FOR	NODES	9471
NODE	6559	USED	FOR	NODES	8896
NODE	7430	USED	FOR	NODES	9753
NODE	7121	USED	FOR	NODES	9452

NODE	7128	USED FOR NODES	9462
NODE	6546	USED FOR NODES	8877
NODE	6553	USED FOR NODES	8887
NODE	7437	USED FOR NODES	9763
NODE	6784	USED FOR NODES	9125
NODE	7444	USED FOR NODES	9771
NODE	6560	USED FOR NODES	8895
NODE	7135	USED FOR NODES	9470
NODE	6791	USED FOR NODES	9133
NODE	6554	USED FOR NODES	8886
NODE	7122	USED FOR NODES	9451
NODE	7438	USED FOR NODES	9762
NODE	6561	USED FOR NODES	8894
NODE	6785	USED FOR NODES	9124
NODE	7129	USED FOR NODES	9461
NODE	7431	USED FOR NODES	9752
NODE	7136	USED FOR NODES	9469
NODE	6547	USED FOR NODES	8876
NODE	7445	USED FOR NODES	9770
NODE	6792	USED FOR NODES	9132
NODE	6555	USED FOR NODES	8885
NODE	6793	USED FOR NODES	9131
NODE	7123	USED FOR NODES	9450
NODE	7432	USED FOR NODES	9751
NODE	6562	USED FOR NODES	8893
NODE	6548	USED FOR NODES	8875
NODE	7446	USED FOR NODES	9769
NODE	7137	USED FOR NODES	9468
NODE	7439	USED FOR NODES	9761
NODE	6786	USED FOR NODES	9123
NODE	7130	USED FOR NODES	9460
NODE	2109	USED FOR NODES	3419
NODE	2166	USED FOR NODES	3959
NODE	2498	USED FOR NODES	4662
NODE	2268	USED FOR NODES	4349
NODE	2499	USED FOR NODES	4663
NODE	2607	USED FOR NODES	4979
NODE	2110	USED FOR NODES	3420
NODE	2870	USED FOR NODES	5242
NODE	2871	USED FOR NODES	5243
NODE	2552	USED FOR NODES	4924
NODE	2167	USED FOR NODES	3960
NODE	2269	USED FOR NODES	4350
NODE	2232	USED FOR NODES	4103
NODE	2500	USED FOR NODES	4664
NODE	2553	USED FOR NODES	4925
NODE	2462	USED FOR NODES	4543
NODE	2463	USED FOR NODES	4544
NODE	2233	USED FOR NODES	4104
NODE	2202	USED FOR NODES	3995
NODE	2203	USED FOR NODES	3996
NODE	2108	USED FOR NODES	3418
NODE	2606	USED FOR NODES	4978
NODE	2609	USED FOR NODES	4995
NODE	2501	USED FOR NODES	4686
NODE	2234	USED FOR NODES	4119
NODE	2872	USED FOR NODES	5258
NODE	2168	USED FOR NODES	3967
NODE	2204	USED FOR NODES	4003
NODE	2270	USED FOR NODES	4365
NODE	2113	USED FOR NODES	3433
NODE	2554	USED FOR NODES	4940
NODE	2503	USED FOR NODES	4688
NODE	2608	USED FOR NODES	4994
NODE	2502	USED FOR NODES	4687
NODE	2464	USED FOR NODES	4559
NODE	2111	USED FOR NODES	3431
NODE	2271	USED FOR NODES	4366
NODE	2555	USED FOR NODES	4941
NODE	2873	USED FOR NODES	5259

NODE	2235	USED	FOR	NODES	4120
NODE	2465	USED	FOR	NODES	4560
NODE	2205	USED	FOR	NODES	4004
NODE	2112	USED	FOR	NODES	3432
NODE	2169	USED	FOR	NODES	3968
NODE	1815	USED	FOR	NODES	4609
NODE	1816	USED	FOR	NODES	4610
NODE	2427	USED	FOR	NODES	4508
NODE	1542	USED	FOR	NODES	4068
NODE	2042	USED	FOR	NODES	4888
NODE	2826	USED	FOR	NODES	5198
NODE	2827	USED	FOR	NODES	5199
NODE	1432	USED	FOR	NODES	3834
NODE	1433	USED	FOR	NODES	3835
NODE	2590	USED	FOR	NODES	4956
NODE	1751	USED	FOR	NODES	4313
NODE	1349	USED	FOR	NODES	3303
NODE	2043	USED	FOR	NODES	4889
NODE	2598	USED	FOR	NODES	4957
NODE	1350	USED	FOR	NODES	3304
NODE	1351	USED	FOR	NODES	3305
NODE	1814	USED	FOR	NODES	4608
NODE	1752	USED	FOR	NODES	4314
NODE	1487	USED	FOR	NODES	3889
NODE	1541	USED	FOR	NODES	4067
NODE	1486	USED	FOR	NODES	3888
NODE	2426	USED	FOR	NODES	4507
NODE	1353	USED	FOR	NODES	3317
NODE	1435	USED	FOR	NODES	3843
NODE	1817	USED	FOR	NODES	4632
NODE	1489	USED	FOR	NODES	3897
NODE	2044	USED	FOR	NODES	4904
NODE	1488	USED	FOR	NODES	3896
NODE	2828	USED	FOR	NODES	5215
NODE	1818	USED	FOR	NODES	4633
NODE	1819	USED	FOR	NODES	4634
NODE	1434	USED	FOR	NODES	3842
NODE	1543	USED	FOR	NODES	4083
NODE	1354	USED	FOR	NODES	3318
NODE	1544	USED	FOR	NODES	4084
NODE	2825	USED	FOR	NODES	5214
NODE	1352	USED	FOR	NODES	3316
NODE	2428	USED	FOR	NODES	4523
NODE	2429	USED	FOR	NODES	4524
NODE	1753	USED	FOR	NODES	4329
NODE	2045	USED	FOR	NODES	4905
NODE	1754	USED	FOR	NODES	4330
NODE	2829	USED	FOR	NODES	5216
NODE	2677	USED	FOR	NODES	5019
NODE	1424	USED	FOR	NODES	3822
NODE	1523	USED	FOR	NODES	4047
NODE	1524	USED	FOR	NODES	4055
NODE	1425	USED	FOR	NODES	3826
NODE	2678	USED	FOR	NODES	5020
NODE	1337	USED	FOR	NODES	3279
NODE	2322	USED	FOR	NODES	4381
NODE	2323	USED	FOR	NODES	4382
NODE	1339	USED	FOR	NODES	3284
NODE	1603	USED	FOR	NODES	4143
NODE	1478	USED	FOR	NODES	3876
NODE	1479	USED	FOR	NODES	3880
NODE	1787	USED	FOR	NODES	4578
NODE	1894	USED	FOR	NODES	4718
NODE	1788	USED	FOR	NODES	4586
NODE	1338	USED	FOR	NODES	3283
NODE	1604	USED	FOR	NODES	4144
NODE	1789	USED	FOR	NODES	4587
NODE	2669	USED	FOR	NODES	5011
NODE	1895	USED	FOR	NODES	4719
NODE	2707	USED	FOR	NODES	5036

NODE	2345	USED	FOR	NODES	4398
NODE	1917	USED	FOR	NODES	4727
NODE	1633	USED	FOR	NODES	4160
NODE	1924	USED	FOR	NODES	4735
NODE	2338	USED	FOR	NODES	4390
NODE	1626	USED	FOR	NODES	4152
NODE	1910	USED	FOR	NODES	4717
NODE	1619	USED	FOR	NODES	4142
NODE	2693	USED	FOR	NODES	5018
NODE	2700	USED	FOR	NODES	5028
NODE	7433	USED	FOR	NODES	9750
NODE	6549	USED	FOR	NODES	8874
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NODE	6787	USED	FOR	NODES	9122
NODE	6556	USED	FOR	NODES	8884
NODE	7131	USED	FOR	NODES	9459
NODE	7440	USED	FOR	NODES	9760
NODE	6794	USED	FOR	NODES	9130
NODE	6563	USED	FOR	NODES	8892
NODE	7447	USED	FOR	NODES	9768
NODE	7138	USED	FOR	NODES	9467
NODE	2346	USED	FOR	NODES	4397
NODE	2708	USED	FOR	NODES	5035
NODE	1918	USED	FOR	NODES	4726
NODE	1634	USED	FOR	NODES	4159
NODE	1925	USED	FOR	NODES	4734
NODE	2701	USED	FOR	NODES	5027
NODE	2339	USED	FOR	NODES	4389
NODE	1620	USED	FOR	NODES	4141
NODE	1627	USED	FOR	NODES	4151
NODE	1911	USED	FOR	NODES	4716
NODE	2694	USED	FOR	NODES	5017
NODE	2347	USED	FOR	NODES	4396
NODE	2709	USED	FOR	NODES	5034
NODE	1635	USED	FOR	NODES	4158
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NODE	2702	USED	FOR	NODES	5026
NODE	2695	USED	FOR	NODES	5016
NODE	1926	USED	FOR	NODES	4733
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NODE	1628	USED	FOR	NODES	4150
NODE	2340	USED	FOR	NODES	4388
NODE	1919	USED	FOR	NODES	4725
NODE	6557	USED	FOR	NODES	8883
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NODE	7125	USED	FOR	NODES	9448
NODE	7132	USED	FOR	NODES	9458
NODE	6795	USED	FOR	NODES	9129
NODE	7434	USED	FOR	NODES	9749
NODE	6550	USED	FOR	NODES	8873
NODE	6564	USED	FOR	NODES	8891
NODE	7448	USED	FOR	NODES	9767
NODE	6788	USED	FOR	NODES	9121
NODE	7139	USED	FOR	NODES	9466
NODE	2696	USED	FOR	NODES	5015
NODE	2703	USED	FOR	NODES	5025
NODE	1913	USED	FOR	NODES	4714
NODE	1622	USED	FOR	NODES	4139
NODE	1920	USED	FOR	NODES	4724
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NODE	1629	USED	FOR	NODES	4149
NODE	2348	USED	FOR	NODES	4395
NODE	2710	USED	FOR	NODES	5033
NODE	1927	USED	FOR	NODES	4732
NODE	1636	USED	FOR	NODES	4157
NODE	2349	USED	FOR	NODES	4394
NODE	2711	USED	FOR	NODES	5032
NODE	1921	USED	FOR	NODES	4723
NODE	1914	USED	FOR	NODES	4713
NODE	2342	USED	FOR	NODES	4386

NODE 1637	USED FOR NODES	4156		
NODE 1928	USED FOR NODES	4731		
NODE 1623	USED FOR NODES	4138		
NODE 2704	USED FOR NODES	5024		
NODE 1630	USED FOR NODES	4148		
NODE 2697	USED FOR NODES	5014		
NODE 6551	USED FOR NODES	8872		
NODE 7126	USED FOR NODES	9447		
NODE 7133	USED FOR NODES	9457		
NODE 6796	USED FOR NODES	9128		
NODE 7435	USED FOR NODES	9748		
NODE 6789	USED FOR NODES	9120		
NODE 7442	USED FOR NODES	9758		
NODE 6558	USED FOR NODES	8882		
NODE 7140	USED FOR NODES	9465		
NODE 6565	USED FOR NODES	8890		
NODE 7449	USED FOR NODES	9766		
NODE 1929	USED FOR NODES	4730		
NODE 1638	USED FOR NODES	4155		
NODE 1624	USED FOR NODES	4137		
NODE 2698	USED FOR NODES	5013		
NODE 1922	USED FOR NODES	4722		
NODE 1915	USED FOR NODES	4712		
NODE 2705	USED FOR NODES	5023		
NODE 2343	USED FOR NODES	4385		
NODE 1631	USED FOR NODES	4147		
NODE 2350	USED FOR NODES	4393		
NODE 2712	USED FOR NODES	5031		
NODE 2344	USED FOR NODES	4384		
NODE 1632	USED FOR NODES	4146		
NODE 1923	USED FOR NODES	4721		
NODE 1625	USED FOR NODES	4136		
NODE 1916	USED FOR NODES	4711		
NODE 2706	USED FOR NODES	5022		
NODE 2699	USED FOR NODES	5012		
NODE 1639	USED FOR NODES	4154		
NODE 2713	USED FOR NODES	5030		
NODE 1930	USED FOR NODES	4729		
NODE 2351	USED FOR NODES	4392		
NODE 1868	USED FOR NODES	4710	7078	9446
NODE 1595	USED FOR NODES	4153	6521	8889
NODE 2653	USED FOR NODES	5021	7389	9757
NODE 117	USED FOR NODES	3315		
NODE 2314	USED FOR NODES	4391	6759	9127
NODE 1878	USED FOR NODES	4720	7088	9456
NODE 1886	USED FOR NODES	4728	7096	9464
NODE 116	USED FOR NODES	3299		
NODE 659	USED FOR NODES	3484		
NODE 588	USED FOR NODES	3380		
NODE 2306	USED FOR NODES	4383	6751	9119
NODE 2642	USED FOR NODES	5010	7378	9746
NODE 2661	USED FOR NODES	5029	7397	9765
NODE 491	USED FOR NODES	3929		
NODE 134	USED FOR NODES	3414		
NODE 1577	USED FOR NODES	4135	6503	8871
NODE 1587	USED FOR NODES	4145	6513	8881
NODE 543	USED FOR NODES	3935		
NODE 658	USED FOR NODES	3480		
NODE 135	USED FOR NODES	3430		
NODE 561	USED FOR NODES	4029		
NODE 544	USED FOR NODES	3939		
NODE 562	USED FOR NODES	4033		
NODE 640	USED FOR NODES	3386		
NODE 92	USED FOR NODES	3271		
NODE 641	USED FOR NODES	3390		
NODE 2654	USED FOR NODES	9810		
NODE 2644	USED FOR NODES	9803		
NODE 2315	USED FOR NODES	9164		
NODE 1588	USED FOR NODES	8926		
NODE 1578	USED FOR NODES	8919		

NODE	1887	USED	FOR	NODES	9508
NODE	1879	USED	FOR	NODES	9501
NODE	2662	USED	FOR	NODES	9817
NODE	1869	USED	FOR	NODES	9494
NODE	2307	USED	FOR	NODES	9157
NODE	1596	USED	FOR	NODES	8933
NODE	2316	USED	FOR	NODES	9163
NODE	1579	USED	FOR	NODES	8918
NODE	1880	USED	FOR	NODES	9500
NODE	2663	USED	FOR	NODES	9816
NODE	1888	USED	FOR	NODES	9507
NODE	1597	USED	FOR	NODES	8932
NODE	2655	USED	FOR	NODES	9809
NODE	1870	USED	FOR	NODES	9493
NODE	1589	USED	FOR	NODES	8925
NODE	2308	USED	FOR	NODES	9156
NODE	2645	USED	FOR	NODES	9802
NODE	2664	USED	FOR	NODES	9815
NODE	2646	USED	FOR	NODES	9801
NODE	1590	USED	FOR	NODES	8924
NODE	2309	USED	FOR	NODES	9155
NODE	1881	USED	FOR	NODES	9499
NODE	1889	USED	FOR	NODES	9506
NODE	2317	USED	FOR	NODES	9162
NODE	2656	USED	FOR	NODES	9808
NODE	1580	USED	FOR	NODES	8917
NODE	1598	USED	FOR	NODES	8931
NODE	1871	USED	FOR	NODES	9492
NODE	2657	USED	FOR	NODES	9807
NODE	2665	USED	FOR	NODES	9814
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NODE	1591	USED	FOR	NODES	8923
NODE	1581	USED	FOR	NODES	8916
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NODE	1882	USED	FOR	NODES	9498
NODE	1599	USED	FOR	NODES	8930
NODE	1890	USED	FOR	NODES	9505
NODE	2310	USED	FOR	NODES	9154
NODE	2647	USED	FOR	NODES	9800
NODE	2319	USED	FOR	NODES	9160
NODE	2666	USED	FOR	NODES	9813
NODE	2311	USED	FOR	NODES	9153
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NODE	1883	USED	FOR	NODES	9497
NODE	1592	USED	FOR	NODES	8922
NODE	2658	USED	FOR	NODES	9806
NODE	1873	USED	FOR	NODES	9490
NODE	1600	USED	FOR	NODES	8929
NODE	1891	USED	FOR	NODES	9504
NODE	2667	USED	FOR	NODES	9812
NODE	1884	USED	FOR	NODES	9496
NODE	2649	USED	FOR	NODES	9798
NODE	2312	USED	FOR	NODES	9152
NODE	2320	USED	FOR	NODES	9159
NODE	1892	USED	FOR	NODES	9503
NODE	1601	USED	FOR	NODES	8928
NODE	1593	USED	FOR	NODES	8921
NODE	1583	USED	FOR	NODES	8914
NODE	2659	USED	FOR	NODES	9805
NODE	1874	USED	FOR	NODES	9489
NODE	1893	USED	FOR	NODES	9502
NODE	1602	USED	FOR	NODES	8927
NODE	2668	USED	FOR	NODES	9811
NODE	2313	USED	FOR	NODES	9151
NODE	1885	USED	FOR	NODES	9495
NODE	1584	USED	FOR	NODES	8913
NODE	1875	USED	FOR	NODES	9488
NODE	1594	USED	FOR	NODES	8920
NODE	2321	USED	FOR	NODES	9158

NODE	2650	USED	FOR	NODES	9797
NODE	2660	USED	FOR	NODES	9804
NODE	1295	USED	FOR	NODES	8071
NODE	1450	USED	FOR	NODES	8640
NODE	1454	USED	FOR	NODES	8641
NODE	1400	USED	FOR	NODES	8587
NODE	1396	USED	FOR	NODES	8586
NODE	1586	USED	FOR	NODES	8898
NODE	1299	USED	FOR	NODES	8072
NODE	1877	USED	FOR	NODES	9473
NODE	1300	USED	FOR	NODES	8073
NODE	483	USED	FOR	NODES	8679
NODE	2651	USED	FOR	NODES	9781
NODE	1876	USED	FOR	NODES	9472
NODE	2643	USED	FOR	NODES	9773
NODE	580	USED	FOR	NODES	8130
NODE	1525	USED	FOR	NODES	8781
NODE	2652	USED	FOR	NODES	9782
NODE	75	USED	FOR	NODES	8067
NODE	1790	USED	FOR	NODES	9311
NODE	1798	USED	FOR	NODES	9312
NODE	1799	USED	FOR	NODES	9313
NODE	2304	USED	FOR	NODES	9135
NODE	1533	USED	FOR	NODES	8782
NODE	2305	USED	FOR	NODES	9136
NODE	1585	USED	FOR	NODES	8897
NODE	1471	USED	FOR	NODES	8651
NODE	1562	USED	FOR	NODES	8802
NODE	1772	USED	FOR	NODES	9048
NODE	1846	USED	FOR	NODES	9343
NODE	1417	USED	FOR	NODES	8597
NODE	1845	USED	FOR	NODES	9342
NODE	2063	USED	FOR	NODES	9623
NODE	2847	USED	FOR	NODES	9932
NODE	650	USED	FOR	NODES	8135
NODE	1416	USED	FOR	NODES	8596
NODE	553	USED	FOR	NODES	8684
NODE	1771	USED	FOR	NODES	9047
NODE	112	USED	FOR	NODES	8084
NODE	1470	USED	FOR	NODES	8650
NODE	1325	USED	FOR	NODES	8088
NODE	2446	USED	FOR	NODES	9241
NODE	2062	USED	FOR	NODES	9622
NODE	2846	USED	FOR	NODES	9929
NODE	2848	USED	FOR	NODES	9933
NODE	1844	USED	FOR	NODES	9341
NODE	2447	USED	FOR	NODES	9242
NODE	1561	USED	FOR	NODES	8801
NODE	1326	USED	FOR	NODES	8089
NODE	1327	USED	FOR	NODES	8090
NODE	1545	USED	FOR	NODES	8799
NODE	545	USED	FOR	NODES	8683
NODE	1546	USED	FOR	NODES	8800
NODE	642	USED	FOR	NODES	8134
NODE	1313	USED	FOR	NODES	8085
NODE	2046	USED	FOR	NODES	9620
NODE	2047	USED	FOR	NODES	9621
NODE	1408	USED	FOR	NODES	8594
NODE	1409	USED	FOR	NODES	8595
NODE	1462	USED	FOR	NODES	8648
NODE	108	USED	FOR	NODES	8083
NODE	1463	USED	FOR	NODES	8649
NODE	2430	USED	FOR	NODES	9239
NODE	2588	USED	FOR	NODES	9694
NODE	2431	USED	FOR	NODES	9240
NODE	2830	USED	FOR	NODES	9930
NODE	1315	USED	FOR	NODES	8087
NODE	1756	USED	FOR	NODES	9046
NODE	1820	USED	FOR	NODES	9338
NODE	1822	USED	FOR	NODES	9340

NODE 2831 USED FOR NODES 9931
 NODE 1755 USED FOR NODES 9045
 NODE 2589 USED FOR NODES 9702
 NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING *** CP= 63.450 TIME= 17:28:48
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 1 USED FOR KEYPOINT(S) 209 372 535
 KEYPOINT 11 USED FOR KEYPOINT(S) 541
 KEYPOINT 13 USED FOR KEYPOINT(S) 210
 KEYPOINT 14 USED FOR KEYPOINT(S) 551
 KEYPOINT 16 USED FOR KEYPOINT(S) 223
 KEYPOINT 17 USED FOR KEYPOINT(S) 560
 KEYPOINT 19 USED FOR KEYPOINT(S) 232
 KEYPOINT 20 USED FOR KEYPOINT(S) 212 375 538

KEYPOINT	21	USED FOR KEYPOINT(S)	218	381	544
KEYPOINT	22	USED FOR KEYPOINT(S)	297	460	623
KEYPOINT	23	USED FOR KEYPOINT(S)	304	467	630
KEYPOINT	24	USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25	USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26	USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27	USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28	USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29	USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30	USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31	USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50	USED FOR KEYPOINT(S)	603		
KEYPOINT	51	USED FOR KEYPOINT(S)	274		
KEYPOINT	52	USED FOR KEYPOINT(S)	612		
KEYPOINT	53	USED FOR KEYPOINT(S)	285		
KEYPOINT	54	USED FOR KEYPOINT(S)	621		
KEYPOINT	55	USED FOR KEYPOINT(S)	294		
KEYPOINT	56	USED FOR KEYPOINT(S)	546		
KEYPOINT	57	USED FOR KEYPOINT(S)	217		
KEYPOINT	58	USED FOR KEYPOINT(S)	555		
KEYPOINT	59	USED FOR KEYPOINT(S)	228		
KEYPOINT	60	USED FOR KEYPOINT(S)	564		
KEYPOINT	61	USED FOR KEYPOINT(S)	237		
KEYPOINT	89	USED FOR KEYPOINT(S)	542		
KEYPOINT	94	USED FOR KEYPOINT(S)	211		
KEYPOINT	99	USED FOR KEYPOINT(S)	624		
KEYPOINT	103	USED FOR KEYPOINT(S)	296		
KEYPOINT	105	USED FOR KEYPOINT(S)	300		
KEYPOINT	107	USED FOR KEYPOINT(S)	552		
KEYPOINT	109	USED FOR KEYPOINT(S)	224		
KEYPOINT	110	USED FOR KEYPOINT(S)	625		
KEYPOINT	111	USED FOR KEYPOINT(S)	302		
KEYPOINT	115	USED FOR KEYPOINT(S)	627		
KEYPOINT	117	USED FOR KEYPOINT(S)	645		
KEYPOINT	119	USED FOR KEYPOINT(S)	561		
KEYPOINT	121	USED FOR KEYPOINT(S)	233		
KEYPOINT	122	USED FOR KEYPOINT(S)	631		
KEYPOINT	123	USED FOR KEYPOINT(S)	303		
KEYPOINT	127	USED FOR KEYPOINT(S)	307		
KEYPOINT	129	USED FOR KEYPOINT(S)	632		
KEYPOINT	131	USED FOR KEYPOINT(S)	309		
KEYPOINT	132	USED FOR KEYPOINT(S)	595		
KEYPOINT	133	USED FOR KEYPOINT(S)	634		
KEYPOINT	134	USED FOR KEYPOINT(S)	317		
KEYPOINT	136	USED FOR KEYPOINT(S)	638		
KEYPOINT	137	USED FOR KEYPOINT(S)	266		
KEYPOINT	138	USED FOR KEYPOINT(S)	310		
KEYPOINT	139	USED FOR KEYPOINT(S)	314		
KEYPOINT	140	USED FOR KEYPOINT(S)	599		
KEYPOINT	141	USED FOR KEYPOINT(S)	639		
KEYPOINT	142	USED FOR KEYPOINT(S)	316		
KEYPOINT	144	USED FOR KEYPOINT(S)	641		
KEYPOINT	145	USED FOR KEYPOINT(S)	270		
KEYPOINT	146	USED FOR KEYPOINT(S)	321		
KEYPOINT	147	USED FOR KEYPOINT(S)	646		
KEYPOINT	148	USED FOR KEYPOINT(S)	323		
KEYPOINT	149	USED FOR KEYPOINT(S)	648		
KEYPOINT	152	USED FOR KEYPOINT(S)	652		
KEYPOINT	153	USED FOR KEYPOINT(S)	324		
KEYPOINT	154	USED FOR KEYPOINT(S)	328		
KEYPOINT	155	USED FOR KEYPOINT(S)	653		
KEYPOINT	156	USED FOR KEYPOINT(S)	330		
KEYPOINT	158	USED FOR KEYPOINT(S)	606		
KEYPOINT	159	USED FOR KEYPOINT(S)	655		
KEYPOINT	160	USED FOR KEYPOINT(S)	279		
KEYPOINT	162	USED FOR KEYPOINT(S)	659		
KEYPOINT	164	USED FOR KEYPOINT(S)	609		
KEYPOINT	165	USED FOR KEYPOINT(S)	331		
KEYPOINT	166	USED FOR KEYPOINT(S)	282		
KEYPOINT	167	USED FOR KEYPOINT(S)	335		

KEYPOINT	168	USED	FOR	KEYPOINT(S)	660
KEYPOINT	170	USED	FOR	KEYPOINT(S)	337
KEYPOINT	171	USED	FOR	KEYPOINT(S)	662
KEYPOINT	173	USED	FOR	KEYPOINT(S)	666
KEYPOINT	174	USED	FOR	KEYPOINT(S)	338
KEYPOINT	176	USED	FOR	KEYPOINT(S)	615
KEYPOINT	177	USED	FOR	KEYPOINT(S)	342
KEYPOINT	178	USED	FOR	KEYPOINT(S)	288
KEYPOINT	179	USED	FOR	KEYPOINT(S)	667
KEYPOINT	180	USED	FOR	KEYPOINT(S)	344
KEYPOINT	182	USED	FOR	KEYPOINT(S)	618
KEYPOINT	183	USED	FOR	KEYPOINT(S)	669
KEYPOINT	184	USED	FOR	KEYPOINT(S)	291
KEYPOINT	215	USED	FOR	KEYPOINT(S)	373
KEYPOINT	216	USED	FOR	KEYPOINT(S)	374
KEYPOINT	220	USED	FOR	KEYPOINT(S)	380
KEYPOINT	225	USED	FOR	KEYPOINT(S)	386
KEYPOINT	226	USED	FOR	KEYPOINT(S)	387
KEYPOINT	229	USED	FOR	KEYPOINT(S)	391
KEYPOINT	234	USED	FOR	KEYPOINT(S)	395
KEYPOINT	235	USED	FOR	KEYPOINT(S)	396
KEYPOINT	238	USED	FOR	KEYPOINT(S)	400
KEYPOINT	269	USED	FOR	KEYPOINT(S)	429
KEYPOINT	273	USED	FOR	KEYPOINT(S)	433
KEYPOINT	277	USED	FOR	KEYPOINT(S)	437
KEYPOINT	280	USED	FOR	KEYPOINT(S)	442
KEYPOINT	283	USED	FOR	KEYPOINT(S)	445
KEYPOINT	286	USED	FOR	KEYPOINT(S)	448
KEYPOINT	289	USED	FOR	KEYPOINT(S)	451
KEYPOINT	292	USED	FOR	KEYPOINT(S)	454
KEYPOINT	295	USED	FOR	KEYPOINT(S)	457
KEYPOINT	298	USED	FOR	KEYPOINT(S)	459
KEYPOINT	299	USED	FOR	KEYPOINT(S)	463
KEYPOINT	301	USED	FOR	KEYPOINT(S)	465
KEYPOINT	305	USED	FOR	KEYPOINT(S)	466
KEYPOINT	306	USED	FOR	KEYPOINT(S)	470
KEYPOINT	308	USED	FOR	KEYPOINT(S)	472
KEYPOINT	312	USED	FOR	KEYPOINT(S)	473
KEYPOINT	313	USED	FOR	KEYPOINT(S)	477
KEYPOINT	315	USED	FOR	KEYPOINT(S)	479
KEYPOINT	319	USED	FOR	KEYPOINT(S)	480
KEYPOINT	320	USED	FOR	KEYPOINT(S)	484
KEYPOINT	322	USED	FOR	KEYPOINT(S)	486
KEYPOINT	326	USED	FOR	KEYPOINT(S)	487
KEYPOINT	327	USED	FOR	KEYPOINT(S)	491
KEYPOINT	329	USED	FOR	KEYPOINT(S)	493
KEYPOINT	333	USED	FOR	KEYPOINT(S)	494
KEYPOINT	334	USED	FOR	KEYPOINT(S)	498
KEYPOINT	336	USED	FOR	KEYPOINT(S)	500
KEYPOINT	340	USED	FOR	KEYPOINT(S)	501
KEYPOINT	341	USED	FOR	KEYPOINT(S)	505
KEYPOINT	343	USED	FOR	KEYPOINT(S)	507
KEYPOINT	378	USED	FOR	KEYPOINT(S)	536
KEYPOINT	379	USED	FOR	KEYPOINT(S)	537
KEYPOINT	383	USED	FOR	KEYPOINT(S)	543
KEYPOINT	388	USED	FOR	KEYPOINT(S)	549
KEYPOINT	389	USED	FOR	KEYPOINT(S)	550
KEYPOINT	392	USED	FOR	KEYPOINT(S)	554
KEYPOINT	397	USED	FOR	KEYPOINT(S)	558
KEYPOINT	398	USED	FOR	KEYPOINT(S)	559
KEYPOINT	401	USED	FOR	KEYPOINT(S)	563
KEYPOINT	432	USED	FOR	KEYPOINT(S)	592
KEYPOINT	436	USED	FOR	KEYPOINT(S)	596
KEYPOINT	440	USED	FOR	KEYPOINT(S)	600
KEYPOINT	443	USED	FOR	KEYPOINT(S)	605
KEYPOINT	446	USED	FOR	KEYPOINT(S)	608
KEYPOINT	449	USED	FOR	KEYPOINT(S)	611
KEYPOINT	452	USED	FOR	KEYPOINT(S)	614
KEYPOINT	455	USED	FOR	KEYPOINT(S)	617
KEYPOINT	458	USED	FOR	KEYPOINT(S)	620

KEYPOINT	461	USED	FOR	KEYPOINT(S)	622
KEYPOINT	462	USED	FOR	KEYPOINT(S)	626
KEYPOINT	464	USED	FOR	KEYPOINT(S)	628
KEYPOINT	468	USED	FOR	KEYPOINT(S)	629
KEYPOINT	469	USED	FOR	KEYPOINT(S)	633
KEYPOINT	471	USED	FOR	KEYPOINT(S)	635
KEYPOINT	475	USED	FOR	KEYPOINT(S)	636
KEYPOINT	476	USED	FOR	KEYPOINT(S)	640
KEYPOINT	478	USED	FOR	KEYPOINT(S)	642
KEYPOINT	482	USED	FOR	KEYPOINT(S)	643
KEYPOINT	483	USED	FOR	KEYPOINT(S)	647
KEYPOINT	485	USED	FOR	KEYPOINT(S)	649
KEYPOINT	489	USED	FOR	KEYPOINT(S)	650
KEYPOINT	490	USED	FOR	KEYPOINT(S)	654
KEYPOINT	492	USED	FOR	KEYPOINT(S)	656
KEYPOINT	496	USED	FOR	KEYPOINT(S)	657
KEYPOINT	497	USED	FOR	KEYPOINT(S)	661
KEYPOINT	499	USED	FOR	KEYPOINT(S)	663
KEYPOINT	503	USED	FOR	KEYPOINT(S)	664
KEYPOINT	504	USED	FOR	KEYPOINT(S)	668
KEYPOINT	506	USED	FOR	KEYPOINT(S)	670
LINE	21	USED	FOR	LINE(S)	511
LINE	22	USED	FOR	LINE(S)	1363
LINE	25	USED	FOR	LINE(S)	1385
LINE	27	USED	FOR	LINE(S)	549
LINE	30	USED	FOR	LINE(S)	1406
LINE	32	USED	FOR	LINE(S)	570
LINE	35	USED	FOR	LINE(S)	514 931 1348
LINE	36	USED	FOR	LINE(S)	533 950 1367
LINE	37	USED	FOR	LINE(S)	746 1163 1580
LINE	38	USED	FOR	LINE(S)	765 1182 1599
LINE	39	USED	FOR	LINE(S)	781 1198 1615
LINE	40	USED	FOR	LINE(S)	662 1079 1496
LINE	41	USED	FOR	LINE(S)	674 1091 1508
LINE	42	USED	FOR	LINE(S)	686 1103 1520
LINE	43	USED	FOR	LINE(S)	797 1214 1631
LINE	44	USED	FOR	LINE(S)	816 1233 1650
LINE	45	USED	FOR	LINE(S)	832 1249 1666
LINE	46	USED	FOR	LINE(S)	848 1265 1682
LINE	74	USED	FOR	LINE(S)	1529
LINE	75	USED	FOR	LINE(S)	685
LINE	76	USED	FOR	LINE(S)	1552
LINE	77	USED	FOR	LINE(S)	716
LINE	78	USED	FOR	LINE(S)	1576
LINE	79	USED	FOR	LINE(S)	740
LINE	83	USED	FOR	LINE(S)	1376
LINE	84	USED	FOR	LINE(S)	532
LINE	85	USED	FOR	LINE(S)	1396
LINE	86	USED	FOR	LINE(S)	560
LINE	87	USED	FOR	LINE(S)	1417
LINE	88	USED	FOR	LINE(S)	581
LINE	158	USED	FOR	LINE(S)	1364
LINE	160	USED	FOR	LINE(S)	1359
LINE	172	USED	FOR	LINE(S)	512
LINE	176	USED	FOR	LINE(S)	513
LINE	180	USED	FOR	LINE(S)	1373
LINE	192	USED	FOR	LINE(S)	531
LINE	204	USED	FOR	LINE(S)	1386
LINE	205	USED	FOR	LINE(S)	1387
LINE	206	USED	FOR	LINE(S)	1584
LINE	207	USED	FOR	LINE(S)	1635
LINE	208	USED	FOR	LINE(S)	550
LINE	209	USED	FOR	LINE(S)	547
LINE	211	USED	FOR	LINE(S)	1582
LINE	217	USED	FOR	LINE(S)	1395
LINE	222	USED	FOR	LINE(S)	558
LINE	224	USED	FOR	LINE(S)	744
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LINE	231	USED	FOR	LINE(S)	1408
LINE	233	USED	FOR	LINE(S)	745

LINE	234	USED	FOR	LINE(S)	571
LINE	235	USED	FOR	LINE(S)	568
LINE	237	USED	FOR	LINE(S)	756
LINE	243	USED	FOR	LINE(S)	1416
LINE	245	USED	FOR	LINE(S)	754
LINE	248	USED	FOR	LINE(S)	579
LINE	250	USED	FOR	LINE(S)	1585
LINE	251	USED	FOR	LINE(S)	1586
LINE	257	USED	FOR	LINE(S)	762
LINE	258	USED	FOR	LINE(S)	760
LINE	263	USED	FOR	LINE(S)	1591
LINE	267	USED	FOR	LINE(S)	1592
LINE	269	USED	FOR	LINE(S)	1602
LINE	271	USED	FOR	LINE(S)	1600
LINE	278	USED	FOR	LINE(S)	763
LINE	282	USED	FOR	LINE(S)	764
LINE	283	USED	FOR	LINE(S)	773
LINE	287	USED	FOR	LINE(S)	771
LINE	289	USED	FOR	LINE(S)	1505
LINE	291	USED	FOR	LINE(S)	1502
LINE	293	USED	FOR	LINE(S)	1603
LINE	294	USED	FOR	LINE(S)	1604
LINE	295	USED	FOR	LINE(S)	778
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LINE	303	USED	FOR	LINE(S)	660
LINE	305	USED	FOR	LINE(S)	1608
LINE	306	USED	FOR	LINE(S)	1609
LINE	307	USED	FOR	LINE(S)	661
LINE	308	USED	FOR	LINE(S)	1618
LINE	309	USED	FOR	LINE(S)	1517
LINE	310	USED	FOR	LINE(S)	1633
LINE	311	USED	FOR	LINE(S)	1514
LINE	313	USED	FOR	LINE(S)	1616
LINE	315	USED	FOR	LINE(S)	779
LINE	320	USED	FOR	LINE(S)	780
LINE	321	USED	FOR	LINE(S)	789
LINE	323	USED	FOR	LINE(S)	672
LINE	325	USED	FOR	LINE(S)	787
LINE	327	USED	FOR	LINE(S)	673
LINE	328	USED	FOR	LINE(S)	1619
LINE	329	USED	FOR	LINE(S)	1620
LINE	330	USED	FOR	LINE(S)	794
LINE	331	USED	FOR	LINE(S)	1526
LINE	333	USED	FOR	LINE(S)	792
LINE	335	USED	FOR	LINE(S)	1624
LINE	340	USED	FOR	LINE(S)	1625
LINE	343	USED	FOR	LINE(S)	684
LINE	345	USED	FOR	LINE(S)	795
LINE	346	USED	FOR	LINE(S)	796
LINE	347	USED	FOR	LINE(S)	807
LINE	348	USED	FOR	LINE(S)	805
LINE	350	USED	FOR	LINE(S)	1636
LINE	351	USED	FOR	LINE(S)	1637
LINE	355	USED	FOR	LINE(S)	1535
LINE	356	USED	FOR	LINE(S)	1536
LINE	357	USED	FOR	LINE(S)	813
LINE	358	USED	FOR	LINE(S)	811
LINE	359	USED	FOR	LINE(S)	700
LINE	360	USED	FOR	LINE(S)	698
LINE	363	USED	FOR	LINE(S)	1642
LINE	364	USED	FOR	LINE(S)	1643
LINE	368	USED	FOR	LINE(S)	1543
LINE	369	USED	FOR	LINE(S)	1544
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LINE	372	USED	FOR	LINE(S)	708
LINE	373	USED	FOR	LINE(S)	706
LINE	375	USED	FOR	LINE(S)	1651
LINE	377	USED	FOR	LINE(S)	814
LINE	381	USED	FOR	LINE(S)	1551
LINE	382	USED	FOR	LINE(S)	815

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LINE	386	USED	FOR	LINE(S)	714
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LINE	411	USED	FOR	LINE(S)	732
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LINE	415	USED	FOR	LINE(S)	830
LINE	416	USED	FOR	LINE(S)	831
LINE	420	USED	FOR	LINE(S)	1575
LINE	421	USED	FOR	LINE(S)	840
LINE	422	USED	FOR	LINE(S)	838
LINE	424	USED	FOR	LINE(S)	1670
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LINE	427	USED	FOR	LINE(S)	1671
LINE	428	USED	FOR	LINE(S)	845
LINE	429	USED	FOR	LINE(S)	843
LINE	431	USED	FOR	LINE(S)	1675
LINE	432	USED	FOR	LINE(S)	1676
LINE	433	USED	FOR	LINE(S)	1685
LINE	435	USED	FOR	LINE(S)	1683
LINE	437	USED	FOR	LINE(S)	846
LINE	438	USED	FOR	LINE(S)	847
LINE	439	USED	FOR	LINE(S)	856
LINE	440	USED	FOR	LINE(S)	854
LINE	442	USED	FOR	LINE(S)	1686
LINE	443	USED	FOR	LINE(S)	1687
LINE	444	USED	FOR	LINE(S)	861
LINE	445	USED	FOR	LINE(S)	859
LINE	447	USED	FOR	LINE(S)	1691
LINE	448	USED	FOR	LINE(S)	1692
LINE	525	USED	FOR	LINE(S)	929
LINE	529	USED	FOR	LINE(S)	928
LINE	530	USED	FOR	LINE(S)	930
LINE	539	USED	FOR	LINE(S)	948
LINE	542	USED	FOR	LINE(S)	949
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LINE	553	USED	FOR	LINE(S)	967
LINE	561	USED	FOR	LINE(S)	975
LINE	562	USED	FOR	LINE(S)	977
LINE	572	USED	FOR	LINE(S)	987
LINE	573	USED	FOR	LINE(S)	985
LINE	574	USED	FOR	LINE(S)	988
LINE	582	USED	FOR	LINE(S)	996
LINE	583	USED	FOR	LINE(S)	998
LINE	668	USED	FOR	LINE(S)	1077
LINE	671	USED	FOR	LINE(S)	1078
LINE	680	USED	FOR	LINE(S)	1089
LINE	683	USED	FOR	LINE(S)	1090
LINE	692	USED	FOR	LINE(S)	1101
LINE	695	USED	FOR	LINE(S)	1102
LINE	701	USED	FOR	LINE(S)	1115
LINE	702	USED	FOR	LINE(S)	1117
LINE	709	USED	FOR	LINE(S)	1123
LINE	710	USED	FOR	LINE(S)	1125
LINE	717	USED	FOR	LINE(S)	1131
LINE	718	USED	FOR	LINE(S)	1133

LINE	725	USED	FOR	LINE(S)	1139
LINE	726	USED	FOR	LINE(S)	1141
LINE	733	USED	FOR	LINE(S)	1147
LINE	734	USED	FOR	LINE(S)	1149
LINE	741	USED	FOR	LINE(S)	1155
LINE	742	USED	FOR	LINE(S)	1157
LINE	748	USED	FOR	LINE(S)	1161
LINE	750	USED	FOR	LINE(S)	1162
LINE	751	USED	FOR	LINE(S)	1171
LINE	752	USED	FOR	LINE(S)	1173
LINE	757	USED	FOR	LINE(S)	1177
LINE	758	USED	FOR	LINE(S)	1179
LINE	766	USED	FOR	LINE(S)	1180
LINE	768	USED	FOR	LINE(S)	1181
LINE	769	USED	FOR	LINE(S)	1188
LINE	770	USED	FOR	LINE(S)	1190
LINE	774	USED	FOR	LINE(S)	1193
LINE	775	USED	FOR	LINE(S)	1195
LINE	782	USED	FOR	LINE(S)	1196
LINE	784	USED	FOR	LINE(S)	1197
LINE	785	USED	FOR	LINE(S)	1204
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LINE	791	USED	FOR	LINE(S)	1211
LINE	799	USED	FOR	LINE(S)	1212
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LINE	803	USED	FOR	LINE(S)	1224
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LINE	809	USED	FOR	LINE(S)	1230
LINE	817	USED	FOR	LINE(S)	1231
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LINE	820	USED	FOR	LINE(S)	1239
LINE	821	USED	FOR	LINE(S)	1241
LINE	825	USED	FOR	LINE(S)	1244
LINE	826	USED	FOR	LINE(S)	1246
LINE	833	USED	FOR	LINE(S)	1247
LINE	835	USED	FOR	LINE(S)	1248
LINE	836	USED	FOR	LINE(S)	1255
LINE	837	USED	FOR	LINE(S)	1257
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LINE	842	USED	FOR	LINE(S)	1262
LINE	849	USED	FOR	LINE(S)	1263
LINE	851	USED	FOR	LINE(S)	1264
LINE	852	USED	FOR	LINE(S)	1271
LINE	853	USED	FOR	LINE(S)	1273
LINE	857	USED	FOR	LINE(S)	1276
LINE	858	USED	FOR	LINE(S)	1278
LINE	942	USED	FOR	LINE(S)	1346
LINE	946	USED	FOR	LINE(S)	1345
LINE	947	USED	FOR	LINE(S)	1347
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LINE	959	USED	FOR	LINE(S)	1366
LINE	968	USED	FOR	LINE(S)	1383
LINE	969	USED	FOR	LINE(S)	1381
LINE	970	USED	FOR	LINE(S)	1384
LINE	978	USED	FOR	LINE(S)	1392
LINE	979	USED	FOR	LINE(S)	1394
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LINE	990	USED	FOR	LINE(S)	1402
LINE	991	USED	FOR	LINE(S)	1405
LINE	999	USED	FOR	LINE(S)	1413
LINE	1000	USED	FOR	LINE(S)	1415
LINE	1085	USED	FOR	LINE(S)	1494
LINE	1088	USED	FOR	LINE(S)	1495
LINE	1097	USED	FOR	LINE(S)	1506
LINE	1100	USED	FOR	LINE(S)	1507
LINE	1109	USED	FOR	LINE(S)	1518
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LINE	1118	USED	FOR	LINE(S)	1532

LINE	1119	USED	FOR LINE(S)	1534
LINE	1126	USED	FOR LINE(S)	1540
LINE	1127	USED	FOR LINE(S)	1542
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LINE	1142	USED	FOR LINE(S)	1556
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LINE	1150	USED	FOR LINE(S)	1564
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LINE	1158	USED	FOR LINE(S)	1572
LINE	1159	USED	FOR LINE(S)	1574
LINE	1165	USED	FOR LINE(S)	1578
LINE	1167	USED	FOR LINE(S)	1579
LINE	1168	USED	FOR LINE(S)	1588
LINE	1169	USED	FOR LINE(S)	1590
LINE	1174	USED	FOR LINE(S)	1594
LINE	1175	USED	FOR LINE(S)	1596
LINE	1183	USED	FOR LINE(S)	1597
LINE	1185	USED	FOR LINE(S)	1598
LINE	1186	USED	FOR LINE(S)	1605
LINE	1187	USED	FOR LINE(S)	1607
LINE	1191	USED	FOR LINE(S)	1610
LINE	1192	USED	FOR LINE(S)	1612
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LINE	1201	USED	FOR LINE(S)	1614
LINE	1202	USED	FOR LINE(S)	1621
LINE	1203	USED	FOR LINE(S)	1623
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LINE	1208	USED	FOR LINE(S)	1628
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LINE	1218	USED	FOR LINE(S)	1630
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LINE	1220	USED	FOR LINE(S)	1641
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LINE	1238	USED	FOR LINE(S)	1658
LINE	1242	USED	FOR LINE(S)	1661
LINE	1243	USED	FOR LINE(S)	1663
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LINE	1252	USED	FOR LINE(S)	1665
LINE	1253	USED	FOR LINE(S)	1672
LINE	1254	USED	FOR LINE(S)	1674
LINE	1258	USED	FOR LINE(S)	1677
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LINE	1266	USED	FOR LINE(S)	1680
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LINE	1269	USED	FOR LINE(S)	1688
LINE	1270	USED	FOR LINE(S)	1690
LINE	1274	USED	FOR LINE(S)	1693
LINE	1275	USED	FOR LINE(S)	1695
AREA	89	USED	FOR AREA(S)	1148
AREA	102	USED	FOR AREA(S)	423
AREA	105	USED	FOR AREA(S)	1161
AREA	118	USED	FOR AREA(S)	439
AREA	124	USED	FOR AREA(S)	1168
AREA	127	USED	FOR AREA(S)	453
AREA	133	USED	FOR AREA(S)	1176
AREA	136	USED	FOR AREA(S)	462
AREA	142	USED	FOR AREA(S)	1184
AREA	145	USED	FOR AREA(S)	469
AREA	151	USED	FOR AREA(S)	1192
AREA	154	USED	FOR AREA(S)	478
AREA	169	USED	FOR AREA(S)	1347
AREA	178	USED	FOR AREA(S)	633
AREA	185	USED	FOR AREA(S)	640
AREA	194	USED	FOR AREA(S)	1350
AREA	201	USED	FOR AREA(S)	645

AREA	210	USED	FOR AREA(S)	1355
AREA	217	USED	FOR AREA(S)	1277
AREA	219	USED	FOR AREA(S)	1362
AREA	228	USED	FOR AREA(S)	648
AREA	230	USED	FOR AREA(S)	555
AREA	233	USED	FOR AREA(S)	1289
AREA	235	USED	FOR AREA(S)	654
AREA	244	USED	FOR AREA(S)	1364
AREA	246	USED	FOR AREA(S)	567
AREA	249	USED	FOR AREA(S)	1301
AREA	251	USED	FOR AREA(S)	658
AREA	260	USED	FOR AREA(S)	1368
AREA	262	USED	FOR AREA(S)	579
AREA	265	USED	FOR AREA(S)	1374
AREA	268	USED	FOR AREA(S)	1307
AREA	271	USED	FOR AREA(S)	593
AREA	274	USED	FOR AREA(S)	660
AREA	277	USED	FOR AREA(S)	1314
AREA	280	USED	FOR AREA(S)	600
AREA	283	USED	FOR AREA(S)	666
AREA	286	USED	FOR AREA(S)	1321
AREA	289	USED	FOR AREA(S)	607
AREA	292	USED	FOR AREA(S)	1376
AREA	295	USED	FOR AREA(S)	1328
AREA	298	USED	FOR AREA(S)	614
AREA	301	USED	FOR AREA(S)	670
AREA	304	USED	FOR AREA(S)	1335
AREA	307	USED	FOR AREA(S)	621
AREA	310	USED	FOR AREA(S)	1380
AREA	313	USED	FOR AREA(S)	1342
AREA	316	USED	FOR AREA(S)	628
AREA	319	USED	FOR AREA(S)	1386
AREA	321	USED	FOR AREA(S)	672
AREA	323	USED	FOR AREA(S)	679
AREA	325	USED	FOR AREA(S)	1389
AREA	327	USED	FOR AREA(S)	684
AREA	329	USED	FOR AREA(S)	1394
AREA	331	USED	FOR AREA(S)	1401
AREA	333	USED	FOR AREA(S)	687
AREA	335	USED	FOR AREA(S)	693
AREA	337	USED	FOR AREA(S)	1403
AREA	339	USED	FOR AREA(S)	697
AREA	341	USED	FOR AREA(S)	1407
AREA	343	USED	FOR AREA(S)	1413
AREA	345	USED	FOR AREA(S)	699
AREA	347	USED	FOR AREA(S)	705
AREA	349	USED	FOR AREA(S)	1415
AREA	351	USED	FOR AREA(S)	709
AREA	353	USED	FOR AREA(S)	1419
AREA	355	USED	FOR AREA(S)	1425
AREA	357	USED	FOR AREA(S)	711
AREA	359	USED	FOR AREA(S)	717
AREA	361	USED	FOR AREA(S)	1427
AREA	363	USED	FOR AREA(S)	721
AREA	365	USED	FOR AREA(S)	1431
AREA	436	USED	FOR AREA(S)	779
AREA	449	USED	FOR AREA(S)	795
AREA	456	USED	FOR AREA(S)	809
AREA	464	USED	FOR AREA(S)	818
AREA	472	USED	FOR AREA(S)	825
AREA	480	USED	FOR AREA(S)	834
AREA	565	USED	FOR AREA(S)	911
AREA	577	USED	FOR AREA(S)	923
AREA	589	USED	FOR AREA(S)	935
AREA	595	USED	FOR AREA(S)	949
AREA	602	USED	FOR AREA(S)	956
AREA	609	USED	FOR AREA(S)	963
AREA	616	USED	FOR AREA(S)	970
AREA	623	USED	FOR AREA(S)	977
AREA	630	USED	FOR AREA(S)	984

AREA 635 USED FOR AREA(S) 989
 AREA 638 USED FOR AREA(S) 996
 AREA 643 USED FOR AREA(S) 1001
 AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,

```
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #1

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #2

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #2

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #3

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
```


ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #3

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,33,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation - Between Can and IB

Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
 KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=

```
IN RANGE      1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO      31 (CYLINDRICAL)

UNSELECT      FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO      0 (CARTESIAN)

UNSELECT      FOR ITEM=LOC COMPONENT=Z      BETWEEN -1.5099      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,      AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL=      1 MATERIAL=      15 ESYS= 0

NUMBER OF ELEMENTS GENERATED=      64
-----
Top Can #2

ELEMENT TYPE SET TO      26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE      1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO      32 (CYLINDRICAL)

UNSELECT      FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO      0 (CARTESIAN)

RESELECT      FOR ITEM=LOC COMPONENT=Z      BETWEEN 1.2346      AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,      AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL=      1 MATERIAL=      15 ESYS= 0

NUMBER OF ELEMENTS GENERATED=      64
```

Sides Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00

KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 77.500 TIME= 17:29:02
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

```

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.
SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
-----

```

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360

KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,, 346,
ASEL,U,AREA,, 702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140

KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 98.690

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:29:35 NOV 01, 1995 CP= 108.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 109.270 TIME= 17:29:36
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5879.320

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:05:56 NOV 01, 1995 CP= 5879.320
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5879.940 TIME= 19:05:57
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7859.760

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH

```
/COM,  
/AUX12,  
ESEL,S,TYPE,,6,  
NSLE,S,  
STEF,5.67E-8,  
GEOM,0,  
VTYPE,0,100,  
WRITE,glscangap,
```

```
ALL SELECT FOR ITEM=ELEM COMPONENT=  
IN RANGE 1 TO 10656 STEP 1
```

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

```
ALL SELECT FOR ITEM=NODE COMPONENT=  
IN RANGE 1 TO 10009 STEP 1
```

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

```
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****  
38303 VERSION=HP 9000/7XX 19:39:00 NOV 01, 1995 CP= 7859.840  
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844
```

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

```
ELEMENT TYPE SET TO 18  
SE,glscangap,  
SE,iobargap,
```

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

```
SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 6 TO 6 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 16 TO 16 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 26 TO 26 STEP 1
```

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 36 TO 36 STEP 1
```

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7862.610

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
DONT MESH; Either Assume its VOID or its meshed earlier
This section used only if both rad. and He conducti
is used in the model.
He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,

VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:39:16 NOV 01, 1995 CP= 7872.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .000000E+00 .000000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7881.920

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7881.930 TIME= 19:39:26
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1379438 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=

IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7884.280 TIME= 19:39:28

All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:39:28 NOV 01, 1995 CP= 7884.280
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM. TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO 273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7885.730 TIME= 19:39:30
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7886.170 TIME= 19:39:30
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19821.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.47040E-12	IXX = .2730E+05	IXX = .2701E+05
YC = -.10514E-01	IYY = .2709E+05	IYY = .2680E+05
ZC = -.12014	IZZ = 9810.	IZZ = 9808.
	IXY = .8715E-08	IXY = .8813E-08
	IYZ = .4597E-10	IYZ = 25.04
	IZX = -.2955E-08	IZX = -.1835E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	129.199

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7924.810 TIME= 19:41:01
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	22.170	.003
11	320	SHELL57	.820	.003
18	2	MATRIX50	5.290	2.645

Time at end of element matrix formulation CP= 7924.81.
HT FLOW CONVERGENCE VALUE= 155.4 CRITERION= .1554

Estimated number of active DOF= 8639.

Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8999.35.

Equation solver maximum pivot= 45.7732646 at node 8097 TEMP.

Equation solver minimum pivot= 0.217830495 at node 3498 TEMP.

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.9
 HT FLOW CONVERGENCE VALUE= 463.5 CRITERION= .9967E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.37
 HT FLOW CONVERGENCE VALUE= 55.76 CRITERION= .9967E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.35
 HT FLOW CONVERGENCE VALUE= 10.39 CRITERION= .9967E-01
 EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.021
 HT FLOW CONVERGENCE VALUE= .6971 CRITERION= .9967E-01
 EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2148
 HT FLOW CONVERGENCE VALUE= .1726 CRITERION= .9967E-01
 EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1647E-01
 HT FLOW CONVERGENCE VALUE= .1011E-01 CRITERION= .9967E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.440	.002
11	320	SHELL57	.380	.001
18	2	MATRIX50	8.690	4.345

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.340	.000
11	320	SHELL57	.070	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
 *** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS

ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
 R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS

BUFFER SIZE USED= 4096
 57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21x2.emat
 5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21x2.esav
 58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21x2.tri
 .047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21x2.dsub
 5.297 MB WRITTEN ON RESULTS FILE: glsh21x2.rth

Solve steady-state for initial conditions
 with WP surface temperatures from repository
 steady-state solution.
 Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
 RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1383000 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14579.280 TIME= 21:51:34
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14579.730 TIME= 21:51:35
The step data was checked and warning messages were found.
Please review output or errors file (glsh21x2.err) for these warning messages.

*** NOTE *** CP= 14579.730 TIME= 21:51:35
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:51:35 NOV 01, 1995 CP= 14579.730
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .1036E-01 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2993E-02
HT FLOW CONVERGENCE VALUE= .2305E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP
Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,6,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07

TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1383000 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14870.970 TIME= 22:02:10
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14871.410 TIME= 22:02:10
The step data was checked and warning messages were found.
Please review output or errors file (glsh21x2.err) for these warning messages.

*** NOTE *** CP= 14871.410 TIME= 22:02:10
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:02:10 NOV 01, 1995 CP= 14871.410
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .2305E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2913E-03
HT FLOW CONVERGENCE VALUE= .1762E-03 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 8
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15145.440 TIME= 22:12:17
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:12:18 NOV 01, 1995 CP= 15145.880
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 139.7 CRITERION= .1698
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 20.28
HT FLOW CONVERGENCE VALUE= 22.88 CRITERION= .9659E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.239
HT FLOW CONVERGENCE VALUE= 3.098 CRITERION= .9659E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2478
HT FLOW CONVERGENCE VALUE= .1556 CRITERION= .9659E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4570E-01
HT FLOW CONVERGENCE VALUE= .3375E-01 CRITERION= .9659E-01 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4
*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 12
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15979.670 TIME= 22:41:13
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:41:13 NOV 01, 1995 CP= 15980.110
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 72.08 CRITERION= .1182
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 8.872
HT FLOW CONVERGENCE VALUE= 9.359 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.735
HT FLOW CONVERGENCE VALUE= 1.243 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8769E-01
HT FLOW CONVERGENCE VALUE= .5655E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16622.770 TIME= 23:03:48
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:03:49 NOV 01, 1995 CP= 16623.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 52.84 CRITERION= .1054
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.064
HT FLOW CONVERGENCE VALUE= 6.077 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.119
HT FLOW CONVERGENCE VALUE= .7772 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5303E-01
HT FLOW CONVERGENCE VALUE= .3323E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17264.500 TIME= 23:26:20
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:26:20 NOV 01, 1995 CP= 17264.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.94 CRITERION= .9863E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.702
HT FLOW CONVERGENCE VALUE= 4.513 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8259
HT FLOW CONVERGENCE VALUE= .5563 CRITERION= .8883E-01

EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3871E-01
HT FLOW CONVERGENCE VALUE= .2259E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17907.490 TIME= 23:48:54
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:48:55 NOV 01, 1995 CP= 17907.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.58 CRITERION= .9403E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.864
HT FLOW CONVERGENCE VALUE= 3.574 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6502
HT FLOW CONVERGENCE VALUE= .4252 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2993E-01
HT FLOW CONVERGENCE VALUE= .1651E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18549.570 TIME= 00:11:25
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:11:25 NOV 02, 1995 CP= 18550.010
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 32.10 CRITERION= .9051E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.293
HT FLOW CONVERGENCE VALUE= 2.947 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5333
HT FLOW CONVERGENCE VALUE= .3387 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2404E-01
HT FLOW CONVERGENCE VALUE= .1265E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 27
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19193.190 TIME= 00:33:57
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:33:57 NOV 02, 1995 CP= 19193.630
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.79 CRITERION= .8764E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.882
HT FLOW CONVERGENCE VALUE= 2.463 CRITERION= .8280E-01

EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4510
 HT FLOW CONVERGENCE VALUE= .2577 CRITERION= .8280E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1992E-01
 HT FLOW CONVERGENCE VALUE= .1089E-01 CRITERION= .8280E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 30
 *** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19837.280 TIME= 00:56:29
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:56:29 NOV 02, 1995 CP= 19837.730
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.97 CRITERION= .8514E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.545
 HT FLOW CONVERGENCE VALUE= 2.078 CRITERION= .8110E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3864
 HT FLOW CONVERGENCE VALUE= .2094 CRITERION= .8110E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1666E-01
 HT FLOW CONVERGENCE VALUE= .9042E-02 CRITERION= .8110E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 33
 *** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20488.860 TIME= 01:19:10
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 01:19:10 NOV 02, 1995 CP= 20489.310
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 23.80 CRITERION= .8301E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.289
 HT FLOW CONVERGENCE VALUE= 1.816 CRITERION= .7954E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3379
 HT FLOW CONVERGENCE VALUE= .1772 CRITERION= .7954E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1421E-01
 HT FLOW CONVERGENCE VALUE= .7507E-02 CRITERION= .7954E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 36
 *** TIME = .284019E+08 TIME INC = .315576E+07

NSUBST,15,30,10,ON

Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08

TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM

32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1156.10879 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 83.0314775 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21141.580 TIME= 01:41:49
This load step will be a static (steady-state) step.

*** NOTE *** CP= 21142.020 TIME= 01:41:49
The step data was checked and warning messages were found.
Please review output or errors file (glsh21x2.err) for these warning messages.

*** NOTE *** CP= 21142.030 TIME= 01:41:49
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:41:49 NOV 02, 1995 CP= 21142.030
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 22.20 CRITERION= .8116E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.099
HT FLOW CONVERGENCE VALUE= 1.627 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3020
HT FLOW CONVERGENCE VALUE= .1546 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1236E-01
HT FLOW CONVERGENCE VALUE= .6334E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 39
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21793.830 TIME= 02:04:30
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:04:30 NOV 02, 1995 CP= 21794.280
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 158.8 CRITERION= .1725
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 14.79
HT FLOW CONVERGENCE VALUE= 6.691 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.636
HT FLOW CONVERGENCE VALUE= .6967 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5179E-01
HT FLOW CONVERGENCE VALUE= .2257E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 42

*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22441.720 TIME= 02:27:07
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:27:07 NOV 02, 1995 CP= 22442.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 112.4 CRITERION= .1288
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.406
HT FLOW CONVERGENCE VALUE= 4.120 CRITERION= .6316E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9683
HT FLOW CONVERGENCE VALUE= .3666 CRITERION= .6316E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2507E-01
HT FLOW CONVERGENCE VALUE= .9937E-02 CRITERION= .6316E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23096.650 TIME= 02:49:49
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:49:50 NOV 02, 1995 CP= 23097.090
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 94.24 CRITERION= .1117
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 7.372
HT FLOW CONVERGENCE VALUE= 3.096 CRITERION= .6005E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7146
HT FLOW CONVERGENCE VALUE= .2325 CRITERION= .6005E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1577E-01
HT FLOW CONVERGENCE VALUE= .6179E-02 CRITERION= .6005E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23742.740 TIME= 03:12:25
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:12:26 NOV 02, 1995 CP= 23743.190
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 85.35 CRITERION= .1031
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.331
HT FLOW CONVERGENCE VALUE= 2.521 CRITERION= .5783E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5795
HT FLOW CONVERGENCE VALUE= .1770 CRITERION= .5783E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1141E-01
HT FLOW CONVERGENCE VALUE= .4245E-02 CRITERION= .5783E-01 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 51
*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24395.710 TIME= 03:35:07
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:35:07 NOV 02, 1995 CP= 24396.150
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 74.97 CRITERION= .9359E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.314
HT FLOW CONVERGENCE VALUE= 2.062 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4602
HT FLOW CONVERGENCE VALUE= .1337 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8406E-02
HT FLOW CONVERGENCE VALUE= .2960E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25049.710 TIME= 03:57:49
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:57:50 NOV 02, 1995 CP= 25050.150
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 64.42 CRITERION= .8437E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.397
HT FLOW CONVERGENCE VALUE= 1.664 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3617
HT FLOW CONVERGENCE VALUE= .1006 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6299E-02
HT FLOW CONVERGENCE VALUE= .2092E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 57
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25704.250 TIME= 04:20:32
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:20:32 NOV 02, 1995 CP= 25704.690
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 58.93 CRITERION= .7932E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.899
HT FLOW CONVERGENCE VALUE= 1.452 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3064
HT FLOW CONVERGENCE VALUE= .8179E-01 CRITERION= .5312E-01

EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5093E-02
 HT FLOW CONVERGENCE VALUE= .1610E-02 CRITERION= .5312E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 60
 *** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26352.080 TIME= 04:43:09
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 04:43:09 NOV 02, 1995 CP= 26352.530
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 46.06 CRITERION= .6932E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.965
 HT FLOW CONVERGENCE VALUE= 1.071 CRITERION= .5182E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2226
 HT FLOW CONVERGENCE VALUE= .5781E-01 CRITERION= .5182E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3697E-02
 HT FLOW CONVERGENCE VALUE= .1096E-02 CRITERION= .5182E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 63
 *** TIME = .284018E+09 TIME INC = .315576E+08
 NSUBST,20,40,15,ON

Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09

TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
 748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
 IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
 IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 139.973714 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27005.900 TIME= 05:05:51
This load step will be a static (steady-state) step.

*** NOTE *** CP= 27006.350 TIME= 05:05:52
The step data was checked and warning messages were found.
Please review output or errors file (glsh21x2.err) for these warning
messages.

*** NOTE *** CP= 27006.350 TIME= 05:05:52
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:05:52 NOV 02, 1995 CP= 27006.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER.	22
TIME AT END OF THE LOAD STEP.	.31558E+09
AUTOMATIC TIME STEPPING	ON
INITIAL NUMBER OF SUBSTEPS	0
MAXIMUM NUMBER OF SUBSTEPS	0
MINIMUM NUMBER OF SUBSTEPS	1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS.	25

STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 39.19 CRITERION= .6397E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.472
 HT FLOW CONVERGENCE VALUE= .8636 CRITERION= .5058E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1782
 HT FLOW CONVERGENCE VALUE= .4502E-01 CRITERION= .5058E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 65
 *** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27467.560 TIME= 05:22:13
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 05:22:14 NOV 02, 1995 CP= 27468.010
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 287.1 CRITERION= .2898
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 17.80
 HT FLOW CONVERGENCE VALUE= 3.007 CRITERION= .4021E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7607
 HT FLOW CONVERGENCE VALUE= .1404 CRITERION= .4021E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9238E-02
 HT FLOW CONVERGENCE VALUE= .1837E-02 CRITERION= .4021E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 68
 *** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28121.750 TIME= 05:44:55
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 05:44:55 NOV 02, 1995 CP= 28122.200
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 208.4 CRITERION= .2107
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 11.46
 HT FLOW CONVERGENCE VALUE= 1.541 CRITERION= .3214E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3789
 HT FLOW CONVERGENCE VALUE= .5496E-01 CRITERION= .3214E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3767E-02
 HT FLOW CONVERGENCE VALUE= .5393E-03 CRITERION= .3214E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 71
 *** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28775.730 TIME= 06:07:36
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:07:37 NOV 02, 1995 CP= 28776.180
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 99.65 CRITERION= .1027
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.080
HT FLOW CONVERGENCE VALUE= .5569 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1348
HT FLOW CONVERGENCE VALUE= .1721E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 73
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29243.160 TIME= 06:24:03
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:24:04 NOV 02, 1995 CP= 29243.600
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.74 CRITERION= .5183E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.349
HT FLOW CONVERGENCE VALUE= .2329 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5058E-01
HT FLOW CONVERGENCE VALUE= .5522E-02 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 75
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29706.120 TIME= 06:40:26
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:40:26 NOV 02, 1995 CP= 29706.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.64 CRITERION= .2714E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.565
HT FLOW CONVERGENCE VALUE= .1118 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1994E-01
HT FLOW CONVERGENCE VALUE= .1820E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 77
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30174.440 TIME= 06:56:52
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:56:53 NOV 02, 1995 CP= 30174.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 4.468 CRITERION= .1410E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.890
 HT FLOW CONVERGENCE VALUE= .7361E-01 CRITERION= .1373E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7237E-02
 HT FLOW CONVERGENCE VALUE= .4236E-03 CRITERION= .1373E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 79
 *** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30636.800 TIME= 07:13:14
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 07:13:14 NOV 02, 1995 CP= 30637.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.29 CRITERION= .1803E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.287
 HT FLOW CONVERGENCE VALUE= .8040E-01 CRITERION= .1128E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8502E-02
 HT FLOW CONVERGENCE VALUE= .3463E-03 CRITERION= .1128E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 81
 *** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31104.770 TIME= 07:29:39
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 07:29:40 NOV 02, 1995 CP= 31105.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.08 CRITERION= .1763E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.002
 HT FLOW CONVERGENCE VALUE= .6203E-01 CRITERION= .9340E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7701E-02
 HT FLOW CONVERGENCE VALUE= .2721E-03 CRITERION= .9340E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 83
 *** TIME = .284018E+10 TIME INC = .315576E+09
 NSUBST,30,60,20,ON

Apply loads and solve for 100 to 1000 years.

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
115.610895 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 175.696156 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31574.490 TIME= 07:46:25
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31574.950 TIME= 07:46:26
The step data was checked and warning messages were found.
Please review output or errors file (glsh21x2.err) for these warning messages.

*** NOTE *** CP= 31574.960 TIME= 07:46:26
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:46:26 NOV 02, 1995 CP= 31574.960
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
TIME AT END OF THE LOAD STEP.31558E+10
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 15.43 CRITERION= .1723E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.764
HT FLOW CONVERGENCE VALUE= .4802E-01 CRITERION= .7808E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6804E-02
HT FLOW CONVERGENCE VALUE= .2047E-03 CRITERION= .7808E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 85
*** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32044.850 TIME= 08:03:08
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:03:08 NOV 02, 1995 CP= 32045.300
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 90.64 CRITERION= .9051E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -8.019
HT FLOW CONVERGENCE VALUE= .2224 CRITERION= .2424E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2881E-01
HT FLOW CONVERGENCE VALUE= .2937E-03 CRITERION= .2424E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 87

*** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32507.470 TIME= 08:19:30
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:19:30 NOV 02, 1995 CP= 32507.920
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 87.61 CRITERION= .8762E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.987
HT FLOW CONVERGENCE VALUE= .1935E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5633E-02
HT FLOW CONVERGENCE VALUE= .3986E-04 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 89
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32974.350 TIME= 08:35:57
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:35:57 NOV 02, 1995 CP= 32974.790
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 44.94 CRITERION= .4496E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.579
HT FLOW CONVERGENCE VALUE= .1531E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3483E-02
HT FLOW CONVERGENCE VALUE= .2013E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 91
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33437.000 TIME= 08:52:19
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:52:20 NOV 02, 1995 CP= 33437.440
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.47 CRITERION= .2849E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.681
HT FLOW CONVERGENCE VALUE= .8598E-02 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1922E-02
HT FLOW CONVERGENCE VALUE= .9138E-05 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 93
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33903.980 TIME= 09:08:46
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:08:46 NOV 02, 1995 CP= 33904.420
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.27 CRITERION= .3328E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.925
HT FLOW CONVERGENCE VALUE= .8394E-02 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1898E-02
HT FLOW CONVERGENCE VALUE= .7490E-05 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 95
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34371.030 TIME= 09:25:12
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:25:13 NOV 02, 1995 CP= 34371.480
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 39.55 CRITERION= .3955E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.266
HT FLOW CONVERGENCE VALUE= .8357E-02 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1912E-02
HT FLOW CONVERGENCE VALUE= .6275E-05 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 97
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34837.670 TIME= 09:41:44
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:41:44 NOV 02, 1995 CP= 34838.110
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.91 CRITERION= .4291E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.466
HT FLOW CONVERGENCE VALUE= .7633E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1765E-02
HT FLOW CONVERGENCE VALUE= .4821E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 99
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35300.440 TIME= 09:58:07
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 09:58:07 NOV 02, 1995 CP= 35300.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.85 CRITERION= .4085E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.374
 HT FLOW CONVERGENCE VALUE= .6138E-02 CRITERION= .4900E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1433E-02
 HT FLOW CONVERGENCE VALUE= .3256E-05 CRITERION= .4900E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 101
 *** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35768.500 TIME= 10:14:43
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:14:43 NOV 02, 1995 CP= 35768.940
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.50 CRITERION= .3651E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.150
 HT FLOW CONVERGENCE VALUE= .4635E-02 CRITERION= .4042E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1092E-02
 HT FLOW CONVERGENCE VALUE= .2063E-05 CRITERION= .4042E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 103
 *** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 36230.130

 Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:31:17 NOV 02, 1995 CP= 36230.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7655 TEMP	peakgls	130.1	31.56	191.0	.1262E+10

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= .126230403E+10

***** ROUTINE COMPLETED ***** CP = 36230.570

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:31:20 NOV 02, 1995 CP= 36230.610
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .12623E+10

SET COMMAND GOT LOAD STEP= 25 SUBSTEP= 1 CUMULATIVE ITERATION= 73
TIME/FREQUENCY= .12623E+10

TITLE=
DHLW WP at Time of Peak Temp. (40.000001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (40.000001 years)

*** WARNING *** CP= 36270.850 TIME= 10:32:15
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36270.890 TIME= 10:32:15
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0

USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 51
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.45 BY .13423 TO 191.50

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 36318.370 TIME= 10:33:09
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36318.410 TIME= 10:33:09
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 65
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.45 BY .13423 TO 191.50

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 36365.590 TIME= 10:34:05
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36365.620 TIME= 10:34:05
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.45 BY .13423 TO 191.50

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 36384.460 TIME= 10:34:27
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36384.500 TIME= 10:34:27
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 85
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.45 BY .13423 TO 191.50

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 36432.090 TIME= 10:35:20
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36432.120 TIME= 10:35:20
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 36440.710

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log

h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:35:30 NOV 02, 1995 CP= 36440.710
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2	NSOL	7952 TEMP	t94i045	125.3	.2000E-05	188.2	.1262E+10
3	NSOL	7726 TEMP	t94o045	125.3	.2000E-05	188.2	.1262E+10
4	NSOL	7730 TEMP	h94i045	134.8	.2000E-05	191.2	.1262E+10
5	NSOL	7654 TEMP	c94i045	131.7	31.56	191.0	.1262E+10
6	NSOL	7686 TEMP	h94o045	115.7	31.56	187.3	.1262E+10
7	NSOL	7667 TEMP	s94i045	87.79	31.56	181.7	.1893E+10
8	NSOL	7929 TEMP	s94o045	87.61	31.56	181.7	.1893E+10
9	NSOL	8013 TEMP	i94i045	57.06	31.56	179.5	.1893E+10
10	NSOL	8030 TEMP	i94o045	56.72	31.56	179.5	.1893E+10
11	NSOL	8145 TEMP	o94o045	56.36	31.56	179.4	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:35:35 NOV 02, 1995 CP= 36442.960
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.267	125.329	134.844	131.730	115.723	87.7876
.20000E-05	125.264	125.326	134.841	131.727	115.721	87.7851
31.558	125.264	125.326	134.841	131.727	115.721	87.7851
.31558E+07	133.893	133.954	143.441	140.696	125.443	98.5998
.63116E+07	137.019	137.079	146.388	143.825	129.117	103.145
.94673E+07	138.875	138.933	148.043	145.613	131.371	106.170
.12623E+08	140.160	140.216	149.131	146.808	132.979	108.471
.15779E+08	141.128	141.183	149.910	147.677	134.220	110.343
.18935E+08	141.900	141.954	150.503	148.350	135.231	111.930
.22090E+08	142.546	142.599	150.981	148.898	136.089	113.319
.25246E+08	143.108	143.160	151.388	149.367	136.840	114.554
.28402E+08	143.608	143.659	151.744	149.779	137.512	115.673
.31558E+08	144.078	144.128	152.079	150.166	138.139	116.713
.63115E+08	148.215	148.259	155.315	153.756	143.354	124.724
.94673E+08	152.082	152.123	158.734	157.378	147.837	130.673
.12623E+09	155.909	155.948	162.307	161.093	152.093	135.838
.15779E+09	159.618	159.656	165.846	164.744	156.140	140.541
.18935E+09	162.868	162.905	168.960	167.948	159.662	144.590
.22090E+09	165.576	165.612	171.545	170.606	162.590	147.970
.25246E+09	168.013	168.048	173.870	172.993	165.217	151.000
.28402E+09	169.748	169.783	175.488	174.661	167.102	153.256
.31558E+09	171.125	171.159	176.751	175.966	168.608	155.111
.63115E+09	180.817	180.845	185.411	184.908	179.171	168.538
.94673E+09	186.840	186.862	190.572	190.232	185.704	177.257
.12623E+10	188.203	188.221	191.213	190.955	187.337	180.572
.15779E+10	187.792	187.807	190.217	190.011	187.098	181.649
.18935E+10	186.718	186.730	188.680	188.510	186.147	181.730
.22090E+10	185.229	185.238	186.823	186.681	184.751	181.148
.25246E+10	183.267	183.275	184.571	184.449	182.860	179.896
.28402E+10	181.521	181.527	182.597	182.492	181.173	178.716
.31558E+10	179.959	179.964	180.855	180.765	179.659	177.603
.63115E+10	172.596	172.598	172.870	172.837	172.490	171.849
.94673E+10	167.714	167.715	167.896	167.872	167.637	167.203
.12623E+11	165.179	165.180	165.323	165.303	165.114	164.767
.15779E+11	163.528	163.529	163.646	163.629	163.474	163.189
.18935E+11	161.628	161.629	161.724	161.710	161.582	161.348
.22090E+11	159.383	159.383	159.462	159.449	159.344	159.150
.25246E+11	156.934	156.934	156.998	156.988	156.901	156.741
.28402E+11	154.574	154.574	154.626	154.618	154.545	154.414
.31558E+11	152.435	152.435	152.478	152.470	152.411	152.302

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:35 NOV 02, 1995 CP= 36442.970
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP s94o045	8013 TEMP i94i045	8030 TEMP i94o045	8145 TEMP o94o045
.10000E-05	87.6149	57.0576	56.7200	56.3590
.20000E-05	87.6124	57.0565	56.7190	56.3580
31.558	87.6123	57.0563	56.7188	56.3578
.31558E+07	98.4356	72.0648	71.7391	71.3891
.63116E+07	102.987	78.6017	78.2862	77.9464
.94673E+07	106.017	83.0507	82.7441	82.4136
.12623E+08	108.323	86.4914	86.1931	85.8711
.15779E+08	110.199	89.3183	89.0274	88.7133

.18935E+08	111.790	91.7303	91.4462	91.1393
.22090E+08	113.182	93.8462	93.5685	93.2683
.25246E+08	114.420	95.7225	95.4511	95.1571
.28402E+08	115.542	97.4174	97.1517	96.8634
.31558E+08	116.585	98.9816	98.7213	98.4382
.63115E+08	124.613	110.400	110.176	109.933
.94673E+08	130.572	118.127	117.921	117.699
.12623E+09	135.743	124.441	124.247	124.039
.15779E+09	140.450	129.998	129.814	129.615
.18935E+09	144.503	134.714	134.537	134.346
.22090E+09	147.886	138.632	138.461	138.276
.25246E+09	150.919	142.123	141.957	141.779
.28402E+09	153.177	144.756	144.595	144.422
.31558E+09	155.033	146.940	146.783	146.615
.63115E+09	168.478	162.703	162.582	162.451
.94673E+09	177.209	172.898	172.803	172.701
.12623E+10	180.534	177.166	177.091	177.009
.15779E+10	181.619	178.932	178.871	178.805
.18935E+10	181.705	179.531	179.482	179.429
.22090E+10	181.127	179.350	179.310	179.267
.25246E+10	179.880	178.408	178.375	178.339
.28402E+10	178.702	177.473	177.446	177.416
.31558E+10	177.592	176.557	176.534	176.509
.63115E+10	171.845	171.511	171.504	171.496
.94673E+10	167.201	166.968	166.963	166.958
.12623E+11	164.765	164.575	164.571	164.567
.15779E+11	163.187	163.030	163.026	163.023
.18935E+11	161.346	161.215	161.213	161.210
.22090E+11	159.149	159.040	159.038	159.035
.25246E+11	156.741	156.649	156.647	156.645
.28402E+11	154.413	154.336	154.335	154.333
.31558E+11	152.301	152.237	152.236	152.234

* Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 36443.180 TIME= 10:35:35

NSOL command erases all previously stored or calculated data
unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2 NSOL	7947 TEMP	t04i045	124.2	.2000E-05	188.1	.1262E+10
3 NSOL	7718 TEMP	t04o045	124.2	.2000E-05	188.1	.1262E+10
4 NSOL	7720 TEMP	h04i045	133.8	31.56	191.2	.1262E+10
5 NSOL	7642 TEMP	c04i045	130.4	31.56	190.9	.1262E+10
6 NSOL	7679 TEMP	h04o045	114.5	31.56	187.3	.1262E+10

7 NSOL	7662 TEMP	s04i045	86.32	31.56	181.6	.1893E+10
8 NSOL	7927 TEMP	s04o045	86.15	31.56	181.6	.1893E+10
9 NSOL	8008 TEMP	i04i045	55.99	31.56	179.5	.1893E+10
10 NSOL	8027 TEMP	i04o045	55.64	31.56	179.4	.1893E+10
11 NSOL	8142 TEMP	o04o045	55.29	31.56	179.4	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:37 NOV 02, 1995 CP= 36445.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.174	124.241	133.851	130.434	114.516	86.3193
.20000E-05	124.172	124.238	133.849	130.431	114.514	86.3170
31.558	124.172	124.238	133.849	130.431	114.514	86.3169
.31558E+07	132.978	133.044	142.655	139.632	124.463	97.3622
.63116E+07	136.182	136.246	145.688	142.864	128.236	102.012
.94673E+07	138.090	138.153	147.401	144.721	130.557	105.110
.12623E+08	139.416	139.477	148.531	145.969	132.216	107.469
.15779E+08	140.417	140.477	149.345	146.882	133.499	109.387
.18935E+08	141.218	141.277	149.968	147.592	134.545	111.015
.22090E+08	141.889	141.946	150.471	148.171	135.434	112.440
.25246E+08	142.473	142.529	150.900	148.669	136.212	113.706
.28402E+08	142.993	143.048	151.276	149.107	136.908	114.853
.31558E+08	143.481	143.535	151.628	149.516	137.556	115.919
.63115E+08	147.737	147.784	154.978	153.253	142.910	124.093
.94673E+08	151.668	151.712	158.459	156.954	147.465	130.126
.12623E+09	155.538	155.580	162.074	160.721	151.770	135.346
.15779E+09	159.279	159.320	165.645	164.412	155.853	140.090
.18935E+09	162.554	162.595	168.784	167.646	159.403	144.171
.22090E+09	165.282	165.322	171.388	170.328	162.353	147.576
.25246E+09	167.737	167.775	173.729	172.736	165.000	150.628
.28402E+09	169.485	169.523	175.360	174.420	166.898	152.902
.31558E+09	170.874	170.911	176.633	175.738	168.417	154.771
.63115E+09	180.644	180.674	185.352	184.766	179.055	168.302
.94673E+09	186.713	186.737	190.541	190.136	185.629	177.083
.12623E+10	188.104	188.124	191.191	190.883	187.281	180.437
.15779E+10	187.713	187.729	190.201	189.954	187.054	181.542
.18935E+10	186.654	186.666	188.666	188.464	186.112	181.643
.22090E+10	185.175	185.186	186.811	186.642	184.722	181.076
.25246E+10	183.222	183.231	184.560	184.416	182.835	179.837
.28402E+10	181.483	181.490	182.587	182.464	181.151	178.666
.31558E+10	179.927	179.933	180.847	180.741	179.641	177.562
.63115E+10	172.585	172.587	172.866	172.829	172.484	171.835
.94673E+10	167.706	167.708	167.893	167.866	167.632	167.194
.12623E+11	165.172	165.173	165.321	165.298	165.110	164.759
.15779E+11	163.523	163.523	163.644	163.625	163.470	163.182
.18935E+11	161.624	161.624	161.723	161.706	161.579	161.342
.22090E+11	159.379	159.379	159.460	159.446	159.341	159.146
.25246E+11	156.931	156.931	156.997	156.985	156.898	156.738
.28402E+11	154.571	154.571	154.625	154.615	154.543	154.411
.31558E+11	152.432	152.433	152.477	152.468	152.409	152.299

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:37 NOV 02, 1995 CP= 36445.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP	8008 TEMP	8027 TEMP	8142 TEMP
	s04o045	i04i045	i04o045	o04o045
.10000E-05	86.1502	55.9885	55.6438	55.2906
.20000E-05	86.1479	55.9875	55.6428	55.2896
31.558	86.1478	55.9873	55.6426	55.2894
.31558E+07	97.2013	71.2391	70.9070	70.5639
.63116E+07	101.857	77.8759	77.5543	77.2209
.94673E+07	104.960	82.3905	82.0781	81.7537
.12623E+08	107.323	85.8808	85.5769	85.2606
.15779E+08	109.246	88.7473	88.4511	88.1425
.18935E+08	110.878	91.1923	90.9031	90.6015
.22090E+08	112.306	93.3363	93.0537	92.7586
.25246E+08	113.575	95.2369	94.9607	94.6716
.28402E+08	114.725	96.9530	96.6827	96.3992
.31558E+08	115.793	98.5362	98.2713	97.9929
.63115E+08	123.984	110.069	109.841	109.601
.94673E+08	130.027	117.850	117.641	117.423
.12623E+09	135.253	124.198	124.002	123.796
.15779E+09	140.001	129.781	129.594	129.397
.18935E+09	144.085	134.516	134.336	134.147
.22090E+09	147.493	138.448	138.275	138.093
.25246E+09	150.548	141.952	141.784	141.608
.28402E+09	152.824	144.594	144.431	144.260
.31558E+09	154.695	146.787	146.628	146.461
.63115E+09	168.242	162.603	162.480	162.351
.94673E+09	177.036	172.828	172.732	172.630
.12623E+10	180.399	177.113	177.036	176.955
.15779E+10	181.512	178.889	178.828	178.763
.18935E+10	181.618	179.497	179.447	179.395
.22090E+10	181.056	179.322	179.281	179.239
.25246E+10	179.821	178.385	178.351	178.316
.28402E+10	178.652	177.454	177.426	177.397
.31558E+10	177.550	176.541	176.518	176.493
.63115E+10	171.832	171.506	171.498	171.491
.94673E+10	167.191	166.964	166.960	166.954
.12623E+11	164.757	164.572	164.568	164.564
.15779E+11	163.180	163.027	163.024	163.020
.18935E+11	161.341	161.213	161.210	161.208
.22090E+11	159.145	159.038	159.036	159.033
.25246E+11	156.737	156.647	156.645	156.643
.28402E+11	154.410	154.335	154.333	154.332
.31558E+11	152.299	152.236	152.235	152.233

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36445.340 TIME= 10:35:37
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	63 TEMP	t01i135	124.2	.2000E-05	188.1	.1262E+10
3 NSOL	20 TEMP	t01o135	124.2	.2000E-05	188.1	.1262E+10
4 NSOL	22 TEMP	h01i135	133.8	31.56	191.2	.1262E+10
5 NSOL	1 TEMP	c01i135	130.4	31.56	190.9	.1262E+10
6 NSOL	11 TEMP	h01o135	114.5	31.56	187.3	.1262E+10
7 NSOL	6 TEMP	s01i135	86.26	31.56	181.6	.1893E+10
8 NSOL	58 TEMP	s01o135	86.09	31.56	181.6	.1893E+10
9 NSOL	84 TEMP	i01i135	55.90	31.56	179.5	.1893E+10
10 NSOL	106 TEMP	i01o135	55.56	31.56	179.4	.1893E+10
11 NSOL	124 TEMP	o01o135	55.20	31.56	179.4	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:39 NOV 02, 1995 CP= 36447.270
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.167	124.234	133.831	130.401	114.473	86.2644
.20000E-05	124.165	124.231	133.829	130.399	114.470	86.2621
31.558	124.165	124.231	133.829	130.399	114.470	86.2621
.31558E+07	132.972	133.037	142.637	139.602	124.423	97.3109
.63116E+07	136.177	136.240	145.671	142.835	128.197	101.963
.94673E+07	138.085	138.147	147.384	144.693	130.519	105.062
.12623E+08	139.411	139.472	148.515	145.942	132.180	107.423
.15779E+08	140.412	140.472	149.329	146.856	133.464	109.343
.18935E+08	141.213	141.271	149.953	147.566	134.511	110.972
.22090E+08	141.884	141.941	150.456	148.147	135.401	112.398
.25246E+08	142.468	142.524	150.885	148.645	136.180	113.665
.28402E+08	142.989	143.044	151.261	149.083	136.876	114.813
.31558E+08	143.476	143.530	151.614	149.493	137.525	115.880
.63115E+08	147.733	147.781	154.966	153.234	142.883	124.060
.94673E+08	151.664	151.709	158.448	156.936	147.441	130.097
.12623E+09	155.535	155.577	162.064	160.705	151.748	135.319
.15779E+09	159.276	159.318	165.636	164.397	155.833	140.065
.18935E+09	162.552	162.592	168.775	167.632	159.384	144.146
.22090E+09	165.280	165.319	171.380	170.315	162.335	147.553
.25246E+09	167.734	167.773	173.721	172.723	164.982	150.606
.28402E+09	169.483	169.521	175.352	174.407	166.881	152.880
.31558E+09	170.872	170.909	176.626	175.726	168.400	154.750
.63115E+09	180.643	180.673	185.346	184.756	179.043	168.286
.94673E+09	186.712	186.736	190.537	190.129	185.619	177.071
.12623E+10	188.103	188.123	191.188	190.877	187.274	180.427
.15779E+10	187.713	187.728	190.198	189.949	187.048	181.534
.18935E+10	186.653	186.666	188.664	188.460	186.107	181.637
.22090E+10	185.175	185.185	186.810	186.639	184.718	181.071
.25246E+10	183.222	183.230	184.559	184.414	182.832	179.833
.28402E+10	181.483	181.490	182.586	182.462	181.149	178.663
.31558E+10	179.927	179.933	180.846	180.739	179.639	177.559
.63115E+10	172.585	172.587	172.866	172.828	172.483	171.834
.94673E+10	167.706	167.708	167.893	167.865	167.631	167.193
.12623E+11	165.172	165.173	165.321	165.298	165.110	164.758
.15779E+11	163.523	163.523	163.644	163.624	163.470	163.182
.18935E+11	161.624	161.624	161.722	161.706	161.579	161.342
.22090E+11	159.379	159.379	159.460	159.446	159.341	159.146

.25246E+11	156.931	156.931	156.997	156.985	156.898	156.737
.28402E+11	154.571	154.571	154.625	154.615	154.543	154.410
.31558E+11	152.432	152.433	152.477	152.468	152.409	152.299

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:39 NOV 02, 1995 CP= 36447.280
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	86.0952	55.9030	55.5580	55.2037
.20000E-05	86.0929	55.9021	55.5571	55.2028
.31558E+07	86.0929	55.9019	55.5569	55.2026
.63116E+07	97.1499	71.1638	70.8315	70.4872
.94673E+07	101.808	77.8057	77.4839	77.1495
.12623E+08	104.913	82.3241	82.0116	81.6861
.15779E+08	107.278	85.8175	85.5134	85.1962
.18935E+08	109.202	88.6867	88.3903	88.0807
.22090E+08	110.835	91.1339	90.8445	90.5420
.25246E+08	112.264	93.2800	92.9972	92.7012
.28402E+08	113.534	95.1824	94.9059	94.6160
.31558E+08	114.685	96.9001	96.6296	96.3452
.63115E+08	115.754	98.4848	98.2197	97.9404
.94673E+08	123.952	110.027	109.799	109.559
.12623E+09	129.998	117.813	117.604	117.385
.15779E+09	135.225	124.165	123.968	123.762
.18935E+09	139.975	129.750	129.562	129.365
.22090E+09	144.061	134.486	134.306	134.117
.25246E+09	147.470	138.421	138.247	138.064
.28402E+09	150.526	141.925	141.757	141.580
.31558E+09	152.802	144.569	144.405	144.234
.63115E+09	154.674	146.762	146.603	146.436
.94673E+09	168.227	162.585	162.462	162.333
.12623E+10	177.024	172.814	172.718	172.617
.15779E+10	180.390	177.102	177.025	176.945
.18935E+10	181.504	178.881	178.819	178.754
.22090E+10	181.612	179.491	179.441	179.388
.25246E+10	181.051	179.317	179.276	179.233
.28402E+10	179.817	178.380	178.347	178.312
.31558E+10	178.649	177.450	177.422	177.393
.63115E+10	177.547	176.538	176.514	176.490
.94673E+10	171.831	171.505	171.497	171.490
.12623E+11	167.191	166.964	166.959	166.954
.15779E+11	164.756	164.571	164.567	164.563
.18935E+11	163.180	163.027	163.023	163.020
.22090E+11	161.340	161.213	161.210	161.207
.25246E+11	159.144	159.038	159.036	159.033
.28402E+11	156.736	156.647	156.645	156.643
.31558E+11	154.410	154.335	154.333	154.332
	152.298	152.236	152.234	152.233

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 36447.490 TIME= 10:35:39
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045
 VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045
 VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045
 VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	98.48	31.56	183.9	.1578E+10
3 NSOL	7722 TEMP	tb4o045	98.40	31.56	183.9	.1578E+10
4 NSOL	7724 TEMP	hb4i045	92.21	31.56	182.7	.1578E+10
5 NSOL	7650 TEMP	cb4i045	87.43	31.56	182.0	.1893E+10
6 NSOL	7682 TEMP	hb4o045	81.81	31.56	181.4	.1893E+10
7 NSOL	7666 TEMP	sb4i045	75.32	31.56	180.6	.1893E+10
8 NSOL	7928 TEMP	sb4o045	75.25	31.56	180.6	.1893E+10
9 NSOL	8012 TEMP	ib4i045	53.12	31.56	179.2	.1893E+10
10 NSOL	8029 TEMP	ib4o045	52.85	31.56	179.1	.1893E+10
11 NSOL	8144 TEMP	ob4o045	52.56	31.56	179.1	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:41 NOV 02, 1995 CP= 36449.420
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	98.4818	98.4036	92.2110	87.4343	81.8159	75.3197
.20000E-05	98.4788	98.4006	92.2082	87.4318	81.8137	75.3176
31.558	98.4787	98.4004	92.2081	87.4317	81.8136	75.3175
.31558E+07	109.127	109.050	103.106	98.6405	93.4136	87.3415
.63116E+07	113.411	113.337	107.593	103.325	98.3409	92.5382
.94673E+07	116.180	116.107	110.540	106.431	101.640	96.0571
.12623E+08	118.238	118.168	112.759	108.788	104.162	98.7679
.15779E+08	119.883	119.814	114.549	110.699	106.218	100.992
.18935E+08	121.258	121.191	116.058	112.317	107.966	102.889
.22090E+08	122.449	122.383	117.371	113.730	109.497	104.556
.25246E+08	123.503	123.438	118.536	114.984	110.858	106.039
.28402E+08	124.452	124.389	119.589	116.119	112.090	107.383
.31558E+08	125.336	125.274	120.568	117.173	113.234	108.630
.63115E+08	132.272	132.218	128.146	125.264	121.931	118.023
.94673E+08	137.661	137.610	133.870	131.262	128.252	124.712
.12623E+09	142.480	142.432	138.898	136.465	133.663	130.359
.15779E+09	146.934	146.887	143.503	141.200	138.554	135.423
.18935E+09	150.780	150.735	147.470	145.272	142.749	139.758
.22090E+09	153.984	153.940	150.777	148.666	146.246	143.372
.25246E+09	156.856	156.813	153.741	151.706	149.377	146.605
.28402E+09	158.964	158.922	155.933	153.965	151.713	149.029
.31558E+09	160.679	160.638	157.726	155.818	153.636	151.033
.63115E+09	172.929	172.896	170.619	169.177	167.533	165.554
.94673E+09	180.739	180.713	178.915	177.800	176.531	174.995

.12623E+10	183.356	183.335	181.900	181.016	180.012	178.793
.15779E+10	183.889	183.872	182.718	182.009	181.204	180.226
.18935E+10	183.545	183.531	182.596	182.021	181.369	180.577
.22090E+10	182.628	182.617	181.854	181.384	180.851	180.204
.25246E+10	181.113	181.104	180.477	180.089	179.649	179.116
.28402E+10	179.725	179.717	179.197	178.874	178.508	178.064
.31558E+10	178.448	178.441	178.006	177.735	177.427	177.055
.63115E+10	172.112	172.110	171.974	171.888	171.790	171.673
.94673E+10	167.381	167.380	167.288	167.229	167.162	167.082
.12623E+11	164.909	164.908	164.834	164.786	164.732	164.667
.15779E+11	163.305	163.304	163.244	163.205	163.160	163.107
.18935E+11	161.443	161.443	161.393	161.361	161.324	161.279
.22090E+11	159.229	159.229	159.188	159.161	159.130	159.094
.25246E+11	156.806	156.806	156.772	156.750	156.724	156.694
.28402E+11	154.467	154.467	154.439	154.421	154.399	154.374
.31558E+11	152.346	152.346	152.323	152.307	152.290	152.269

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:41 NOV 02, 1995 CP= 36449.440
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP sb4o045	8012 TEMP ib4i045	8029 TEMP ib4o045	8144 TEMP ob4o045
.10000E-05	75.2487	53.1258	52.8497	52.5617
.20000E-05	75.2466	53.1249	52.8489	52.5609
31.558	75.2465	53.1247	52.8487	52.5606
.31558E+07	87.2754	68.4683	68.2016	67.9245
.63116E+07	92.4752	75.2034	74.9447	74.6767
.94673E+07	95.9966	79.8064	79.5550	79.2948
.12623E+08	98.7096	83.3770	83.1321	82.8791
.15779E+08	100.935	86.3165	86.0777	85.8313
.18935E+08	102.834	88.8282	88.5949	88.3544
.22090E+08	104.502	91.0336	90.8055	90.5705
.25246E+08	105.987	92.9904	92.7670	92.5370
.28402E+08	107.332	94.7583	94.5396	94.3143
.31558E+08	108.580	96.3895	96.1751	95.9541
.63115E+08	117.981	108.261	108.077	107.887
.94673E+08	124.674	116.227	116.058	115.885
.12623E+09	130.324	122.694	122.535	122.373
.15779E+09	135.390	128.366	128.214	128.060
.18935E+09	139.726	133.172	133.026	132.878
.22090E+09	143.341	137.163	137.022	136.880
.25246E+09	146.576	140.718	140.582	140.444
.28402E+09	149.001	143.404	143.272	143.138
.31558E+09	151.006	145.636	145.507	145.377
.63115E+09	165.533	161.748	161.649	161.549
.94673E+09	174.979	172.175	172.097	172.019
.12623E+10	178.780	176.599	176.536	176.474
.15779E+10	180.215	178.478	178.428	178.378
.18935E+10	180.568	179.165	179.124	179.084
.22090E+10	180.197	179.051	179.018	178.985
.25246E+10	179.110	178.161	178.134	178.107
.28402E+10	178.060	177.268	177.245	177.223
.31558E+10	177.051	176.384	176.365	176.347
.63115E+10	171.672	171.456	171.450	171.444
.94673E+10	167.081	166.930	166.926	166.922
.12623E+11	164.667	164.544	164.541	164.538
.15779E+11	163.106	163.004	163.002	162.999
.18935E+11	161.279	161.194	161.192	161.190
.22090E+11	159.093	159.022	159.021	159.019
.25246E+11	156.694	156.634	156.633	156.631
.28402E+11	154.374	154.324	154.323	154.322
.31558E+11	152.269	152.227	152.226	152.225

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36449.640 TIME= 10:35:41
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	1033 TEMP	t01i135	98.47	31.56	183.9 .1578E+10
3	NSOL	733 TEMP	t01o135	98.39	31.56	183.9 .1578E+10
4	NSOL	735 TEMP	h01i135	92.18	31.56	182.7 .1578E+10
5	NSOL	679 TEMP	c01i135	87.40	31.56	182.0 .1893E+10
6	NSOL	704 TEMP	h01o135	81.77	31.56	181.4 .1893E+10
7	NSOL	691 TEMP	s01i135	75.26	31.56	180.6 .1893E+10
8	NSOL	1018 TEMP	s01o135	75.19	31.56	180.6 .1893E+10
9	NSOL	1292 TEMP	i01i135	53.04	31.56	179.2 .1893E+10
10	NSOL	1307 TEMP	i01o135	52.77	31.56	179.1 .1893E+10
11	NSOL	2078 TEMP	o01o135	52.48	31.56	179.1 .1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:43 NOV 02, 1995 CP= 36451.580
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	98.4690	98.3907	92.1862	87.3994	81.7717	75.2663
.20000E-05	98.4661	98.3877	92.1835	87.3969	81.7694	75.2642
31.558	98.4659	98.3875	92.1834	87.3968	81.7693	75.2641
.31558E+07	109.115	109.039	103.083	98.6080	93.3726	87.2919
.63116E+07	113.400	113.326	107.571	103.294	98.3018	92.4909
.94673E+07	116.170	116.097	110.519	106.402	101.602	96.0117
.12623E+08	118.229	118.158	112.739	108.759	104.126	98.7242
.15779E+08	119.873	119.804	114.529	110.671	106.184	100.949
.18935E+08	121.249	121.181	116.039	112.290	107.932	102.848
.22090E+08	122.440	122.374	117.353	113.704	109.464	104.516
.25246E+08	123.494	123.429	118.518	114.959	110.826	106.000

.28402E+08	124.444	124.381	119.571	116.094	112.059	107.345
.31558E+08	125.328	125.265	120.550	117.149	113.203	108.593
.63115E+08	132.266	132.211	128.132	125.244	121.906	117.992
.94673E+08	137.655	137.604	133.857	131.243	128.229	124.684
.12623E+09	142.475	142.427	138.886	136.448	133.642	130.333
.15779E+09	146.929	146.882	143.492	141.184	138.534	135.399
.18935E+09	150.775	150.730	147.459	145.257	142.730	139.735
.22090E+09	153.980	153.936	150.767	148.652	146.228	143.350
.25246E+09	156.852	156.809	153.731	151.693	149.360	146.584
.28402E+09	158.960	158.918	155.923	153.951	151.696	149.009
.31558E+09	160.675	160.634	157.717	155.805	153.620	151.014
.63115E+09	172.926	172.893	170.612	169.167	167.521	165.540
.94673E+09	180.737	180.711	178.910	177.792	176.522	174.984
.12623E+10	183.354	183.333	181.896	181.010	180.005	178.785
.15779E+10	183.888	183.871	182.715	182.004	181.198	180.219
.18935E+10	183.544	183.530	182.593	182.018	181.364	180.571
.22090E+10	182.627	182.616	181.852	181.381	180.847	180.200
.25246E+10	181.113	181.104	180.475	180.087	179.646	179.112
.28402E+10	179.724	179.716	179.195	178.872	178.505	178.061
.31558E+10	178.447	178.441	178.005	177.733	177.425	177.053
.63115E+10	172.112	172.110	171.974	171.888	171.790	171.672
.94673E+10	167.381	167.379	167.287	167.228	167.161	167.081
.12623E+11	164.909	164.908	164.834	164.786	164.732	164.667
.15779E+11	163.305	163.304	163.244	163.204	163.160	163.106
.18935E+11	161.443	161.443	161.393	161.360	161.323	161.279
.22090E+11	159.229	159.229	159.188	159.161	159.130	159.093
.25246E+11	156.806	156.806	156.772	156.750	156.724	156.694
.28402E+11	154.467	154.467	154.439	154.420	154.399	154.374
.31558E+11	152.346	152.346	152.323	152.307	152.290	152.269

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:43 NOV 02, 1995 CP= 36451.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	75.1952	53.0455	52.7693	52.4810
.20000E-05	75.1931	53.0447	52.7685	52.4802
31.558	75.1930	53.0445	52.7683	52.4800
.31558E+07	87.2256	68.3973	68.1304	67.8532
.63116E+07	92.4278	75.1372	74.8784	74.6101
.94673E+07	95.9511	79.7438	79.4922	79.2319
.12623E+08	98.6658	83.3172	83.0722	82.8191
.15779E+08	100.893	86.2592	86.0203	85.7737
.18935E+08	102.793	88.7730	88.5396	88.2990
.22090E+08	104.462	90.9803	90.7521	90.5170
.25246E+08	105.948	92.9389	92.7153	92.4852
.28402E+08	107.294	94.7083	94.4895	94.2640
.31558E+08	108.543	96.3408	96.1264	95.9052
.63115E+08	117.950	108.222	108.037	107.847
.94673E+08	124.646	116.192	116.023	115.850
.12623E+09	130.298	122.662	122.503	122.341
.15779E+09	135.366	128.336	128.184	128.030
.18935E+09	139.703	133.144	132.998	132.850
.22090E+09	143.320	137.137	136.996	136.853
.25246E+09	146.555	140.693	140.556	140.419
.28402E+09	148.981	143.380	143.248	143.114
.31558E+09	150.986	145.612	145.483	145.354
.63115E+09	165.519	161.731	161.632	161.532
.94673E+09	174.968	172.162	172.084	172.006
.12623E+10	178.772	176.589	176.526	176.464
.15779E+10	180.209	178.470	178.420	178.370
.18935E+10	180.563	179.159	179.118	179.078

.22090E+10	180.193	179.046	179.013	178.980
.25246E+10	179.106	178.157	178.129	178.102
.28402E+10	178.057	177.264	177.242	177.219
.31558E+10	177.049	176.381	176.362	176.344
.63115E+10	171.671	171.455	171.449	171.443
.94673E+10	167.080	166.930	166.926	166.922
.12623E+11	164.666	164.543	164.540	164.537
.15779E+11	163.106	163.004	163.001	162.998
.18935E+11	161.279	161.194	161.192	161.189
.22090E+11	159.093	159.022	159.020	159.018
.25246E+11	156.693	156.634	156.632	156.631
.28402E+11	154.374	154.324	154.323	154.321
.31558E+11	152.269	152.227	152.226	152.225

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 36451.800 TIME= 10:35:44
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	8470 TEMP	tt4i045	99.90	31.56	184.3	.1578E+10
3	NSOL	8270 TEMP	tt4o045	99.95	31.56	184.3	.1578E+10
4	NSOL	8272 TEMP	ht4i045	116.6	31.56	188.4	.1262E+10
5	NSOL	8234 TEMP	ct4i045	116.0	31.56	188.7	.1262E+10
6	NSOL	8251 TEMP	ht4o045	99.69	31.56	185.5	.1578E+10
7	NSOL	8242 TEMP	st4i045	67.29	31.56	180.1	.1893E+10
8	NSOL	8460 TEMP	st4o045	67.18	31.56	180.1	.1893E+10
9	NSOL	8556 TEMP	it4i045	47.45	31.56	178.9	.1893E+10
10	NSOL	8566 TEMP	it4o045	47.24	31.56	178.9	.1893E+10
11	NSOL	8691 TEMP	ot4o045	47.02	31.56	178.8	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:46 NOV 02, 1995 CP= 36453.730
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP	8270 TEMP	8272 TEMP	8234 TEMP	8251 TEMP	8242 TEMP
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	tt4i045	tt4o045	ht4i045	ct4i045	ht4o045	st4i045
.10000E-05	99.9039	99.9500	116.576	115.995	99.6886	67.2871
.20000E-05	99.9015	99.9476	116.574	115.993	99.6868	67.2858
31.558	99.9014	99.9475	116.574	115.992	99.6867	67.2857
.31558E+07	110.763	110.808	126.958	126.649	111.267	80.5495
.63116E+07	115.085	115.129	130.834	130.640	115.875	86.3203
.94673E+07	117.856	117.898	133.188	133.066	118.813	90.2416
.12623E+08	119.904	119.945	134.852	134.783	120.978	93.2708
.15779E+08	121.531	121.572	136.126	136.098	122.691	95.7588
.18935E+08	122.888	122.928	137.156	137.161	124.114	97.8823
.22090E+08	124.059	124.098	138.024	138.056	125.338	99.7468
.25246E+08	125.092	125.130	138.780	138.836	126.413	101.403
.28402E+08	126.022	126.060	139.453	139.529	127.379	102.902
.31558E+08	126.887	126.923	140.079	140.173	128.274	104.289
.63115E+08	133.682	133.715	145.263	145.472	135.260	114.583
.94673E+08	138.984	139.014	149.728	150.006	140.679	121.733
.12623E+09	143.745	143.773	153.984	154.315	145.546	127.677
.15779E+09	148.152	148.180	158.034	158.412	150.049	132.961
.18935E+09	151.959	151.986	161.553	161.967	153.930	137.466
.22090E+09	155.127	155.153	164.472	164.912	157.150	141.217
.25246E+09	157.968	157.993	167.087	167.549	160.030	144.566
.28402E+09	160.046	160.070	168.950	169.424	162.122	147.084
.31558E+09	161.732	161.757	170.432	170.913	163.811	149.169
.63115E+09	173.752	173.772	180.713	181.200	175.697	164.255
.94673E+09	181.387	181.402	186.974	187.416	183.087	174.040
.12623E+10	183.873	183.885	188.365	188.735	185.283	178.052
.15779E+10	184.306	184.316	187.928	188.231	185.455	179.636
.18935E+10	183.884	183.892	186.820	187.066	184.816	180.101
.22090E+10	182.905	182.912	185.299	185.498	183.661	179.815
.25246E+10	181.343	181.349	183.309	183.469	181.957	178.793
.28402E+10	179.916	179.921	181.543	181.674	180.419	177.795
.31558E+10	178.608	178.612	179.968	180.076	179.025	176.828
.63115E+10	172.163	172.164	172.584	172.615	172.285	171.599
.94673E+10	167.416	167.417	167.699	167.718	167.494	167.030
.12623E+11	164.937	164.938	165.163	165.178	164.998	164.625
.15779E+11	163.328	163.329	163.514	163.526	163.378	163.072
.18935E+11	161.463	161.463	161.615	161.624	161.502	161.250
.22090E+11	159.245	159.246	159.370	159.378	159.277	159.069
.25246E+11	156.819	156.820	156.922	156.928	156.845	156.673
.28402E+11	154.478	154.479	154.563	154.567	154.499	154.357
.31558E+11	152.355	152.355	152.425	152.429	152.372	152.254

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:46 NOV 02, 1995 CP= 36453.740
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1766	47.4551	47.2434	47.0164
.20000E-05	67.1753	47.4546	47.2429	47.0160
31.558	67.1751	47.4544	47.2428	47.0158
.31558E+07	80.4456	63.8562	63.6529	63.4337
.63116E+07	86.2207	71.0514	70.8547	70.6422
.94673E+07	90.1456	75.9681	75.7772	75.5708
.12623E+08	93.1779	79.7812	79.5955	79.3946
.15779E+08	95.6686	82.9188	82.7378	82.5420
.18935E+08	97.7946	85.5975	85.4209	85.2296
.22090E+08	99.6614	87.9474	87.7748	87.5878
.25246E+08	101.320	90.0296	89.8607	89.6776
.28402E+08	102.821	91.9087	91.7432	91.5637
.31558E+08	104.210	93.6398	93.4775	93.3013
.63115E+08	114.515	106.130	105.991	105.839

.94673E+08	121.671	114.398	114.271	114.132
.12623E+09	127.619	121.056	120.936	120.806
.15779E+09	132.906	126.866	126.752	126.628
.18935E+09	137.414	131.779	131.669	131.550
.22090E+09	141.166	135.855	135.749	135.635
.25246E+09	144.517	139.482	139.380	139.269
.28402E+09	147.037	142.226	142.127	142.019
.31558E+09	149.123	144.507	144.411	144.306
.63115E+09	164.219	160.965	160.890	160.810
.94673E+09	174.012	171.600	171.542	171.479
.12623E+10	178.030	176.153	176.107	176.057
.15779E+10	179.618	178.125	178.088	178.047
.18935E+10	180.086	178.880	178.850	178.817
.22090E+10	179.803	178.819	178.794	178.767
.25246E+10	178.784	177.969	177.949	177.927
.28402E+10	177.787	177.108	177.091	177.073
.31558E+10	176.822	176.250	176.236	176.220
.63115E+10	171.597	171.412	171.408	171.403
.94673E+10	167.028	166.900	166.897	166.894
.12623E+11	164.624	164.519	164.517	164.514
.15779E+11	163.071	162.984	162.982	162.980
.18935E+11	161.249	161.177	161.175	161.174
.22090E+11	159.069	159.008	159.007	159.005
.25246E+11	156.673	156.622	156.621	156.620
.28402E+11	154.356	154.314	154.313	154.312
.31558E+11	152.254	152.218	152.218	152.217

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36453.950 TIME= 10:35:46

NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
 VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2	NSOL	1206 TEMP	t01i135	99.90	31.56	184.3	.1578E+10
3	NSOL	885 TEMP	t01o135	99.94	31.56	184.3	.1578E+10
4	NSOL	887 TEMP	h01i135	116.6	31.56	188.4	.1262E+10
5	NSOL	849 TEMP	c01i135	116.0	31.56	188.7	.1262E+10
6	NSOL	866 TEMP	h01o135	99.64	31.56	185.4	.1578E+10
7	NSOL	857 TEMP	s01i135	67.23	31.56	180.1	.1893E+10
8	NSOL	1196 TEMP	s01o135	67.12	31.56	180.1	.1893E+10
9	NSOL	1394 TEMP	i01i135	47.37	31.56	178.9	.1893E+10
10	NSOL	1404 TEMP	i01o135	47.16	31.56	178.8	.1893E+10
11	NSOL	2146 TEMP	o01o135	46.93	31.56	178.8	.1893E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:48 NOV 02, 1995 CP= 36455.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.8986	99.9446	116.557	115.964	99.6466	67.2339
.20000E-05	99.8962	99.9422	116.555	115.962	99.6449	67.2325
31.558	99.8961	99.9421	116.555	115.962	99.6448	67.2324
.31558E+07	110.758	110.803	126.941	126.621	111.229	80.5005
.63116E+07	115.081	115.125	130.818	130.613	115.838	86.2739
.94673E+07	117.852	117.894	133.172	133.040	118.778	90.1972
.12623E+08	119.900	119.941	134.837	134.758	120.944	93.2281
.15779E+08	121.528	121.568	136.112	136.074	122.659	95.7175
.18935E+08	122.884	122.924	137.142	137.138	124.082	97.8424
.22090E+08	124.056	124.094	138.010	138.034	125.307	99.7081
.25246E+08	125.089	125.127	138.767	138.814	126.383	101.365
.28402E+08	126.019	126.057	139.440	139.508	127.350	102.865
.31558E+08	126.884	126.920	140.066	140.152	128.245	104.253
.63115E+08	133.680	133.712	145.252	145.455	135.236	114.554
.94673E+08	138.981	139.011	149.719	149.990	140.658	121.706
.12623E+09	143.743	143.771	153.975	154.301	145.526	127.652
.15779E+09	148.151	148.178	158.026	158.398	150.031	132.938
.18935E+09	151.957	151.984	161.546	161.954	153.913	137.445
.22090E+09	155.126	155.152	164.465	164.900	157.134	141.196
.25246E+09	157.966	157.992	167.080	167.537	160.014	144.546
.28402E+09	160.044	160.069	168.943	169.412	162.107	147.065
.31558E+09	161.731	161.755	170.425	170.902	163.796	149.151
.63115E+09	173.752	173.771	180.709	181.192	175.686	164.241
.94673E+09	181.386	181.402	186.970	187.410	183.079	174.030
.12623E+10	183.872	183.885	188.362	188.731	185.277	178.044
.15779E+10	184.306	184.316	187.926	188.227	185.449	179.630
.18935E+10	183.883	183.892	186.819	187.063	184.812	180.095
.22090E+10	182.905	182.912	185.298	185.495	183.658	179.811
.25246E+10	181.343	181.348	183.307	183.467	181.954	178.790
.28402E+10	179.916	179.920	181.542	181.672	180.417	177.792
.31558E+10	178.608	178.612	179.967	180.074	179.023	176.826
.63115E+10	172.163	172.164	172.584	172.615	172.285	171.598
.94673E+10	167.416	167.417	167.699	167.718	167.494	167.029
.12623E+11	164.937	164.938	165.163	165.178	164.998	164.625
.15779E+11	163.328	163.329	163.514	163.525	163.377	163.071
.18935E+11	161.463	161.463	161.615	161.624	161.502	161.250
.22090E+11	159.245	159.245	159.370	159.377	159.277	159.069
.25246E+11	156.819	156.820	156.922	156.928	156.845	156.673
.28402E+11	154.478	154.478	154.563	154.567	154.498	154.357
.31558E+11	152.355	152.355	152.425	152.428	152.371	152.254

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:48 NOV 02, 1995 CP= 36455.890
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.1232	47.3744	47.1623	46.9335

.20000E-05	67.1219	47.3739	47.1618	46.9330
31.558	67.1218	47.3737	47.1616	46.9329
.31558E+07	80.3966	63.7853	63.5814	63.3606
.63116E+07	86.1742	70.9853	70.7882	70.5741
.94673E+07	90.1011	75.9056	75.7143	75.5063
.12623E+08	93.1351	79.7217	79.5356	79.3331
.15779E+08	95.6273	82.8618	82.6804	82.4830
.18935E+08	97.7547	85.5426	85.3657	85.1729
.22090E+08	99.6227	87.8945	87.7215	87.5331
.25246E+08	101.282	89.9783	89.8090	89.6245
.28402E+08	102.784	91.8590	91.6931	91.5122
.31558E+08	104.174	93.5914	93.4288	93.2512
.63115E+08	114.486	106.091	105.951	105.798
.94673E+08	121.644	114.363	114.236	114.096
.12623E+09	127.594	121.024	120.904	120.773
.15779E+09	132.883	126.837	126.722	126.598
.18935E+09	137.392	131.751	131.641	131.522
.22090E+09	141.145	135.829	135.723	135.608
.25246E+09	144.497	139.457	139.354	139.243
.28402E+09	147.017	142.202	142.103	141.994
.31558E+09	149.104	144.484	144.387	144.282
.63115E+09	164.205	160.948	160.874	160.793
.94673E+09	174.001	171.587	171.529	171.466
.12623E+10	178.022	176.143	176.097	176.046
.15779E+10	179.612	178.117	178.080	178.039
.18935E+10	180.081	178.874	178.844	178.811
.22090E+10	179.799	178.813	178.789	178.762
.25246E+10	178.780	177.965	177.944	177.922
.28402E+10	177.784	177.104	177.087	177.069
.31558E+10	176.819	176.247	176.233	176.217
.63115E+10	171.596	171.412	171.407	171.402
.94673E+10	167.028	166.899	166.896	166.893
.12623E+11	164.624	164.519	164.516	164.514
.15779E+11	163.070	162.983	162.981	162.979
.18935E+11	161.249	161.177	161.175	161.173
.22090E+11	159.068	159.008	159.006	159.005
.25246E+11	156.673	156.622	156.621	156.620
.28402E+11	154.356	154.314	154.313	154.312
.31558E+11	152.254	152.218	152.217	152.217

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 36456.110 TIME= 10:35:48
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135

VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135

VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135

VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135

VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135

VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135

VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135

VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135

VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135

VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135
 VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135
 VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135
 VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135
 VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2751 TEMP	ot1o135	32.43	.1000E-05	178.0	.2209E+10
3 NSOL	2714 TEMP	ot1i135	32.47	.1000E-05	178.0	.2209E+10
4 NSOL	1968 TEMP	it1o135	44.59	31.56	178.8	.1893E+10
5 NSOL	1931 TEMP	it1i135	44.60	31.56	178.8	.1893E+10
6 NSOL	1088 TEMP	st1o135	46.39	31.56	178.8	.1893E+10
7 NSOL	1082 TEMP	st1i135	46.41	31.56	178.8	.1893E+10
8 NSOL	849 TEMP	ht1i135	116.0	31.56	188.7	.1262E+10
9 NSOL	853 TEMP	gt1i135	123.2	31.56	189.8	.1262E+10
10 NSOL	1 TEMP	c01i135	130.4	31.56	190.9	.1262E+10
11 NSOL	683 TEMP	gb1i135	131.7	31.56	190.9	.1262E+10
12 NSOL	684 TEMP	gb1h135	130.1	31.56	191.0	.1262E+10
13 NSOL	679 TEMP	sb1i135	87.40	31.56	182.0	.1893E+10
14 NSOL	962 TEMP	sb1o135	87.11	31.56	182.0	.1893E+10
15 NSOL	1640 TEMP	ib1i135	57.84	31.56	179.8	.1893E+10
16 NSOL	1677 TEMP	ib1o135	57.18	31.56	179.7	.1893E+10
17 NSOL	2751 TEMP	ob1o135	32.43	.1000E-05	178.0	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:51 NOV 02, 1995 CP= 36459.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.4341	32.4728	44.5884	44.6034	46.3906	46.4115
.20000E-05	32.4342	32.4729	44.5881	44.6031	46.3901	46.4111
31.558	32.4342	32.4729	44.5879	44.6030	46.3899	46.4109
.31558E+07	50.9159	50.9492	61.6320	61.6437	62.7802	62.7985
.63116E+07	59.1193	59.1500	69.0956	69.1058	70.0061	70.0232
.94673E+07	64.7616	64.7904	74.1903	74.1995	74.9566	74.9727
.12623E+08	69.1559	69.1832	78.1381	78.1465	78.8023	78.8176
.15779E+08	72.7802	72.8062	81.3839	81.3917	81.9704	81.9851
.18935E+08	75.8780	75.9030	84.1528	84.1601	84.6775	84.6917
.22090E+08	78.5963	78.6203	86.5799	86.5867	87.0538	87.0675
.25246E+08	81.0023	81.0254	88.7285	88.7350	89.1603	89.1735
.28402E+08	83.1713	83.1937	90.6660	90.6721	91.0620	91.0748
.31558E+08	85.1647	85.1864	92.4493	92.4552	92.8143	92.8267
.63115E+08	99.3336	99.3510	105.256	105.260	105.449	105.459
.94673E+08	108.467	108.482	113.683	113.686	113.800	113.809
.12623E+09	115.672	115.686	120.443	120.446	120.514	120.522
.15779E+09	121.885	121.897	126.329	126.331	126.368	126.375
.18935E+09	127.110	127.122	131.298	131.300	131.314	131.321
.22090E+09	131.438	131.450	135.418	135.420	135.418	135.425
.25246E+09	135.281	135.292	139.082	139.083	139.069	139.076
.28402E+09	138.203	138.213	141.854	141.855	141.833	141.839
.31558E+09	140.638	140.648	144.158	144.159	144.130	144.136
.63115E+09	158.203	158.210	160.759	160.759	160.704	160.708
.94673E+09	169.538	169.543	171.466	171.467	171.410	171.413

.12623E+10	174.545	174.549	176.055	176.055	176.006	176.009
.15779E+10	176.846	176.849	178.048	178.048	178.008	178.010
.18935E+10	177.848	177.851	178.819	178.819	178.786	178.787
.22090E+10	177.977	177.980	178.768	178.768	178.741	178.742
.25246E+10	177.275	177.276	177.926	177.926	177.904	177.905
.28402E+10	176.530	176.531	177.071	177.071	177.053	177.054
.31558E+10	175.764	175.765	176.218	176.218	176.204	176.204
.63115E+10	171.257	171.258	171.401	171.401	171.397	171.398
.94673E+10	166.793	166.793	166.892	166.892	166.889	166.889
.12623E+11	164.432	164.432	164.512	164.512	164.510	164.511
.15779E+11	162.911	162.912	162.978	162.978	162.976	162.977
.18935E+11	161.117	161.117	161.172	161.172	161.171	161.171
.22090E+11	158.958	158.958	159.004	159.004	159.003	159.003
.25246E+11	156.580	156.580	156.619	156.619	156.618	156.618
.28402E+11	154.279	154.279	154.311	154.311	154.310	154.310
.31558E+11	152.189	152.189	152.216	152.216	152.215	152.215

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:51 NOV 02, 1995 CP= 36459.250
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sbt1i135
.10000E-05	115.964	123.213	130.401	131.698	130.093	87.3994
.20000E-05	115.962	123.211	130.399	131.695	130.091	87.3969
31.558	115.962	123.211	130.399	131.695	130.091	87.3968
.31558E+07	126.621	133.144	139.602	140.665	139.385	98.6080
.63116E+07	130.613	136.756	142.835	143.796	142.656	103.294
.94673E+07	133.040	138.897	144.693	145.585	144.539	106.402
.12623E+08	134.758	140.379	145.942	146.781	145.807	108.759
.15779E+08	136.074	141.493	146.856	147.651	146.735	110.671
.18935E+08	137.138	142.378	147.566	148.325	147.458	112.290
.22090E+08	138.034	143.116	148.147	148.873	148.049	113.704
.25246E+08	138.814	143.754	148.645	149.343	148.556	114.959
.28402E+08	139.508	144.319	149.083	149.756	149.002	116.094
.31558E+08	140.152	144.845	149.493	150.143	149.419	117.149
.63115E+08	145.455	149.363	153.234	153.736	153.218	125.244
.94673E+08	149.990	153.479	156.936	157.361	156.965	131.243
.12623E+09	154.301	157.518	160.705	161.077	160.770	136.448
.15779E+09	158.398	161.412	164.397	164.729	164.494	141.184
.18935E+09	161.954	164.807	167.632	167.933	167.756	145.257
.22090E+09	164.900	167.621	170.315	170.592	170.459	148.652
.25246E+09	167.537	170.144	172.723	172.980	172.884	151.693
.28402E+09	169.412	171.923	174.407	174.648	174.579	153.951
.31558E+09	170.902	173.327	175.726	175.954	175.905	155.805
.63115E+09	181.192	182.984	184.756	184.898	184.961	169.167
.94673E+09	187.410	188.777	190.129	190.225	190.324	177.792
.12623E+10	188.731	189.809	190.877	190.949	191.042	181.010
.15779E+10	188.227	189.092	189.949	190.006	190.082	182.004
.18935E+10	187.063	187.765	188.460	188.507	188.567	182.018
.22090E+10	185.495	186.070	186.639	186.678	186.724	181.381
.25246E+10	183.467	183.942	184.414	184.446	184.481	180.087
.28402E+10	181.672	182.069	182.462	182.490	182.516	178.872
.31558E+10	180.074	180.408	180.739	180.763	180.783	177.733
.63115E+10	172.615	172.722	172.828	172.837	172.840	171.888
.94673E+10	167.718	167.792	167.865	167.872	167.872	167.228
.12623E+11	165.178	165.238	165.298	165.303	165.303	164.786
.15779E+11	163.525	163.575	163.624	163.629	163.628	163.204
.18935E+11	161.624	161.665	161.706	161.710	161.709	161.360
.22090E+11	159.377	159.412	159.446	159.449	159.448	159.161
.25246E+11	156.928	156.957	156.985	156.988	156.987	156.750
.28402E+11	154.567	154.591	154.615	154.617	154.616	154.420

1 .31558E+11 152.428 152.448 152.468 152.470 152.469 152.307

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:51 NOV 02, 1995 CP= 36459.260
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	87.1082	57.8434	57.1854	32.4341
.20000E-05	87.1057	57.8424	57.1845	32.4342
31.558	87.1056	57.8421	57.1842	32.4342
.31558E+07	98.3292	72.9842	72.3467	50.9159
.63116E+07	103.025	79.5567	78.9380	59.1193
.94673E+07	106.141	84.0180	83.4163	64.7616
.12623E+08	108.506	87.4616	86.8756	69.1559
.15779E+08	110.425	90.2865	89.7148	72.7802
.18935E+08	112.050	92.6937	92.1353	75.8780
.22090E+08	113.469	94.8028	94.2574	78.5963
.25246E+08	114.729	96.6715	96.1382	81.0023
.28402E+08	115.869	98.3585	97.8364	83.1713
.31558E+08	116.929	99.9150	99.4033	85.1647
.63115E+08	125.053	111.264	110.822	99.3336
.94673E+08	131.068	118.956	118.550	108.467
.12623E+09	136.283	125.252	124.868	115.672
.15779E+09	141.026	130.798	130.431	121.885
.18935E+09	145.104	135.503	135.151	127.110
.22090E+09	148.503	139.410	139.069	131.438
.25246E+09	151.548	142.891	142.560	135.281
.28402E+09	153.811	145.511	145.189	138.203
.31558E+09	155.668	147.682	147.369	140.638
.63115E+09	169.059	163.315	163.072	158.203
.94673E+09	177.707	173.397	173.205	169.538
.12623E+10	180.942	177.568	177.415	174.545
.15779E+10	181.949	179.255	179.132	176.846
.18935E+10	181.973	179.793	179.693	177.848
.22090E+10	181.345	179.563	179.481	177.977
.25246E+10	180.057	178.582	178.515	177.275
.28402E+10	178.847	177.617	177.561	176.530
.31558E+10	177.712	176.677	176.630	175.764
.63115E+10	171.881	171.547	171.533	171.257
.94673E+10	167.224	166.992	166.983	166.793
.12623E+11	164.783	164.594	164.586	164.432
.15779E+11	163.201	163.045	163.039	162.911
.18935E+11	161.358	161.228	161.223	161.117
.22090E+11	159.159	159.050	159.046	158.958
.25246E+11	156.748	156.657	156.654	156.580
.28402E+11	154.419	154.343	154.340	154.279
.31558E+11	152.306	152.243	152.240	152.189

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 36459.460 TIME= 10:35:51
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045
 VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045
 VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045
 VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045
 VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045
 VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9855 TEMP	ot4o045	32.45	.1000E-05	178.0	.2209E+10
3 NSOL	9818 TEMP	ot4i045	32.49	.1000E-05	178.0	.2209E+10
4 NSOL	9546 TEMP	it4o045	44.61	31.56	178.8	.1893E+10
5 NSOL	9509 TEMP	it4i045	44.62	31.56	178.8	.1893E+10
6 NSOL	8352 TEMP	st4o045	46.41	31.56	178.8	.1893E+10
7 NSOL	8346 TEMP	st4i045	46.43	31.56	178.8	.1893E+10
8 NSOL	8234 TEMP	ht4i045	116.0	31.56	188.7	.1262E+10
9 NSOL	8238 TEMP	gt4i045	123.2	31.56	189.8	.1262E+10
10 NSOL	7642 TEMP	c04i045	130.4	31.56	190.9	.1262E+10
11 NSOL	7654 TEMP	gb4i045	131.7	31.56	191.0	.1262E+10
12 NSOL	7655 TEMP	gb4h045	130.1	31.56	191.0	.1262E+10
13 NSOL	7650 TEMP	sb4i045	87.43	31.56	182.0	.1893E+10
14 NSOL	7871 TEMP	sb4o045	87.14	31.56	182.0	.1893E+10
15 NSOL	8934 TEMP	ib4i045	57.89	31.56	179.8	.1893E+10
16 NSOL	8971 TEMP	ib4o045	57.23	31.56	179.7	.1893E+10
17 NSOL	9855 TEMP	ob4o045	32.45	.1000E-05	178.0	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:55 NOV 02, 1995 CP= 36462.740
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.4519	32.4902	44.6065	44.6215	46.4102	46.4312
.20000E-05	32.4520	32.4904	44.6062	44.6212	46.4097	46.4307
31.558	32.4520	32.4903	44.6060	44.6211	46.4096	46.4306
.31558E+07	50.9303	50.9633	61.6473	61.6590	62.7968	62.8152
.63116E+07	59.1321	59.1625	69.1096	69.1198	70.0214	70.0384
.94673E+07	64.7734	64.8020	74.2033	74.2125	74.9709	74.9870
.12623E+08	69.1669	69.1939	78.1504	78.1588	78.8158	78.8311
.15779E+08	72.7906	72.8164	81.3956	81.4034	81.9832	81.9980

.18935E+08	75.8879	75.9126	84.1640	84.1713	84.6898	84.7039
.22090E+08	78.6056	78.6294	86.5906	86.5975	87.0656	87.0792
.25246E+08	81.0112	81.0341	88.7389	88.7453	89.1716	89.1848
.28402E+08	83.1799	83.2020	90.6760	90.6822	91.0730	91.0858
.31558E+08	85.1729	85.1944	92.4590	92.4649	92.8248	92.8373
.63115E+08	99.3399	99.3571	105.263	105.267	105.457	105.467
.94673E+08	108.472	108.487	113.689	113.693	113.807	113.816
.12623E+09	115.677	115.690	120.449	120.452	120.521	120.529
.15779E+09	121.889	121.902	126.334	126.337	126.374	126.381
.18935E+09	127.114	127.126	131.303	131.305	131.320	131.327
.22090E+09	131.442	131.453	135.423	135.425	135.424	135.430
.25246E+09	135.284	135.295	139.087	139.088	139.074	139.081
.28402E+09	138.206	138.216	141.858	141.860	141.837	141.844
.31558E+09	140.641	140.651	144.162	144.163	144.135	144.141
.63115E+09	158.205	158.212	160.762	160.762	160.707	160.711
.94673E+09	169.539	169.544	171.469	171.469	171.412	171.416
.12623E+10	174.546	174.550	176.057	176.057	176.008	176.011
.15779E+10	176.847	176.850	178.050	178.050	178.009	178.012
.18935E+10	177.849	177.852	178.820	178.820	178.787	178.788
.22090E+10	177.978	177.980	178.769	178.769	178.742	178.743
.25246E+10	177.275	177.277	177.927	177.927	177.905	177.906
.28402E+10	176.530	176.531	177.072	177.072	177.054	177.055
.31558E+10	175.764	175.765	176.219	176.219	176.204	176.205
.63115E+10	171.257	171.258	171.402	171.402	171.397	171.398
.94673E+10	166.793	166.793	166.892	166.892	166.889	166.890
.12623E+11	164.432	164.432	164.512	164.513	164.511	164.511
.15779E+11	162.912	162.912	162.978	162.978	162.976	162.977
.18935E+11	161.117	161.117	161.172	161.172	161.171	161.171
.22090E+11	158.958	158.958	159.004	159.004	159.003	159.003
.25246E+11	156.580	156.581	156.619	156.619	156.618	156.618
.28402E+11	154.279	154.279	154.311	154.311	154.310	154.310
.31558E+11	152.189	152.189	152.216	152.216	152.215	152.215

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:55 NOV 02, 1995 CP= 36462.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.995	123.245	130.434	131.730	130.125	87.4343
.20000E-05	115.993	123.243	130.431	131.727	130.123	87.4318
31.558	115.992	123.242	130.431	131.727	130.123	87.4317
.31558E+07	126.649	133.173	139.632	140.696	139.414	98.6405
.63116E+07	130.640	136.784	142.864	143.825	142.684	103.325
.94673E+07	133.066	138.924	144.721	145.613	144.567	106.431
.12623E+08	134.783	140.405	145.969	146.808	145.833	108.788
.15779E+08	136.098	141.517	146.882	147.677	146.761	110.699
.18935E+08	137.161	142.402	147.592	148.350	147.483	112.317
.22090E+08	138.056	143.139	148.171	148.898	148.073	113.730
.25246E+08	138.836	143.776	148.669	149.367	148.579	114.984
.28402E+08	139.529	144.341	149.107	149.779	149.025	116.119
.31558E+08	140.173	144.867	149.516	150.166	149.442	117.173
.63115E+08	145.472	149.381	153.253	153.756	153.237	125.264
.94673E+08	150.006	153.496	156.954	157.378	156.981	131.262
.12623E+09	154.315	157.533	160.721	161.093	160.786	136.465
.15779E+09	158.412	161.426	164.412	164.744	164.509	141.200
.18935E+09	161.967	164.821	167.646	167.948	167.770	145.272
.22090E+09	164.912	167.634	170.328	170.606	170.472	148.666
.25246E+09	167.549	170.156	172.736	172.993	172.897	151.706
.28402E+09	169.424	171.935	174.420	174.661	174.591	153.965
.31558E+09	170.913	173.338	175.738	175.966	175.917	155.818
.63115E+09	181.200	182.993	184.766	184.908	184.970	169.177

.94673E+09	187.416	188.783	190.136	190.232	190.331	177.800
.12623E+10	188.735	189.815	190.883	190.955	191.047	181.016
.15779E+10	188.231	189.096	189.954	190.011	190.087	182.009
.18935E+10	187.066	187.768	188.464	188.510	188.570	182.021
.22090E+10	185.498	186.072	186.642	186.681	186.727	181.384
.25246E+10	183.469	183.945	184.416	184.449	184.484	180.089
.28402E+10	181.674	182.071	182.464	182.492	182.518	178.874
.31558E+10	180.076	180.410	180.741	180.765	180.784	177.735
.63115E+10	172.615	172.722	172.829	172.837	172.840	171.888
.94673E+10	167.718	167.792	167.866	167.872	167.872	167.229
.12623E+11	165.178	165.238	165.298	165.303	165.303	164.786
.15779E+11	163.526	163.575	163.625	163.629	163.628	163.205
.18935E+11	161.624	161.665	161.706	161.710	161.709	161.361
.22090E+11	159.378	159.412	159.446	159.449	159.448	159.161
.25246E+11	156.928	156.957	156.985	156.988	156.987	156.750
.28402E+11	154.567	154.591	154.615	154.618	154.616	154.421
.31558E+11	152.429	152.449	152.468	152.470	152.469	152.307

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:55 NOV 02, 1995 CP= 36462.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	87.1432	57.8927	57.2349	32.4519
.20000E-05	87.1407	57.8916	57.2339	32.4520
31.558	87.1406	57.8914	57.2337	32.4520
.31558E+07	98.3616	73.0282	72.3909	50.9303
.63116E+07	103.056	79.5979	78.9794	59.1321
.94673E+07	106.171	84.0572	83.4557	64.7734
.12623E+08	108.535	87.4990	86.9132	69.1669
.15779E+08	110.453	90.3224	89.7510	72.7906
.18935E+08	112.077	92.7284	92.1702	75.8879
.22090E+08	113.495	94.8364	94.2911	78.6056
.25246E+08	114.755	96.7040	96.1709	81.0112
.28402E+08	115.894	98.3901	97.8682	83.1799
.31558E+08	116.953	99.9457	99.4342	85.1729
.63115E+08	125.074	111.289	110.847	99.3399
.94673E+08	131.086	118.979	118.572	108.472
.12623E+09	136.300	125.272	124.889	115.677
.15779E+09	141.042	130.817	130.451	121.889
.18935E+09	145.119	135.522	135.169	127.114
.22090E+09	148.518	139.428	139.087	131.442
.25246E+09	151.562	142.908	142.577	135.284
.28402E+09	153.824	145.527	145.205	138.206
.31558E+09	155.681	147.697	147.385	140.641
.63115E+09	169.069	163.327	163.083	158.205
.94673E+09	177.714	173.405	173.213	169.539
.12623E+10	180.948	177.575	177.422	174.546
.15779E+10	181.954	179.261	179.137	176.847
.18935E+10	181.977	179.797	179.698	177.849
.22090E+10	181.348	179.566	179.485	177.978
.25246E+10	180.059	178.585	178.518	177.275
.28402E+10	178.849	177.619	177.564	176.530
.31558E+10	177.714	176.679	176.632	175.764
.63115E+10	171.882	171.548	171.534	171.257
.94673E+10	167.224	166.993	166.983	166.793
.12623E+11	164.783	164.594	164.587	164.432
.15779E+11	163.202	163.046	163.039	162.912
.18935E+11	161.358	161.228	161.223	161.117
.22090E+11	159.159	159.051	159.046	158.958
.25246E+11	156.748	156.657	156.654	156.580
.28402E+11	154.419	154.343	154.340	154.279

.31558E+11 152.306 152.243 152.240 152.189

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 36462.970 TIME= 10:35:55
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise

VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise

VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise

VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise

VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise

VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise

VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise

VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise

VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise

VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise

VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise

VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise

VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise

VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise

VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	2763 TEMP	ot1oise	31.60	.1000E-05	177.9 .2209E+10
3	NSOL	2726 TEMP	ot1iise	31.63	.1000E-05	177.9 .2209E+10
4	NSOL	1980 TEMP	it1oise	50.28	31.56	179.4 .1893E+10
5	NSOL	1943 TEMP	it1iise	50.33	31.56	179.4 .1893E+10
6	NSOL	1281 TEMP	st1oise	56.93	31.56	179.9 .1893E+10
7	NSOL	1247 TEMP	st1iise	57.44	31.56	179.9 .1893E+10
8	NSOL	1206 TEMP	ht1iise	99.90	31.56	184.3 .1578E+10
9	NSOL	1207 TEMP	gt1iise	116.3	31.56	186.7 .1262E+10
10	NSOL	63 TEMP	c01iise	124.2	.2000E-05	188.1 .1262E+10
11	NSOL	1034 TEMP	gb1iise	125.3	.2000E-05	188.2 .1262E+10
12	NSOL	1035 TEMP	gb1hise	117.4	.2000E-05	186.7 .1262E+10
13	NSOL	1033 TEMP	sb1iise	98.47	31.56	183.9 .1578E+10
14	NSOL	1071 TEMP	sb1oise	97.78	31.56	183.7 .1578E+10
15	NSOL	1652 TEMP	ib1iise	61.23	31.56	180.3 .1893E+10
16	NSOL	1689 TEMP	ib1oise	60.47	31.56	180.2 .1893E+10
17	NSOL	2763 TEMP	ob1oise	31.60	.1000E-05	177.9 .2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:58 NOV 02, 1995 CP= 36466.100
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP otloise	2726 TEMP otliise	1980 TEMP itloise	1943 TEMP itliise	1281 TEMP stloise	1247 TEMP stliise
.10000E-05	31.6000	31.6283	50.2849	50.3334	56.9320	57.4364
.20000E-05	31.6002	31.6285	50.2843	50.3329	56.9310	57.4354
31.558	31.6001	31.6284	50.2841	50.3327	56.9308	57.4352
.31558E+07	50.2138	50.2375	66.7903	66.8347	72.3533	72.8316
.63116E+07	58.4793	58.5009	73.9559	73.9980	79.0465	79.5072
.94673E+07	64.1657	64.1858	78.8220	78.8622	83.5848	84.0305
.12623E+08	68.5948	68.6136	82.5791	82.6177	87.0844	87.5168
.15779E+08	72.2480	72.2658	85.6604	85.6977	89.9535	90.3738
.18935E+08	75.3705	75.3875	88.2844	88.3205	92.3962	92.8057
.22090E+08	78.1102	78.1265	90.5819	90.6169	94.5353	94.9347
.25246E+08	80.5350	80.5506	92.6150	92.6491	96.4291	96.8192
.28402E+08	82.7207	82.7357	94.4476	94.4808	98.1373	98.5189
.31558E+08	84.7291	84.7437	96.1335	96.1659	99.7119	100.086
.63115E+08	98.9922	99.0036	108.304	108.331	111.181	111.502
.94673E+08	108.173	108.183	116.408	116.433	118.931	119.226
.12623E+09	115.408	115.417	122.966	122.988	125.267	125.545
.15779E+09	121.643	121.651	128.701	128.722	130.842	131.108
.18935E+09	126.885	126.893	133.553	133.573	135.569	135.826
.22090E+09	131.227	131.234	137.576	137.595	139.491	139.740
.25246E+09	135.081	135.088	141.155	141.173	142.984	143.226
.28402E+09	138.012	138.018	143.854	143.872	145.611	145.847
.31558E+09	140.455	140.461	146.094	146.111	147.787	148.017
.63115E+09	158.076	158.080	162.203	162.216	163.440	163.620
.94673E+09	169.445	169.448	172.576	172.586	173.513	173.656
.12623E+10	174.473	174.476	176.930	176.938	177.666	177.780
.15779E+10	176.789	176.791	178.747	178.754	179.334	179.426
.18935E+10	177.803	177.804	179.383	179.388	179.857	179.932
.22090E+10	177.940	177.941	179.228	179.232	179.614	179.675
.25246E+10	177.244	177.245	178.305	178.308	178.624	178.673
.28402E+10	176.504	176.505	177.385	177.388	177.651	177.692
.31558E+10	175.742	175.743	176.482	176.484	176.704	176.739
.63115E+10	171.250	171.250	171.484	171.485	171.555	171.566
.94673E+10	166.788	166.788	166.949	166.949	166.997	167.004
.12623E+11	164.428	164.428	164.558	164.559	164.598	164.603
.15779E+11	162.908	162.908	163.016	163.016	163.048	163.053
.18935E+11	161.114	161.114	161.203	161.204	161.230	161.234
.22090E+11	158.956	158.956	159.030	159.030	159.052	159.055
.25246E+11	156.578	156.579	156.640	156.640	156.659	156.661
.28402E+11	154.277	154.277	154.329	154.329	154.344	154.346
.31558E+11	152.188	152.188	152.230	152.230	152.243	152.245

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:58 NOV 02, 1995 CP= 36466.110
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP htliise	1207 TEMP gtliise	63 TEMP c0liise	1034 TEMP gbliise	1035 TEMP gbliise	1033 TEMP sbliise
.10000E-05	99.8986	116.308	124.167	125.260	117.371	98.4690
.20000E-05	99.8962	116.306	124.165	125.257	117.368	98.4661
31.558	99.8961	116.306	124.165	125.257	117.368	98.4659
.31558E+07	110.758	125.779	132.972	133.886	126.513	109.115
.63116E+07	115.081	129.344	136.177	137.014	129.951	113.400
.94673E+07	117.852	131.529	138.085	138.869	132.057	116.170
.12623E+08	119.900	133.086	139.411	140.155	133.558	118.229

.15779E+08	121.528	134.288	140.412	141.123	134.716	119.873
.18935E+08	122.884	135.268	141.213	141.895	135.659	121.249
.22090E+08	124.056	136.099	141.884	142.541	136.460	122.440
.25246E+08	125.089	136.827	142.468	143.103	137.162	123.494
.28402E+08	126.019	137.479	142.989	143.604	137.792	124.444
.31558E+08	126.884	138.087	143.476	144.073	138.380	125.328
.63115E+08	133.680	143.161	147.733	148.211	143.327	132.266
.94673E+08	138.981	147.535	151.664	152.079	147.638	137.655
.12623E+09	143.743	151.693	155.535	155.906	151.754	142.475
.15779E+09	148.151	155.650	159.276	159.615	155.680	146.929
.18935E+09	151.957	159.098	162.552	162.865	159.105	150.775
.22090E+09	155.126	161.969	165.280	165.573	161.959	153.980
.25246E+09	157.966	164.549	167.734	168.011	164.525	156.852
.28402E+09	160.044	166.404	169.483	169.746	166.371	158.960
.31558E+09	161.731	167.889	170.872	171.123	167.850	160.675
.63115E+09	173.752	178.390	180.643	180.816	178.322	172.926
.94673E+09	181.386	184.969	186.712	186.838	184.898	180.737
.12623E+10	183.872	186.717	188.103	188.202	186.656	183.354
.15779E+10	184.306	186.595	187.713	187.792	186.545	183.888
.18935E+10	183.883	185.744	186.653	186.718	185.703	183.544
.22090E+10	182.905	184.429	185.175	185.228	184.396	182.627
.25246E+10	181.343	182.604	183.222	183.267	182.577	181.113
.28402E+10	179.916	180.968	181.483	181.521	180.946	179.724
.31558E+10	178.608	179.493	179.927	179.959	179.475	178.447
.63115E+10	172.163	172.446	172.585	172.596	172.441	172.112
.94673E+10	167.416	167.611	167.706	167.714	167.608	167.381
.12623E+11	164.937	165.095	165.172	165.179	165.093	164.909
.15779E+11	163.328	163.459	163.523	163.528	163.457	163.305
.18935E+11	161.463	161.570	161.624	161.628	161.569	161.443
.22090E+11	159.245	159.335	159.379	159.383	159.334	159.229
.25246E+11	156.819	156.894	156.931	156.934	156.893	156.806
.28402E+11	154.478	154.540	154.571	154.574	154.540	154.467
.31558E+11	152.355	152.407	152.432	152.435	152.407	152.346

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:35:58 NOV 02, 1995 CP= 36466.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP	1652 TEMP	1689 TEMP	2763 TEMP
	sbloise	ib1iise	ibloise	obloise
.10000E-05	97.7819	61.2317	60.4718	31.6000
.20000E-05	97.7789	61.2306	60.4706	31.6002
31.558	97.7788	61.2303	60.4704	31.6001
.31558E+07	108.449	76.2567	75.5109	50.2138
.63116E+07	112.754	82.7220	81.9947	58.4793
.94673E+07	115.541	87.0867	86.3773	64.1657
.12623E+08	117.617	90.4422	89.7499	68.5948
.15779E+08	119.277	93.1867	92.5102	72.2480
.18935E+08	120.666	95.5190	94.8585	75.3705
.22090E+08	121.871	97.5592	96.9138	78.1102
.25246E+08	122.936	99.3656	98.7340	80.5350
.28402E+08	123.897	100.995	100.376	82.7207
.31558E+08	124.791	102.497	101.890	84.7291
.63115E+08	131.797	113.472	112.943	98.9922
.94673E+08	137.221	120.974	120.485	108.173
.12623E+09	142.062	127.152	126.688	115.408
.15779E+09	146.531	132.613	132.168	121.643
.18935E+09	150.390	137.252	136.821	126.885
.22090E+09	153.604	141.102	140.683	131.227
.25246E+09	156.486	144.532	144.125	135.081
.28402E+09	158.602	147.105	146.709	138.012
.31558E+09	160.326	149.234	148.847	140.455
.63115E+09	172.647	164.520	164.215	158.076

.94673E+09	180.514	174.344	174.101	169.445
.12623E+10	183.176	178.322	178.127	174.473
.15779E+10	183.744	179.859	179.703	176.789
.18935E+10	183.427	180.281	180.155	177.803
.22090E+10	182.532	179.960	179.857	177.940
.25246E+10	181.035	178.908	178.824	177.244
.28402E+10	179.659	177.887	177.817	176.504
.31558E+10	178.393	176.902	176.844	175.742
.63115E+10	172.095	171.618	171.600	171.250
.94673E+10	167.370	167.040	167.028	166.788
.12623E+11	164.900	164.632	164.622	164.428
.15779E+11	163.298	163.076	163.068	162.908
.18935E+11	161.437	161.254	161.247	161.114
.22090E+11	159.224	159.071	159.066	158.956
.25246E+11	156.802	156.675	156.670	156.578
.28402E+11	154.464	154.358	154.354	154.277
.31558E+11	152.343	152.254	152.251	152.188

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 36466.340 TIME= 10:35:58
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
 VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2 NSOL	2682 TEMP	ot1oose	34.53	.1000E-05	178.1	.2209E+10
3 NSOL	2673 TEMP	ot1oose	34.62	31.56	178.1	.2209E+10
4 NSOL	1899 TEMP	it1oose	36.16	31.56	178.2	.2209E+10
5 NSOL	1794 TEMP	it1oose	36.12	31.56	178.2	.2209E+10
6 NSOL	1276 TEMP	st1oose	43.11	31.56	178.5	.2209E+10
7 NSOL	1233 TEMP	st1oose	43.14	31.56	178.5	.2209E+10
8 NSOL	1196 TEMP	ht1oose	67.12	31.56	180.1	.1893E+10

9 NSOL	1197 TEMP	gtl1ose	81.47	31.56	181.3	.1893E+10
10 NSOL	58 TEMP	c0l1ose	86.09	31.56	181.6	.1893E+10
11 NSOL	1019 TEMP	gb11ose	87.56	31.56	181.7	.1893E+10
12 NSOL	1020 TEMP	gb1hose	84.42	31.56	181.4	.1893E+10
13 NSOL	1018 TEMP	sb11ose	75.19	31.56	180.6	.1893E+10
14 NSOL	1066 TEMP	sb1oose	75.06	31.56	180.5	.1893E+10
15 NSOL	1529 TEMP	ib11ose	52.93	31.56	179.1	.1893E+10
16 NSOL	1608 TEMP	ib1oose	52.73	31.56	179.1	.1893E+10
17 NSOL	2682 TEMP	ob1oose	34.53	.1000E-05	178.1	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:01 NOV 02, 1995 CP= 36469.470
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1oose	2673 TEMP ot1oose	1899 TEMP it1oose	1794 TEMP it1oose	1276 TEMP st1oose	1233 TEMP st1oose
.10000E-05	34.5328	34.6219	36.1593	36.1183	43.1104	43.1399
.20000E-05	34.5329	34.6220	36.1594	36.1184	43.1101	43.1395
31.558	34.5328	34.6219	36.1593	36.1183	43.1100	43.1394
.31558E+07	52.7160	52.7957	54.1615	54.1270	59.8090	59.8326
.63116E+07	60.7750	60.8497	62.1266	62.0952	67.2092	67.2302
.94673E+07	66.3136	66.3845	67.5951	67.5660	72.2921	72.3113
.12623E+08	70.6249	70.6927	71.8491	71.8218	76.2486	76.2664
.15779E+08	74.1799	74.2451	75.3552	75.3295	79.5123	79.5290
.18935E+08	77.2182	77.2811	78.3509	78.3265	82.3036	82.3194
.22090E+08	79.8841	79.9450	80.9791	80.9558	84.7553	84.7703
.25246E+08	82.2443	82.3034	83.3058	83.2835	86.9289	86.9433
.28402E+08	84.3723	84.4297	85.4036	85.3822	88.8914	88.9051
.31558E+08	86.3286	86.3846	87.3325	87.3119	90.6989	90.7120
.63115E+08	100.264	100.311	101.091	101.075	103.702	103.712
.94673E+08	109.276	109.317	110.007	109.994	112.243	112.251
.12623E+09	116.404	116.442	117.076	117.064	119.077	119.083
.15779E+09	122.561	122.596	123.189	123.178	125.018	125.024
.18935E+09	127.743	127.776	128.336	128.327	130.035	130.040
.22090E+09	132.036	132.068	132.602	132.594	134.196	134.200
.25246E+09	135.849	135.880	136.391	136.383	137.897	137.901
.28402E+09	138.747	138.776	139.268	139.260	140.703	140.706
.31558E+09	141.161	141.189	141.664	141.657	143.038	143.041
.63115E+09	158.574	158.595	158.944	158.940	159.896	159.897
.94673E+09	169.814	169.830	170.096	170.093	170.793	170.794
.12623E+10	174.760	174.773	174.982	174.979	175.521	175.522
.15779E+10	177.016	177.027	177.193	177.192	177.621	177.621
.18935E+10	177.986	177.994	178.129	178.127	178.473	178.473
.22090E+10	178.090	178.096	178.206	178.205	178.486	178.487
.25246E+10	177.367	177.373	177.463	177.462	177.695	177.695
.28402E+10	176.607	176.611	176.686	176.685	176.879	176.879
.31558E+10	175.829	175.832	175.895	175.895	176.058	176.058
.63115E+10	171.278	171.279	171.299	171.299	171.351	171.351
.94673E+10	166.807	166.808	166.821	166.821	166.858	166.858
.12623E+11	164.444	164.444	164.455	164.455	164.485	164.485
.15779E+11	162.921	162.922	162.931	162.931	162.955	162.955
.18935E+11	161.125	161.125	161.133	161.133	161.154	161.154
.22090E+11	158.965	158.965	158.971	158.971	158.988	158.989
.25246E+11	156.586	156.586	156.591	156.591	156.606	156.606
.28402E+11	154.284	154.284	154.288	154.288	154.300	154.300
.31558E+11	152.193	152.193	152.197	152.197	152.207	152.207

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:01 NOV 02, 1995 CP= 36469.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP ht1iose	1197 TEMP gt1iose	58 TEMP c01iose	1019 TEMP gb1iose	1020 TEMP gb1hose	1018 TEMP sb1iose
.10000E-05	67.1232	81.4686	86.0952	87.5587	84.4176	75.1952
.20000E-05	67.1219	81.4667	86.0929	87.5562	84.4153	75.1931
31.558	67.1218	81.4666	86.0929	87.5561	84.4152	75.1930
.31558E+07	80.3966	93.0876	97.1499	98.3829	95.5270	87.2256
.63116E+07	86.1742	98.0251	101.808	102.936	100.237	92.4278
.94673E+07	90.1011	101.331	104.913	105.968	103.387	95.9511
.12623E+08	93.1351	103.859	107.278	108.276	105.794	98.6658
.15779E+08	95.6273	105.922	109.202	110.153	107.757	100.893
.18935E+08	97.7547	107.675	110.835	111.745	109.425	102.793
.22090E+08	99.6227	109.210	112.264	113.139	110.887	104.462
.25246E+08	101.282	110.575	113.534	114.378	112.188	105.948
.28402E+08	102.784	111.811	114.685	115.501	113.366	107.294
.31558E+08	104.174	112.958	115.754	116.545	114.461	108.543
.63115E+08	114.486	121.672	123.952	124.580	122.845	117.950
.94673E+08	121.644	127.991	129.998	130.542	128.997	124.646
.12623E+09	127.594	133.397	135.225	135.715	134.295	130.298
.15779E+09	132.883	138.280	139.975	140.424	139.098	135.366
.18935E+09	137.392	142.470	144.061	144.477	143.226	139.703
.22090E+09	141.145	145.965	147.470	147.861	146.672	143.320
.25246E+09	144.497	149.093	150.526	150.895	149.759	146.555
.28402E+09	147.017	151.429	152.802	153.154	152.062	148.981
.31558E+09	149.104	153.354	154.674	155.012	153.958	150.986
.63115E+09	164.205	167.280	168.227	168.461	167.692	165.519
.94673E+09	174.001	176.316	177.024	177.197	176.614	174.968
.12623E+10	178.022	179.835	180.390	180.524	180.066	178.772
.15779E+10	179.612	181.061	181.504	181.611	181.244	180.209
.18935E+10	180.081	181.253	181.612	181.699	181.401	180.563
.22090E+10	179.799	180.757	181.051	181.122	180.878	180.193
.25246E+10	178.780	179.573	179.817	179.875	179.673	179.106
.28402E+10	177.784	178.445	178.649	178.698	178.530	178.057
.31558E+10	176.819	177.376	177.547	177.589	177.447	177.049
.63115E+10	171.596	171.775	171.831	171.844	171.798	171.671
.94673E+10	167.028	167.152	167.191	167.200	167.168	167.080
.12623E+11	164.624	164.725	164.756	164.764	164.738	164.666
.15779E+11	163.070	163.154	163.180	163.186	163.165	163.106
.18935E+11	161.249	161.319	161.340	161.346	161.328	161.279
.22090E+11	159.068	159.126	159.144	159.149	159.134	159.093
.25246E+11	156.673	156.721	156.736	156.740	156.728	156.693
.28402E+11	154.356	154.397	154.410	154.413	154.402	154.374
.31558E+11	152.254	152.288	152.298	152.301	152.293	152.269

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:01 NOV 02, 1995 CP= 36469.490
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP sb1oose	1529 TEMP ib1iose	1608 TEMP ib1oose	2682 TEMP ob1oose
.10000E-05	75.0579	52.9329	52.7295	34.5328
.20000E-05	75.0559	52.9321	52.7287	34.5329
31.558	75.0557	52.9319	52.7285	34.5328
.31558E+07	87.0949	68.2890	68.0919	52.7160
.63116E+07	92.3017	75.0318	74.8403	60.7750
.94673E+07	95.8292	79.6408	79.4543	66.3136
.12623E+08	98.5476	83.2164	83.0346	70.6249

.15779E+08	100.778	86.1605	85.9830	74.1799
.18935E+08	102.681	88.6762	88.5026	77.2182
.22090E+08	104.353	90.8853	90.7153	79.8841
.25246E+08	105.841	92.8455	92.6788	82.2443
.28402E+08	107.190	94.6166	94.4533	84.3723
.31558E+08	108.441	96.2507	96.0905	86.3286
.63115E+08	117.862	108.144	108.005	100.264
.94673E+08	124.566	116.121	115.994	109.276
.12623E+09	130.223	122.596	122.476	116.404
.15779E+09	135.294	128.273	128.158	122.561
.18935E+09	139.634	133.083	132.973	127.743
.22090E+09	143.253	137.078	136.972	132.036
.25246E+09	146.490	140.636	140.533	135.849
.28402E+09	148.918	143.325	143.225	138.747
.31558E+09	150.925	145.559	145.461	141.161
.63115E+09	165.471	161.690	161.615	158.574
.94673E+09	174.930	172.130	172.070	169.814
.12623E+10	178.742	176.563	176.515	174.760
.15779E+10	180.184	178.449	178.411	177.016
.18935E+10	180.543	179.142	179.110	177.986
.22090E+10	180.177	179.032	179.006	178.090
.25246E+10	179.093	178.145	178.124	177.367
.28402E+10	178.046	177.255	177.237	176.607
.31558E+10	177.040	176.373	176.359	175.829
.63115E+10	171.668	171.452	171.448	171.278
.94673E+10	167.078	166.928	166.925	166.807
.12623E+11	164.665	164.542	164.540	164.444
.15779E+11	163.104	163.003	163.001	162.921
.18935E+11	161.278	161.193	161.191	161.125
.22090E+11	159.092	159.021	159.020	158.965
.25246E+11	156.693	156.633	156.632	156.586
.28402E+11	154.373	154.323	154.322	154.284
.31558E+11	152.268	152.226	152.225	152.193

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 36469.700 TIME= 10:36:02
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise

VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise

VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise

VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise

VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise

VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise

VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise

VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise

VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise

VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise

VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise

VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise

VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise

VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise

VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9867 TEMP	ot4oise	31.61	.1000E-05	177.9	.2209E+10
3 NSOL	9830 TEMP	ot4iise	31.63	.1000E-05	177.9	.2209E+10
4 NSOL	9558 TEMP	it4oise	50.29	31.56	179.4	.1893E+10
5 NSOL	9521 TEMP	it4iise	50.34	31.56	179.4	.1893E+10
6 NSOL	8545 TEMP	st4oise	56.94	31.56	179.9	.1893E+10
7 NSOL	8511 TEMP	st4iise	57.44	31.56	179.9	.1893E+10
8 NSOL	8470 TEMP	ht4iise	99.90	31.56	184.3	.1578E+10
9 NSOL	8471 TEMP	gt4iise	116.3	31.56	186.7	.1262E+10
10 NSOL	7947 TEMP	c04iise	124.2	.2000E-05	188.1	.1262E+10
11 NSOL	7952 TEMP	gb4iise	125.3	.2000E-05	188.2	.1262E+10
12 NSOL	7953 TEMP	gb4hise	117.4	.2000E-05	186.7	.1262E+10
13 NSOL	7951 TEMP	sb4iise	98.48	31.56	183.9	.1578E+10
14 NSOL	7996 TEMP	sb4oise	97.79	31.56	183.7	.1578E+10
15 NSOL	8946 TEMP	ib4iise	61.24	31.56	180.3	.1893E+10
16 NSOL	8983 TEMP	ib4oise	60.48	31.56	180.2	.1893E+10
17 NSOL	9867 TEMP	ob4oise	31.61	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:05 NOV 02, 1995 CP= 36472.830
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.6051	31.6331	50.2902	50.3388	56.9393	57.4435
.20000E-05	31.6053	31.6333	50.2896	50.3382	56.9383	57.4425
31.558	31.6052	31.6333	50.2894	50.3380	56.9381	57.4423
.31558E+07	50.2179	50.2414	66.7948	66.8392	72.3592	72.8373
.63116E+07	58.4829	58.5043	73.9600	74.0021	79.0518	79.5123
.94673E+07	64.1690	64.1889	78.8259	78.8661	83.5896	84.0351
.12623E+08	68.5979	68.6165	82.5827	82.6214	87.0889	87.5211
.15779E+08	72.2509	72.2686	85.6638	85.7011	89.9577	90.3779
.18935E+08	75.3732	75.3901	88.2877	88.3238	92.4002	92.8096
.22090E+08	78.1128	78.1289	90.5851	90.6201	94.5391	94.9384
.25246E+08	80.5374	80.5529	92.6181	92.6522	96.4327	96.8228
.28402E+08	82.7230	82.7380	94.4506	94.4837	98.1408	98.5223
.31558E+08	84.7314	84.7458	96.1364	96.1687	99.7153	100.089
.63115E+08	98.9939	99.0052	108.307	108.334	111.183	111.505
.94673E+08	108.175	108.184	116.410	116.435	118.934	119.228
.12623E+09	115.410	115.418	122.967	122.990	125.269	125.547
.15779E+09	121.644	121.652	128.703	128.724	130.844	131.110
.18935E+09	126.886	126.894	133.554	133.574	135.570	135.827
.22090E+09	131.228	131.235	137.577	137.597	139.493	139.742
.25246E+09	135.082	135.089	141.156	141.175	142.985	143.227
.28402E+09	138.013	138.019	143.856	143.874	145.613	145.848
.31558E+09	140.456	140.462	146.095	146.112	147.789	148.018
.63115E+09	158.077	158.081	162.204	162.217	163.440	163.621
.94673E+09	169.445	169.448	172.576	172.587	173.514	173.657
.12623E+10	174.474	174.476	176.930	176.938	177.666	177.781
.15779E+10	176.789	176.791	178.748	178.754	179.335	179.427
.18935E+10	177.803	177.804	179.383	179.389	179.857	179.932
.22090E+10	177.940	177.942	179.228	179.232	179.614	179.675
.25246E+10	177.244	177.245	178.305	178.308	178.624	178.674
.28402E+10	176.504	176.505	177.385	177.388	177.651	177.692

.31558E+10	175.742	175.743	176.482	176.484	176.705	176.739
.63115E+10	171.250	171.250	171.484	171.485	171.555	171.566
.94673E+10	166.788	166.788	166.949	166.949	166.997	167.005
.12623E+11	164.428	164.428	164.558	164.559	164.598	164.603
.15779E+11	162.908	162.908	163.016	163.016	163.048	163.053
.18935E+11	161.114	161.114	161.203	161.204	161.230	161.234
.22090E+11	158.956	158.956	159.030	159.030	159.052	159.055
.25246E+11	156.578	156.579	156.640	156.640	156.659	156.661
.28402E+11	154.277	154.277	154.329	154.329	154.344	154.346
.31558E+11	152.188	152.188	152.230	152.231	152.243	152.245

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:05 NOV 02, 1995 CP= 36472.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.9039	116.316	124.174	125.267	117.378	98.4818
.20000E-05	99.9015	116.313	124.172	125.264	117.375	98.4788
31.558	99.9014	116.313	124.172	125.264	117.375	98.4787
.31558E+07	110.763	125.785	132.978	133.893	126.520	109.127
.63116E+07	115.085	129.349	136.182	137.019	129.957	113.411
.94673E+07	117.856	131.534	138.090	138.875	132.063	116.180
.12623E+08	119.904	133.091	139.416	140.160	133.563	118.238
.15779E+08	121.531	134.294	140.417	141.128	134.721	119.883
.18935E+08	122.888	135.273	141.218	141.900	135.664	121.258
.22090E+08	124.059	136.104	141.889	142.546	136.465	122.449
.25246E+08	125.092	136.832	142.473	143.108	137.167	123.503
.28402E+08	126.022	137.484	142.993	143.608	137.796	124.452
.31558E+08	126.887	138.092	143.481	144.078	138.384	125.336
.63115E+08	133.682	143.165	147.737	148.215	143.331	132.272
.94673E+08	138.984	147.538	151.668	152.082	147.641	137.661
.12623E+09	143.745	151.696	155.538	155.909	151.757	142.480
.15779E+09	148.152	155.653	159.279	159.618	155.683	146.934
.18935E+09	151.959	159.100	162.554	162.868	159.107	150.780
.22090E+09	155.127	161.971	165.282	165.576	161.961	153.984
.25246E+09	157.968	164.551	167.737	168.013	164.527	156.856
.28402E+09	160.046	166.406	169.485	169.748	166.374	158.964
.31558E+09	161.732	167.891	170.874	171.125	167.852	160.679
.63115E+09	173.752	178.392	180.644	180.817	178.323	172.929
.94673E+09	181.387	184.970	186.713	186.840	184.899	180.739
.12623E+10	183.873	186.718	188.104	188.203	186.657	183.356
.15779E+10	184.306	186.596	187.713	187.792	186.546	183.889
.18935E+10	183.884	185.744	186.654	186.718	185.704	183.545
.22090E+10	182.905	184.430	185.175	185.229	184.397	182.628
.25246E+10	181.343	182.605	183.222	183.267	182.578	181.113
.28402E+10	179.916	180.968	181.483	181.521	180.946	179.725
.31558E+10	178.608	179.493	179.927	179.959	179.475	178.448
.63115E+10	172.163	172.446	172.585	172.596	172.441	172.112
.94673E+10	167.416	167.611	167.706	167.714	167.608	167.381
.12623E+11	164.937	165.095	165.172	165.179	165.093	164.909
.15779E+11	163.328	163.459	163.523	163.528	163.457	163.305
.18935E+11	161.463	161.571	161.624	161.628	161.569	161.443
.22090E+11	159.245	159.335	159.379	159.383	159.334	159.229
.25246E+11	156.819	156.894	156.931	156.934	156.893	156.806
.28402E+11	154.478	154.540	154.571	154.574	154.540	154.467
.31558E+11	152.355	152.407	152.432	152.435	152.407	152.346

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:05 NOV 02, 1995 CP= 36472.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.7949	61.2444	60.4844	31.6051
.20000E-05	97.7919	61.2432	60.4833	31.6053
31.558	97.7918	61.2429	60.4830	31.6052
.31558E+07	108.461	76.2678	75.5220	50.2179
.63116E+07	112.765	82.7322	82.0049	58.4829
.94673E+07	115.552	87.0963	86.3870	64.1690
.12623E+08	117.627	90.4514	89.7590	68.5979
.15779E+08	119.286	93.1954	92.5190	72.2509
.18935E+08	120.676	95.5274	94.8669	75.3732
.22090E+08	121.880	97.5673	96.9219	78.1128
.25246E+08	122.945	99.3735	98.7418	80.5374
.28402E+08	123.906	101.003	100.384	82.7230
.31558E+08	124.799	102.504	101.897	84.7314
.63115E+08	131.803	113.478	112.949	98.9939
.94673E+08	137.227	120.979	120.490	108.175
.12623E+09	142.068	127.156	126.693	115.410
.15779E+09	146.537	132.618	132.172	121.644
.18935E+09	150.395	137.256	136.825	126.886
.22090E+09	153.609	141.105	140.687	131.228
.25246E+09	156.491	144.535	144.128	135.082
.28402E+09	158.607	147.109	146.712	138.013
.31558E+09	160.330	149.237	148.851	140.456
.63115E+09	172.650	164.522	164.217	158.077
.94673E+09	180.516	174.346	174.103	169.445
.12623E+10	183.178	178.323	178.129	174.474
.15779E+10	183.746	179.860	179.704	176.789
.18935E+10	183.428	180.282	180.156	177.803
.22090E+10	182.533	179.961	179.858	177.940
.25246E+10	181.035	178.909	178.824	177.244
.28402E+10	179.660	177.887	177.817	176.504
.31558E+10	178.394	176.903	176.844	175.742
.63115E+10	172.095	171.618	171.600	171.250
.94673E+10	167.370	167.040	167.028	166.788
.12623E+11	164.900	164.632	164.622	164.428
.15779E+11	163.298	163.077	163.069	162.908
.18935E+11	161.437	161.254	161.247	161.114
.22090E+11	159.224	159.071	159.066	158.956
.25246E+11	156.802	156.675	156.670	156.578
.28402E+11	154.464	154.358	154.354	154.277
.31558E+11	152.343	152.255	152.251	152.188

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 36473.070 TIME= 10:36:05
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose
 VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose
 VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose
 VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose
 VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose
 VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose
 VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9786 TEMP	ot4oose	34.56	.1000E-05	178.1	.2209E+10
3	NSOL	9777 TEMP	ot4iose	34.65	31.56	178.1	.2209E+10
4	NSOL	9477 TEMP	it4oose	36.19	31.56	178.2	.2209E+10
5	NSOL	9318 TEMP	it4iose	36.15	31.56	178.2	.2209E+10
6	NSOL	8540 TEMP	st4oose	43.14	31.56	178.5	.2209E+10
7	NSOL	8497 TEMP	st4iose	43.17	31.56	178.5	.2209E+10
8	NSOL	8460 TEMP	ht4iose	67.18	31.56	180.1	.1893E+10
9	NSOL	8461 TEMP	gt4iose	81.52	31.56	181.3	.1893E+10
10	NSOL	7927 TEMP	c04iose	86.15	31.56	181.6	.1893E+10
11	NSOL	7929 TEMP	gb4iose	87.61	31.56	181.7	.1893E+10
12	NSOL	7930 TEMP	gb4hose	84.47	31.56	181.4	.1893E+10
13	NSOL	7928 TEMP	sb4iose	75.25	31.56	180.6	.1893E+10
14	NSOL	7991 TEMP	sb4oose	75.11	31.56	180.5	.1893E+10
15	NSOL	8787 TEMP	ib4iose	53.01	31.56	179.1	.1893E+10
16	NSOL	8902 TEMP	ib4oose	52.81	31.56	179.1	.1893E+10
17	NSOL	9786 TEMP	ob4oose	34.56	.1000E-05	178.1	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:08 NOV 02, 1995 CP= 36476.200
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.5645	34.6524	36.1905	36.1497	43.1445	43.1744
.20000E-05	34.5646	34.6524	36.1905	36.1497	43.1442	43.1741
31.558	34.5645	34.6524	36.1905	36.1496	43.1441	43.1740
.31558E+07	52.7423	52.8208	54.1873	54.1529	59.8386	59.8626
.63116E+07	60.7988	60.8724	62.1500	62.1187	67.2366	67.2580
.94673E+07	66.3356	66.4056	67.6168	67.5878	72.3178	72.3375
.12623E+08	70.6456	70.7125	71.8694	71.8422	76.2730	76.2913
.15779E+08	74.1995	74.2639	75.3745	75.3489	79.5356	79.5528
.18935E+08	77.2369	77.2989	78.3693	78.3449	82.3259	82.3422
.22090E+08	79.9020	79.9621	80.9967	80.9735	84.7768	84.7922
.25246E+08	82.2615	82.3198	83.3226	83.3004	86.9497	86.9644
.28402E+08	84.3889	84.4455	85.4199	85.3985	88.9115	88.9256
.31558E+08	86.3446	86.3999	87.3482	87.3277	90.7184	90.7319
.63115E+08	100.277	100.323	101.103	101.088	103.718	103.728

.94673E+08	109.287	109.327	110.018	110.005	112.257	112.265
.12623E+09	116.414	116.451	117.085	117.074	119.089	119.096
.15779E+09	122.570	122.605	123.197	123.187	125.030	125.036
.18935E+09	127.751	127.784	128.344	128.335	130.045	130.051
.22090E+09	132.044	132.076	132.610	132.601	134.206	134.211
.25246E+09	135.857	135.887	136.398	136.390	137.906	137.911
.28402E+09	138.754	138.783	139.275	139.267	140.712	140.716
.31558E+09	141.167	141.195	141.670	141.663	143.047	143.050
.63115E+09	158.579	158.600	158.949	158.945	159.902	159.904
.94673E+09	169.817	169.833	170.099	170.096	170.798	170.799
.12623E+10	174.763	174.775	174.984	174.982	175.525	175.525
.15779E+10	177.019	177.029	177.195	177.194	177.624	177.624
.18935E+10	177.988	177.996	178.130	178.129	178.475	178.476
.22090E+10	178.091	178.098	178.207	178.206	178.488	178.489
.25246E+10	177.368	177.374	177.464	177.463	177.696	177.697
.28402E+10	176.607	176.612	176.687	176.686	176.881	176.881
.31558E+10	175.829	175.833	175.896	175.895	176.059	176.059
.63115E+10	171.278	171.279	171.299	171.299	171.352	171.352
.94673E+10	166.807	166.808	166.821	166.821	166.858	166.858
.12623E+11	164.444	164.444	164.455	164.455	164.485	164.485
.15779E+11	162.921	162.922	162.931	162.931	162.956	162.956
.18935E+11	161.125	161.126	161.133	161.133	161.154	161.154
.22090E+11	158.965	158.965	158.971	158.971	158.989	158.989
.25246E+11	156.586	156.586	156.592	156.591	156.606	156.606
.28402E+11	154.284	154.284	154.288	154.288	154.300	154.300
.31558E+11	152.193	152.193	152.197	152.197	152.207	152.207

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:08 NOV 02, 1995 CP= 36476.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1766	81.5218	86.1502	87.6149	84.4732	75.2487
.20000E-05	67.1753	81.5198	86.1479	87.6124	84.4709	75.2466
.31.558	67.1751	81.5197	86.1478	87.6123	84.4708	75.2465
.31558E+07	80.4456	93.1372	97.2013	98.4356	95.5791	87.2754
.63116E+07	86.2207	98.0724	101.857	102.987	100.286	92.4752
.94673E+07	90.1456	101.377	104.960	106.017	103.435	95.9966
.12623E+08	93.1779	103.903	107.323	108.323	105.841	98.7096
.15779E+08	95.6686	105.964	109.246	110.199	107.802	100.935
.18935E+08	97.7946	107.716	110.878	111.790	109.469	102.834
.22090E+08	99.6614	109.251	112.306	113.182	110.929	104.502
.25246E+08	101.320	110.614	113.575	114.420	112.229	105.987
.28402E+08	102.821	111.849	114.725	115.542	113.406	107.332
.31558E+08	104.210	112.996	115.793	116.585	114.501	108.580
.63115E+08	114.515	121.703	123.984	124.613	122.878	117.981
.94673E+08	121.671	128.019	130.027	130.572	129.027	124.674
.12623E+09	127.619	133.423	135.253	135.743	134.322	130.324
.15779E+09	132.906	138.305	140.001	140.450	139.124	135.390
.18935E+09	137.414	142.494	144.085	144.503	143.251	139.726
.22090E+09	141.166	145.987	147.493	147.886	146.695	143.341
.25246E+09	144.517	149.115	150.548	150.919	149.781	146.576
.28402E+09	147.037	151.450	152.824	153.177	152.083	149.001
.31558E+09	149.123	153.374	154.695	155.033	153.979	151.006
.63115E+09	164.219	167.295	168.242	168.478	167.708	165.533
.94673E+09	174.012	176.327	177.036	177.209	176.626	174.979
.12623E+10	178.030	179.844	180.399	180.534	180.075	178.780
.15779E+10	179.618	181.068	181.512	181.619	181.251	180.215
.18935E+10	180.086	181.259	181.618	181.705	181.407	180.568
.22090E+10	179.803	180.762	181.056	181.127	180.883	180.197
.25246E+10	178.784	179.577	179.821	179.880	179.678	179.110

.28402E+10	177.787	178.449	178.652	178.702	178.533	178.060
.31558E+10	176.822	177.378	177.550	177.592	177.450	177.051
.63115E+10	171.597	171.776	171.832	171.845	171.799	171.672
.94673E+10	167.028	167.153	167.191	167.201	167.169	167.081
.12623E+11	164.624	164.725	164.757	164.765	164.739	164.667
.15779E+11	163.071	163.154	163.180	163.187	163.165	163.106
.18935E+11	161.249	161.319	161.341	161.346	161.328	161.279
.22090E+11	159.069	159.126	159.145	159.149	159.134	159.093
.25246E+11	156.673	156.721	156.737	156.741	156.728	156.694
.28402E+11	154.356	154.397	154.410	154.413	154.403	154.374
.31558E+11	152.254	152.288	152.299	152.301	152.293	152.269

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:08 NOV 02, 1995 CP= 36476.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	75.1113	53.0109	52.8075	34.5645
.20000E-05	75.1092	53.0101	52.8067	34.5646
31.558	75.1091	53.0098	52.8065	34.5645
.31558E+07	87.1444	68.3580	68.1612	52.7423
.63116E+07	92.3489	75.0962	74.9050	60.7988
.94673E+07	95.8744	79.7018	79.5156	66.3356
.12623E+08	98.5912	83.2747	83.0931	70.6456
.15779E+08	100.820	86.2164	86.0390	74.1995
.18935E+08	102.722	88.7300	88.5566	77.2369
.22090E+08	104.393	90.9373	90.7675	79.9020
.25246E+08	105.880	92.8958	92.7294	82.2615
.28402E+08	107.228	94.6655	94.5024	84.3889
.31558E+08	108.478	96.2981	96.1382	86.3446
.63115E+08	117.893	108.182	108.044	100.277
.94673E+08	124.594	116.155	116.028	109.287
.12623E+09	130.248	122.627	122.507	116.414
.15779E+09	135.318	128.302	128.187	122.570
.18935E+09	139.657	133.110	133.000	127.751
.22090E+09	143.275	137.104	136.998	132.044
.25246E+09	146.511	140.661	140.558	135.857
.28402E+09	148.938	143.349	143.249	138.754
.31558E+09	150.945	145.582	145.485	141.167
.63115E+09	165.485	161.707	161.631	158.579
.94673E+09	174.941	172.143	172.083	169.817
.12623E+10	178.750	176.573	176.525	174.763
.15779E+10	180.191	178.457	178.419	177.019
.18935E+10	180.549	179.148	179.117	177.988
.22090E+10	180.181	179.037	179.011	178.091
.25246E+10	179.097	178.149	178.129	177.368
.28402E+10	178.049	177.258	177.241	176.607
.31558E+10	177.042	176.376	176.362	175.829
.63115E+10	171.669	171.453	171.449	171.278
.94673E+10	167.079	166.929	166.925	166.807
.12623E+11	164.665	164.543	164.540	164.444
.15779E+11	163.105	163.003	163.001	162.921
.18935E+11	161.278	161.193	161.192	161.125
.22090E+11	159.092	159.022	159.020	158.965
.25246E+11	156.693	156.634	156.632	156.586
.28402E+11	154.373	154.323	154.323	154.284
.31558E+11	152.268	152.226	152.226	152.193

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 36476.430 TIME= 10:36:08
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose

VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose

VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose

VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwoose

VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose

VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose

VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose

VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose

VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose

VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose

VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose

VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose

VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2874 TEMP	otwoose	35.02	31.56	178.1	.2209E+10
3	NSOL	2610 TEMP	otwiose	35.39	31.56	178.2	.2209E+10
4	NSOL	2556 TEMP	itwoose	35.75	31.56	178.2	.2209E+10
5	NSOL	2504 TEMP	itwiose	36.07	31.56	178.2	.2209E+10
6	NSOL	563 TEMP	stwoose	39.06	31.56	178.4	.2209E+10
7	NSOL	2186 TEMP	stwiose	39.34	31.56	178.4	.2209E+10
8	NSOL	2150 TEMP	htwiose	48.44	31.56	179.0	.1893E+10
9	NSOL	2151 TEMP	gtwiose	53.60	31.56	179.4	.1893E+10
10	NSOL	126 TEMP	c0wiose	57.02	31.56	179.6	.1893E+10
11	NSOL	2085 TEMP	gbwiose	58.11	31.56	179.7	.1893E+10
12	NSOL	2086 TEMP	gbwoose	56.24	31.56	179.5	.1893E+10
13	NSOL	2084 TEMP	sbwiose	53.17	31.56	179.2	.1893E+10
14	NSOL	660 TEMP	sbwoose	53.04	31.56	179.2	.1893E+10
15	NSOL	2236 TEMP	ibwiose	52.84	31.56	179.2	.1893E+10
16	NSOL	2272 TEMP	ibwoose	52.67	31.56	179.1	.1893E+10
17	NSOL	2874 TEMP	obwoose	35.02	31.56	178.1	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:11 NOV 02, 1995 CP= 36479.560
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP	2610 TEMP	2556 TEMP	2504 TEMP	563 TEMP	2186 TEMP
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	otwoose	otwiose	itwoose	itwiose	stwoose	stwiose
.10000E-05	35.0195	35.3889	35.7548	36.0705	39.0615	39.3413
.20000E-05	35.0196	35.3890	35.7549	36.0706	39.0614	39.3412
31.558	35.0195	35.3889	35.7548	36.0705	39.0613	39.3411
.31558E+07	53.1571	53.4877	53.8138	54.0943	56.6901	56.9339
.63116E+07	61.1904	61.5005	61.8059	62.0683	64.4701	64.6961
.94673E+07	66.7092	67.0039	67.2937	67.5425	69.8036	70.0166
.12623E+08	71.0040	71.2859	71.5630	71.8007	73.9486	74.1511
.15779E+08	74.5447	74.8158	75.0820	75.3102	77.3629	77.5566
.18935E+08	77.5704	77.8320	78.0887	78.3087	80.2791	80.4652
.22090E+08	80.2251	80.4783	80.7265	80.9392	82.8372	83.0166
.25246E+08	82.5752	82.8209	83.0616	83.2678	85.1020	85.2755
.28402E+08	84.6942	84.9330	85.1670	85.3673	87.1444	87.3125
.31558E+08	86.6422	86.8749	87.1027	87.2977	89.0230	89.1863
.63115E+08	100.524	100.717	100.905	101.065	102.458	102.590
.94673E+08	109.506	109.677	109.843	109.985	111.206	111.322
.12623E+09	116.616	116.773	116.926	117.057	118.169	118.275
.15779E+09	122.759	122.906	123.049	123.171	124.204	124.303
.18935E+09	127.930	128.070	128.205	128.321	129.291	129.384
.22090E+09	132.215	132.348	132.477	132.587	133.508	133.596
.25246E+09	136.020	136.148	136.272	136.377	137.254	137.338
.28402E+09	138.911	139.034	139.153	139.255	140.096	140.177
.31558E+09	141.320	141.438	141.553	141.651	142.462	142.539
.63115E+09	158.691	158.779	158.863	158.935	159.519	159.575
.94673E+09	169.902	169.969	170.034	170.089	170.528	170.570
.12623E+10	174.830	174.882	174.933	174.976	175.319	175.352
.15779E+10	177.072	177.114	177.154	177.189	177.462	177.488
.18935E+10	178.031	178.065	178.097	178.125	178.345	178.367
.22090E+10	178.126	178.154	178.180	178.203	178.382	178.400
.25246E+10	177.397	177.420	177.442	177.460	177.609	177.623
.28402E+10	176.631	176.650	176.669	176.684	176.807	176.819
.31558E+10	175.849	175.865	175.881	175.894	175.997	176.007
.63115E+10	171.284	171.289	171.294	171.298	171.331	171.334
.94673E+10	166.811	166.815	166.818	166.821	166.844	166.846
.12623E+11	164.447	164.450	164.453	164.455	164.473	164.475
.15779E+11	162.924	162.926	162.929	162.930	162.946	162.947
.18935E+11	161.128	161.129	161.131	161.133	161.145	161.147
.22090E+11	158.967	158.968	158.970	158.971	158.982	158.983
.25246E+11	156.588	156.589	156.590	156.591	156.600	156.601
.28402E+11	154.285	154.286	154.287	154.288	154.295	154.296
.31558E+11	152.194	152.195	152.196	152.197	152.203	152.203

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:11 NOV 02, 1995 CP= 36479.570
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.4380	53.6045	57.0208	58.1141	56.2385	53.1736
.20000E-05	48.4374	53.6037	57.0197	58.1129	56.2375	53.1728
31.558	48.4372	53.6035	57.0195	58.1127	56.2372	53.1726
.31558E+07	64.8163	69.3042	72.2461	73.0956	71.3543	68.5520
.63116E+07	71.9830	76.1376	78.8519	79.6011	77.9471	75.2978
.94673E+07	76.8727	80.7860	83.3375	84.0205	82.4365	79.9060
.12623E+08	80.6606	84.3796	86.8009	87.4338	85.9098	83.4795
.15779E+08	83.7750	87.3304	89.6426	90.2354	88.7640	86.4206
.18935E+08	86.4322	89.8464	92.0647	92.6240	91.1995	88.9331
.22090E+08	88.7622	92.0519	94.1877	94.7184	93.3362	91.1389
.25246E+08	90.8262	94.0063	96.0693	96.5753	95.2312	93.0959
.28402E+08	92.6887	95.7702	97.7679	98.2523	96.9429	94.8640
.31558E+08	94.4042	97.3961	99.3348	99.8000	98.5225	96.4952

.63115E+08	106.787	109.197	110.753	111.101	110.041	108.365
.94673E+08	114.996	117.112	118.476	118.768	117.822	116.329
.12623E+09	121.618	123.547	124.788	125.045	124.173	122.797
.15779E+09	127.403	129.194	130.345	130.576	129.758	128.469
.18935E+09	132.294	133.978	135.059	135.271	134.496	133.276
.22090E+09	136.353	137.950	138.974	139.171	138.431	137.267
.25246E+09	139.964	141.486	142.462	142.646	141.937	140.822
.28402E+09	142.694	144.154	145.090	145.264	144.581	143.507
.31558E+09	144.962	146.368	147.269	147.434	146.775	145.737
.63115E+09	161.314	162.328	162.975	163.084	162.598	161.835
.94673E+09	171.873	172.634	173.120	173.197	172.828	172.246
.12623E+10	176.369	176.965	177.344	177.404	177.113	176.656
.15779E+10	178.298	178.772	179.075	179.122	178.889	178.524
.18935E+10	179.020	179.403	179.647	179.685	179.497	179.202
.22090E+10	178.932	179.245	179.444	179.475	179.322	179.081
.25246E+10	178.062	178.320	178.485	178.510	178.384	178.186
.28402E+10	177.185	177.400	177.537	177.558	177.453	177.288
.31558E+10	176.314	176.495	176.610	176.628	176.540	176.401
.63115E+10	171.433	171.490	171.527	171.533	171.505	171.461
.94673E+10	166.914	166.954	166.979	166.983	166.964	166.934
.12623E+11	164.530	164.563	164.583	164.587	164.571	164.547
.15779E+11	162.993	163.019	163.037	163.040	163.027	163.006
.18935E+11	161.185	161.207	161.221	161.223	161.213	161.196
.22090E+11	159.014	159.033	159.045	159.047	159.038	159.024
.25246E+11	156.627	156.643	156.653	156.654	156.647	156.635
.28402E+11	154.318	154.331	154.339	154.341	154.335	154.325
.31558E+11	152.222	152.233	152.239	152.241	152.236	152.227

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:36:11 NOV 02, 1995 CP= 36479.580
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP	2236 TEMP	2272 TEMP	2874 TEMP
	sbwoose	ibwiose	ibwoose	obwoose
.10000E-05	53.0454	52.8426	52.6684	35.0195
.20000E-05	53.0446	52.8418	52.6676	35.0196
31.558	53.0444	52.8416	52.6674	35.0195
.31558E+07	68.4274	68.2305	68.0613	53.1571
.63116E+07	75.1767	74.9854	74.8209	61.1904
.94673E+07	79.7882	79.6020	79.4419	66.7092
.12623E+08	83.3646	83.1831	83.0270	71.0040
.15779E+08	86.3085	86.1314	85.9790	74.5447
.18935E+08	88.8235	88.6504	88.5015	77.5704
.22090E+08	91.0317	90.8623	90.7166	80.2251
.25246E+08	92.9909	92.8249	92.6820	82.5752
.28402E+08	94.7610	94.5982	94.4581	84.6942
.31558E+08	96.3940	96.2342	96.0966	86.6422
.63115E+08	108.277	108.139	108.021	100.524
.94673E+08	116.249	116.123	116.015	109.506
.12623E+09	122.722	122.603	122.501	116.616
.15779E+09	128.397	128.284	128.186	122.759
.18935E+09	133.206	133.097	133.004	127.930
.22090E+09	137.200	137.095	137.004	132.215
.25246E+09	140.757	140.655	140.567	136.020
.28402E+09	143.444	143.345	143.259	138.911
.31558E+09	145.676	145.579	145.496	141.320
.63115E+09	161.787	161.712	161.648	158.691
.94673E+09	172.209	172.150	172.099	169.902
.12623E+10	176.626	176.579	176.539	174.830
.15779E+10	178.500	178.463	178.430	177.072
.18935E+10	179.183	179.152	179.126	178.031
.22090E+10	179.065	179.040	179.019	178.126
.25246E+10	178.173	178.152	178.134	177.397

.28402E+10	177.277	177.260	177.245	176.631
.31558E+10	176.392	176.378	176.366	175.849
.63115E+10	171.458	171.454	171.450	171.284
.94673E+10	166.932	166.929	166.926	166.811
.12623E+11	164.545	164.543	164.541	164.447
.15779E+11	163.005	163.003	163.001	162.924
.18935E+11	161.195	161.193	161.192	161.128
.22090E+11	159.023	159.022	159.020	158.967
.25246E+11	156.635	156.633	156.632	156.588
.28402E+11	154.324	154.323	154.323	154.285
.31558E+11	152.227	152.226	152.226	152.194

***** ROUTINE COMPLETED ***** CP = 36479.590

 End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21x2.db
 FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
 SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21x2.db
 FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
 NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
 NUMBER OF R/W OPERATIONS= 30529
 MAXIMUM RECORD NUMBER = 427
 RECORD SIZE (1*4 WORDS) = 16384
 PAGE FILE SIZE (MB) = 26.688

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*-----*
|                                     |
|               ANSYS RUN COMPLETED               |
|-----|
|               REV. 5.0 A               |               HP 9000/7XX               |
| CP TIME      (sec) = 36504.350          | TIME = 10:37:03          |
| ELAPSED TIME (sec) = 61762.000          | DATE  = 11/02/95          |
|-----|
*-----*
    
```

WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glss21x2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

***** NOTICE ***** THIS IS THE ANSYS GENERAL PURPOSE
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 ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glss21x2.inp
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED)
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: srpgls1.dat
 16 /COM, * Initial Heat Load: 710 W/canister
 17 /COM, *
 18 /COM, * Surface Temp. file: c21x5a.parm

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19 /COM, *      100 MTU/acre (24.7 kgU/m^2) AML (High Thermal Loading) *
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 22.5 m *
22 /COM, *      WP c/c spacing = 16.165 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,param,
35 /COM, Read in surface temps. from repository model
36 PARRES,CHANGE,c21x5a,param,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 PI=3.141592654
64 SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WSPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 *SET,DFRAD,2.5,
73 *SET,INVRT,0.7,
74 *SET,WSPSPC,16.165,
75 *SET,OFFST,0.1833,
76 XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLEN = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM, DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM, Required ceramic and drum parameters:
102 /COM, CDRAD = glass radius (m)
103 /COM, CDHGT = glass hieght; hieght of fill (m)
104 /COM, DRMIR = SRP Canister inner rad. (m)
105 /COM, DRMOR = SRP Canister drum outer rad. (m)
106 /COM, DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM, DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM, DRLEN = SRP Canister outer length (m)
109 /COM, DRILN = SRP Canister Inner length (m)
110 /COM, DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM, DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM, DRMOF = SRP Canister center line off set (m)
113 /COM, PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM, FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM, Define Extrude Distances as required:
130 /COM, Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM, Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM, *****
146 /COM, Define calculated parameters
147 /COM, ASSY = assembly heat production (W) f(yrs)
148 /COM, FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM, *****
154 /COM, Define 45 degree point of reference:
155 /COM, TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM, TC145 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM, HCI45 = x coord. WP Center Line side of center Glass at
158 /COM, HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM,          CC045 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM,          SC045 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM,          SC145 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM,          MI45 = x coord. DCIRD at 45 deg.
163 /COM,          MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM,          DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TC045=(DRMOF+DRMOR-DRMOR/SQT)
166 TC145=(DRMOF+DRMOR-DRMIR/SQT)
167 HC145=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CC045=(DRMOF+DRMOR)
170 SC045=(DRMOF+DRMOR+DRMOR/SQT)
171 SC145=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM,          *****
177 /COM,          Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM,          *****
194 /COM,          File props01.dat describes material properties
195 /COM,          and thier reference numbers
196 MPREAD,propsd1.dat,
197 /COM,          *****
198 /COM,          Define new material 15 for low thermal loading
199 /COM,          outer barrier of 70/30 Copper Nickel (C71500)
200 /COM,          Density:      DENS      (kg/m^3)
201 /COM,          Emissivity:    EMIS
202 /COM,          Conductivity:  KXX      (W/m/K)
203 /COM,          Specific Heat: C      (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM,          Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM,          Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM,          Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM,          Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7,(5.0/9.0*(1112.0-32.0)),(5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM,          *****
223 /COM,          Read in single drum heat loads
224 /COM,          Calculate the volumetric heat generation
225 /COM,          (Assembly time is in years, FUEL is in seconds)
226 /INPUT,srppls1.dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLUME),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0,0,0,0,0,0,45.0,0,0,0,0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9,10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5,10,15,11,
274 AL, 8, 9,16,10,
275 AL, 7,12,13, 9,
276 AL, 6,11,14,12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, 0.0, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, 0.0, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, 0.0, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM,      Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM,      *****
388 /COM,      Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM,      GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM,      Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM,      Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM,      Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM,      Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM,      Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM,      Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM,      *****
421 /COM,      Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM,      *****
425 /COM,      Set up drift wall radiation matrix
426 /COM,      (K's 32 - 34)
427 /COM,      1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM,      Define extrude lines (will not use)
432 /COM,      (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM,
436 /COM,      Extrude drift 8 elements with smallest
437 LESIZE,47,,,8,8.4      elements at WP mid-length (will not use)
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),      YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WSPC/2.0),
466 K,44, (0.0-XXX),      YYY, -1*(WSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WSPC/2.0),
485 K,49, (0.0-XXX),      YYY, (WSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM,          (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM,          *****
590 /COM,          Construct geometry for WP Bottom end
591 /COM,          (K's 56 - 61 )
592 K,56,          DCIRD,          0.0, (-1.0*BTPT3),
593 K,57,          0.0,          DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58,          (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59,          0.0,          (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60,          DCORD,          0.0, (-1.0*BTPT3),
599 K,61,          0.0,          DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM,          (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM,          (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,83,84,1,
614 LSEL,A,LINE,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM,          (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM,          Mesh areas
626 /COM,          Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM,          *****
632 /COM,          Extrude 2-D WP Interior into 3-D Space
633 /COM,          (V's 1 - 32)
634 /COM,          Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,,
637 VDRAG, 9,10,11,12,,,35,36,,,,
638 VDRAG,13,14,,,,,35,36,,,,
639 VDRAG,15,16,,,,,35,36,,,,
640 NUMMRG,KP,
641 /COM,          (V's 33 - 80)
642 /COM,          Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,,
646 VDRAG,13,14,,,,,40,41,42,,,,
647 VDRAG,15,16,,,,,40,41,42,,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT, 15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98, 101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0.0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0.0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0.0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM,      *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM,      *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM,      *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4
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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrcangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obrdrwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrangap,
1140 SE,obrdrwgap,
1141 /COM,          Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM,          *****
1151 /COM,          Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM,          *****
1156 /COM,          GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM,          DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM,          This section used only if both rad. and He conducti
1159 /COM,          is used in the model.
1160 /COM,          He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM,          Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM,          He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM,          Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM,          He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,6,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TME0,TM10
1342 TIME,TM,
1343 VSEL,S,MAT,,5,
1344 ESLV,S,
1345 BFE,ALL,HGEN,,(FUEL(TM)),
1346 VSEL,ALL
1347 ESEL,ALL
1348 ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359      *ENDDO
1360      /COM, NSUBST,15,30,10,ON
1361      /COM,      Apply loads and solve for 1 to 9 years
1362      *DO,TM,TME1,TME9,TMI1
1363      TIME,TM,
1364      VSEL,S,MAT,,5,
1365      ESLV,S,
1366      BFE,ALL,HGEN,,(FUEL(TM)),
1367      VSEL,ALL
1368      ESEL,ALL
1369      ASEL,S,AREA,,17,26,1
1370      NSLA,S,1,
1371      DDELE,ALL,TEMP,
1372      ASEL,ALL,
1373      NSEL,ALL,
1374      ASEL,S,AREA,,17,26,1
1375      NSLA,S,1,
1376      D,ALL,TEMP,(DFSID(TM)),
1377      ASEL,ALL,
1378      NSEL,ALL,
1379      SOLVE
1380      *ENDDO
1381      /COM, NSUBST,20,40,15,ON
1382      /COM,      Apply loads and solve for 10 to 90 years
1383      *DO,TM,TME10,TME90,TMI10
1384      TIME,TM,
1385      VSEL,S,MAT,,5,
1386      ESLV,S,
1387      BFE,ALL,HGEN,,(FUEL(TM)),
1388      VSEL,ALL
1389      ESEL,ALL
1390      ASEL,S,AREA,,17,26,1
1391      NSLA,S,1,
1392      DDELE,ALL,TEMP,
1393      ASEL,ALL,
1394      NSEL,ALL,
1395      ASEL,S,AREA,,17,26,1
1396      NSLA,S,1,
1397      D,ALL,TEMP,(DFSID(TM)),
1398      ASEL,ALL,
1399      NSEL,ALL,
1400      SOLVE
1401      *ENDDO
1402      /COM, NSUBST,30,60,20,ON
1403      /COM,      Apply loads and solve for 100 to 1000 years
1404      *DO,TM,TME100,TME1000,TMI100
1405      TIME,TM,
1406      VSEL,S,MAT,,5,
1407      ESLV,S,
1408      BFE,ALL,HGEN,,(FUEL(TM)),
1409      VSEL,ALL
1410      ESEL,ALL
1411      ASEL,S,AREA,,17,26,1
1412      NSLA,S,1,
1413      DDELE,ALL,TEMP,
1414      ASEL,ALL,
1415      NSEL,ALL,
1416      ASEL,S,AREA,,17,26,1
1417      NSLA,S,1,
1418      D,ALL,TEMP,(DFSID(TM)),

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1419      ASEL,ALL,
1420      NSEL,ALL,
1421      SOLVE
1422 *ENDDO
1423 FINISH
1424 /COM, *****
1425 /COM,      Create element contour plots of solution results
1426 /COM,
1427 /COM,      Sort through solution results for time of max temp.
1428 /POST26,
1429 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1430 STORE,NEW,
1431 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1432 FINISH
1433 /POST1,
1434 /COM,      Create temperature contour plots of WP at peak
1435 /RESET,
1436 /TYPE,,HIDP,
1437 /VIEW,1,1,1,1,
1438 /DIST,1,3,0,
1439 /NUM, 1,
1440 /GLINE,,-1,
1441 /TRIAD,OFF,
1442 /PNUM,MAT, 1,
1443 VSEL,S,MAT,,1,5,4
1444 CSYS,31,
1445 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1446 VSEL,U,LOC,Y,-45.0,135.0,
1447 CSYS,0,
1448 ESLV,S
1449 VSEL,S,MAT,,1,5,4
1450 CSYS,32,
1451 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1452 VSEL,U,LOC,Y,-45.0,45.0,
1453 CSYS,0,
1454 ESLV,A
1455 VSEL,S,LOC,X,-100.0,0.0,
1456 ESLV,A
1457 ASEL,S,AREA,,17,26,1
1458 ASEL,R,LOC,X,-100.0,0.0,
1459 ESEL,A
1460 SET,NEAR,,,,TMTMAX,
1461 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1462 /SHOW,solupk,grph,0,8,
1463 /CONTOUR,1,128,AUTO,
1464 PLNSOL,TEMP,
1465 /COM,      Create temperature contour plots at 5, 10, 50, and 100 yrs
1466 SET,NEAR,,,,(TM_START+(5*TMI1)),
1467 /TITLE, DHLW WP at 5 years
1468 /SHOW,solu5,grph,0,8,
1469 /CONTOUR,1,128,USER,
1470 PLNSOL,TEMP,
1471 SET,NEAR,,,,TME10,
1472 /TITLE, DHLW WP at 10 years
1473 /SHOW,solu10,grph,0,8,
1474 /CONTOUR,1,128,USER,
1475 PLNSOL,TEMP,
1476 SET,NEAR,,,,TME50,
1477 /TITLE, DHLW WP at 50 years
1478 /SHOW,solu50,grph,0,8,
1479 /CONTOUR,1,128,USER,
1480 PLNSOL,TEMP,
1481 SET,NEAR,,,,TME100,
1482 /TITLE, DHLW WP at 100 years
1483 /SHOW,solu100,grph,0,8,
1484 /CONTOUR,1,128,USER,
1485 PLNSOL,TEMP,
1486 ESEL,ALL,
1487 FINISH
1488 /COM, *****

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1489 /COM,          Print time/temperature output at specific locations
1490 /COM,          Save profile from center to edge
1491 /COM,
1492 /COM,          Variable Legend: A01i000
1493 /COM,          t = structural stainless Canister near center line
1494 /COM,          c = center of Glass log
1495 /COM,          h = halfway between center and Canister
1496 /COM,          s = structural stainless Canister
1497 /COM,          i = inner barrier of DC
1498 /COM,          o = outer barrier of DC
1499 /COM,          ## = cartesian quadrant number of Canister
1500 /COM,          i = side of assembly toward center of WP
1501 /COM,          o = side of assembly toward edge of WP
1502 /COM,          045 = profile 45 deg down
1503 /COM,          135 = profile 45 deg up
1504 /POST26,
1505 NUMVAR,32,
1506 /COM,          *****
1507 /COM,          *Temperature Profile from center to lower right (45 deg.) z=2/3*
1508 /COM,          *****
1509 NSOL, 2,(NODE(TCO45,      (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1510 NSOL, 3,(NODE(TCI45,      (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1511 NSOL, 4,(NODE(HCI45,      (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1512 NSOL, 5,(NODE(CCO45,      (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1513 NSOL, 6,(NODE(HCO45,      (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1514 NSOL, 7,(NODE(SCI45,      (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1515 NSOL, 8,(NODE(SCO45,      (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1516 NSOL, 9,(NODE(MI45,       (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1517 NSOL,10,(NODE(MO45,       (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1518 NSOL,11,(NODE(DO45,       (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1519 PRVAR, 2, 3, 4, 5, 6, 7,
1520 PRVAR, 8, 9,10,11,
1521 /COM,          *****
1522 /COM,          * Temperature Profile from center to lower right (45 deg.) *
1523 /COM,          *****
1524 NSOL, 2,(NODE(TCO45,      (-1.0*TCO45),0.0)),TEMP,,t04i045,
1525 NSOL, 3,(NODE(TCI45,      (-1.0*TCI45),0.0)),TEMP,,t04o045,
1526 NSOL, 4,(NODE(HCI45,      (-1.0*HCI45),0.0)),TEMP,,h04i045,
1527 NSOL, 5,(NODE(CCO45,      (-1.0*CCO45),0.0)),TEMP,,c04i045,
1528 NSOL, 6,(NODE(HCO45,      (-1.0*HCO45),0.0)),TEMP,,h04o045,
1529 NSOL, 7,(NODE(SCI45,      (-1.0*SCI45),0.0)),TEMP,,s04i045,
1530 NSOL, 8,(NODE(SCO45,      (-1.0*SCO45),0.0)),TEMP,,s04o045,
1531 NSOL, 9,(NODE(MI45,       (-1.0*MI45),0.0)),TEMP,,i04i045,
1532 NSOL,10,(NODE(MO45,       (-1.0*MO45),0.0)),TEMP,,i04o045,
1533 NSOL,11,(NODE(DO45,       (-1.0*DO45),0.0)),TEMP,,o04o045,
1534 PRVAR, 2, 3, 4, 5, 6, 7,
1535 PRVAR, 8, 9,10,11,
1536 /COM,          *****
1537 /COM,          *****
1538 /COM,          * Temperature Profile from center to upper right (135 deg.) *
1539 /COM,          *****
1540 NSOL, 2,(NODE(TCO45,      TCO45,0.0)),TEMP,,t01i135,
1541 NSOL, 3,(NODE(TCI45,      TCI45,0.0)),TEMP,,t01o135,
1542 NSOL, 4,(NODE(HCI45,      HCI45,0.0)),TEMP,,h01i135,
1543 NSOL, 5,(NODE(CCO45,      CCO45,0.0)),TEMP,,c01i135,
1544 NSOL, 6,(NODE(HCO45,      HCO45,0.0)),TEMP,,h01o135,
1545 NSOL, 7,(NODE(SCI45,      SCI45,0.0)),TEMP,,s01i135,
1546 NSOL, 8,(NODE(SCO45,      SCO45,0.0)),TEMP,,s01o135,
1547 NSOL, 9,(NODE(MI45,       MI45,0.0)),TEMP,,i01i135,
1548 NSOL,10,(NODE(MO45,       MO45,0.0)),TEMP,,i01o135,
1549 NSOL,11,(NODE(DO45,       DO45,0.0)),TEMP,,o01o135,
1550 PRVAR, 2, 3, 4, 5, 6, 7,
1551 PRVAR, 8, 9,10,11,
1552 /COM,          *****
1553 /COM,          *****
1554 /COM,          * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1555 /COM,          *****
1556 NSOL, 2,(NODE(TCO45,      (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1557 NSOL, 3,(NODE(TCI45,      (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1558 NSOL, 4,(NODE(HCI45,      (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,

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1559 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), (-1*BTPT4))), TEMP, ,cb4i045,
1560 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), (-1*BTPT4))), TEMP, ,hb4o045,
1561 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), (-1*BTPT4))), TEMP, ,sb4i045,
1562 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, ,sb4o045,
1563 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, ,ib4i045,
1564 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, ,ib4o045,
1565 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, ,ob4o045,
1566 PRVAR, 2, 3, 4, 5, 6, 7,
1567 PRVAR, 8, 9, 10, 11,
1568 /COM,
1569 /COM, *****
1570 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1571 /COM, *****
1572 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, ,t01i135,
1573 NSOL, 3, (NODE(      TCI45,      TCI45, (-1*BTPT4))), TEMP, ,t01o135,
1574 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, ,h01i135,
1575 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, ,c01i135,
1576 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, ,h01o135,
1577 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, ,s01i135,
1578 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, ,s01o135,
1579 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, ,i01i135,
1580 NSOL, 10, (NODE(      MO45,      MO45, (-1*BTPT4))), TEMP, ,i01o135,
1581 NSOL, 11, (NODE(      DO45,      DO45, (-1*BTPT4))), TEMP, ,o01o135,
1582 PRVAR, 2, 3, 4, 5, 6, 7,
1583 PRVAR, 8, 9, 10, 11,
1584 /COM,
1585 /COM, *****
1586 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1587 /COM, *****
1588 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, ,tt4i045,
1589 NSOL, 3, (NODE(      TCI45,      (-1.0*TCI45), TPPT6)), TEMP, ,tt4o045,
1590 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, ,ht4i045,
1591 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, ,ct4i045,
1592 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, ,ht4o045,
1593 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, ,st4i045,
1594 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, ,st4o045,
1595 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, ,it4i045,
1596 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), TPPT6)), TEMP, ,it4o045,
1597 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), TPPT6)), TEMP, ,ot4o045,
1598 PRVAR, 2, 3, 4, 5, 6, 7,
1599 PRVAR, 8, 9, 10, 11,
1600 /COM,
1601 /COM, *****
1602 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1603 /COM, *****
1604 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, ,t01i135,
1605 NSOL, 3, (NODE(      TCI45,      TCI45, TPPT6)), TEMP, ,t01o135,
1606 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, ,h01i135,
1607 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, ,c01i135,
1608 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, ,h01o135,
1609 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, ,s01i135,
1610 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, ,s01o135,
1611 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, ,i01i135,
1612 NSOL, 10, (NODE(      MO45,      MO45, TPPT6)), TEMP, ,i01o135,
1613 NSOL, 11, (NODE(      DO45,      DO45, TPPT6)), TEMP, ,o01o135,
1614 PRVAR, 2, 3, 4, 5, 6, 7,
1615 PRVAR, 8, 9, 10, 11,
1616 /COM,
1617 /COM, *****
1618 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1619 /COM, *****
1620 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, ,ot1o135,
1621 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, ,ot1i135,
1622 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, ,it1o135,
1623 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, ,it1i135,
1624 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, ,st1o135,
1625 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, ,st1i135,
1626 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, ,ht1i135,
1627 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, ,gt1i135,
1628 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, ,c01i135,

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1629 NSOL,11,(NODE( CCO45, CCO45, (-0.33*BTPT4))),TEMP,,gb1i135,
1630 NSOL,12,(NODE( CCO45, CCO45, (-0.66*BTPT4))),TEMP,,gb1h135,
1631 NSOL,13,(NODE( CCO45, CCO45, (-1.0*BTPT4))),TEMP,,sb1i135,
1632 NSOL,14,(NODE( CCO45, CCO45, (-1.0*BTPT3))),TEMP,,sb1o135,
1633 NSOL,15,(NODE( CCO45, CCO45, (-1.0*BTPT2))),TEMP,,ib1i135,
1634 NSOL,16,(NODE( CCO45, CCO45, (-1.0*BTPT1))),TEMP,,ib1o135,
1635 NSOL,17,(NODE( CCO45, CCO45, MIDPT)),TEMP,,ob1o135,
1636 PRVAR, 2, 3, 4, 5, 6, 7,
1637 PRVAR, 8, 9,10,11,12,13,
1638 PRVAR,14,15,16,17,
1639 /COM,
1640 /COM,
1641 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1642 /COM,
1643 NSOL, 2,(NODE( CCO45,(-1.0*CCO45), MIDPT)),TEMP,,ot4o045,
1644 NSOL, 3,(NODE( CCO45,(-1.0*CCO45), TPPT1)),TEMP,,ot4i045,
1645 NSOL, 4,(NODE( CCO45,(-1.0*CCO45), TPPT2)),TEMP,,it4o045,
1646 NSOL, 5,(NODE( CCO45,(-1.0*CCO45), TPPT3)),TEMP,,it4i045,
1647 NSOL, 6,(NODE( CCO45,(-1.0*CCO45), TPPT4)),TEMP,,st4o045,
1648 NSOL, 7,(NODE( CCO45,(-1.0*CCO45), TPPT5)),TEMP,,st4i045,
1649 NSOL, 8,(NODE( CCO45,(-1.0*CCO45), TPPT6)),TEMP,,ht4i045,
1650 NSOL, 9,(NODE( CCO45,(-1.0*CCO45), ( 0.5*TPPT6))),TEMP,,gt4i045,
1651 NSOL,10,(NODE( CCO45,(-1.0*CCO45), 0.0)),TEMP,,c04i045,
1652 NSOL,11,(NODE( CCO45,(-1.0*CCO45), (-0.33*BTPT4))),TEMP,,gb4i045,
1653 NSOL,12,(NODE( CCO45,(-1.0*CCO45), (-0.66*BTPT4))),TEMP,,gb4h045,
1654 NSOL,13,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT4))),TEMP,,sb4i045,
1655 NSOL,14,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT3))),TEMP,,sb4o045,
1656 NSOL,15,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT2))),TEMP,,ib4i045,
1657 NSOL,16,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT1))),TEMP,,ib4o045,
1658 NSOL,17,(NODE( CCO45,(-1.0*CCO45), MIDPT)),TEMP,,ob4o045,
1659 PRVAR, 2, 3, 4, 5, 6, 7,
1660 PRVAR, 8, 9,10,11,12,13,
1661 PRVAR,14,15,16,17,
1662 /COM,
1663 /COM,
1664 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1665 /COM,
1666 NSOL, 2,(NODE( TCO45, TCO45, MIDPT)),TEMP,,ot1oise,
1667 NSOL, 3,(NODE( TCO45, TCO45, TPPT1)),TEMP,,ot1iise,
1668 NSOL, 4,(NODE( TCO45, TCO45, TPPT2)),TEMP,,it1oise,
1669 NSOL, 5,(NODE( TCO45, TCO45, TPPT3)),TEMP,,it1iise,
1670 NSOL, 6,(NODE( TCO45, TCO45, TPPT4)),TEMP,,st1oise,
1671 NSOL, 7,(NODE( TCO45, TCO45, TPPT5)),TEMP,,st1iise,
1672 NSOL, 8,(NODE( TCO45, TCO45, TPPT6)),TEMP,,ht1iise,
1673 NSOL, 9,(NODE( TCO45, TCO45, ( 0.5*TPPT6))),TEMP,,gt1iise,
1674 NSOL,10,(NODE( TCO45, TCO45, 0.0)),TEMP,,c01iise,
1675 NSOL,11,(NODE( TCO45, TCO45, (-0.33*BTPT4))),TEMP,,gb1iise,
1676 NSOL,12,(NODE( TCO45, TCO45, (-0.66*BTPT4))),TEMP,,gb1hise,
1677 NSOL,13,(NODE( TCO45, TCO45, (-1.0*BTPT4))),TEMP,,sb1iise,
1678 NSOL,14,(NODE( TCO45, TCO45, (-1.0*BTPT3))),TEMP,,sb1oise,
1679 NSOL,15,(NODE( TCO45, TCO45, (-1.0*BTPT2))),TEMP,,ib1iise,
1680 NSOL,16,(NODE( TCO45, TCO45, (-1.0*BTPT1))),TEMP,,ib1oise,
1681 NSOL,17,(NODE( TCO45, TCO45, MIDPT)),TEMP,,ob1oise,
1682 PRVAR, 2, 3, 4, 5, 6, 7,
1683 PRVAR, 8, 9,10,11,12,13,
1684 PRVAR,14,15,16,17,
1685 /COM,
1686 /COM,
1687 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1688 /COM,
1689 NSOL, 2,(NODE( SCO45, SCO45, MIDPT)),TEMP,,ot1oose,
1690 NSOL, 3,(NODE( SCO45, SCO45, TPPT1)),TEMP,,ot1iise,
1691 NSOL, 4,(NODE( SCO45, SCO45, TPPT2)),TEMP,,it1oose,
1692 NSOL, 5,(NODE( SCO45, SCO45, TPPT3)),TEMP,,it1iise,
1693 NSOL, 6,(NODE( SCO45, SCO45, TPPT4)),TEMP,,st1oose,
1694 NSOL, 7,(NODE( SCO45, SCO45, TPPT5)),TEMP,,st1iise,
1695 NSOL, 8,(NODE( SCO45, SCO45, TPPT6)),TEMP,,ht1iise,
1696 NSOL, 9,(NODE( SCO45, SCO45, ( 0.5*TPPT6))),TEMP,,gt1iise,
1697 NSOL,10,(NODE( SCO45, SCO45, 0.0)),TEMP,,c01iise,
1698 NSOL,11,(NODE( SCO45, SCO45, (-0.33*BTPT4))),TEMP,,gb1iise,

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1699 NSOL,12,(NODE(      SCO45,      SCO45,      (-0.66*BTPT4))),TEMP,,gb1hose,
1700 NSOL,13,(NODE(      SCO45,      SCO45,      (-1.0*BTPT4))),TEMP,,sb1iose,
1701 NSOL,14,(NODE(      SCO45,      SCO45,      (-1.0*BTPT3))),TEMP,,sb1oose,
1702 NSOL,15,(NODE(      SCO45,      SCO45,      (-1.0*BTPT2))),TEMP,,ib1iose,
1703 NSOL,16,(NODE(      SCO45,      SCO45,      (-1.0*BTPT1))),TEMP,,ib1oose,
1704 NSOL,17,(NODE(      SCO45,      SCO45,      MIDPT)),TEMP,,ob1oose,
1705 PRVAR, 2, 3, 4, 5, 6, 7,
1706 PRVAR, 8, 9,10,11,12,13,
1707 PRVAR,14,15,16,17,
1708 /COM,
1709 /COM, *****
1710 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1711 /COM, *****
1712 NSOL, 2,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ot4oiose,
1713 NSOL, 3,(NODE(      TCO45,(-1.0*TCO45),      TPPT1)),TEMP,,ot4iiose,
1714 NSOL, 4,(NODE(      TCO45,(-1.0*TCO45),      TPPT2)),TEMP,,it4oiose,
1715 NSOL, 5,(NODE(      TCO45,(-1.0*TCO45),      TPPT3)),TEMP,,it4iiose,
1716 NSOL, 6,(NODE(      TCO45,(-1.0*TCO45),      TPPT4)),TEMP,,st4oiose,
1717 NSOL, 7,(NODE(      TCO45,(-1.0*TCO45),      TPPT5)),TEMP,,st4iiose,
1718 NSOL, 8,(NODE(      TCO45,(-1.0*TCO45),      TPPT6)),TEMP,,ht4iiose,
1719 NSOL, 9,(NODE(      TCO45,(-1.0*TCO45),      ( 0.5*TPPT6))),TEMP,,gt4iiose,
1720 NSOL,10,(NODE(      TCO45,(-1.0*TCO45),      0.0)),TEMP,,c04iiose,
1721 NSOL,11,(NODE(      TCO45,(-1.0*TCO45),      (-0.33*BTPT4))),TEMP,,gb4iiose,
1722 NSOL,12,(NODE(      TCO45,(-1.0*TCO45),      (-0.66*BTPT4))),TEMP,,gb4hiose,
1723 NSOL,13,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT4))),TEMP,,sb4iiose,
1724 NSOL,14,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT3))),TEMP,,sb4oiose,
1725 NSOL,15,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT2))),TEMP,,ib4iiose,
1726 NSOL,16,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT1))),TEMP,,ib4oiose,
1727 NSOL,17,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ob4oiose,
1728 PRVAR, 2, 3, 4, 5, 6, 7,
1729 PRVAR, 8, 9,10,11,12,13,
1730 PRVAR,14,15,16,17,
1731 /COM,
1732 /COM, *****
1733 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1734 /COM, *****
1735 NSOL, 2,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ot4oose,
1736 NSOL, 3,(NODE(      SCO45,(-1.0*SCO45),      TPPT1)),TEMP,,ot4iose,
1737 NSOL, 4,(NODE(      SCO45,(-1.0*SCO45),      TPPT2)),TEMP,,it4oose,
1738 NSOL, 5,(NODE(      SCO45,(-1.0*SCO45),      TPPT3)),TEMP,,it4iose,
1739 NSOL, 6,(NODE(      SCO45,(-1.0*SCO45),      TPPT4)),TEMP,,st4oose,
1740 NSOL, 7,(NODE(      SCO45,(-1.0*SCO45),      TPPT5)),TEMP,,st4iose,
1741 NSOL, 8,(NODE(      SCO45,(-1.0*SCO45),      TPPT6)),TEMP,,ht4iose,
1742 NSOL, 9,(NODE(      SCO45,(-1.0*SCO45),      ( 0.5*TPPT6))),TEMP,,gt4iose,
1743 NSOL,10,(NODE(      SCO45,(-1.0*SCO45),      0.0)),TEMP,,c04iose,
1744 NSOL,11,(NODE(      SCO45,(-1.0*SCO45),      (-0.33*BTPT4))),TEMP,,gb4iose,
1745 NSOL,12,(NODE(      SCO45,(-1.0*SCO45),      (-0.66*BTPT4))),TEMP,,gb4hiose,
1746 NSOL,13,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT4))),TEMP,,sb4iose,
1747 NSOL,14,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT3))),TEMP,,sb4oose,
1748 NSOL,15,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT2))),TEMP,,ib4iose,
1749 NSOL,16,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT1))),TEMP,,ib4oose,
1750 NSOL,17,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ob4oose,
1751 PRVAR, 2, 3, 4, 5, 6, 7,
1752 PRVAR, 8, 9,10,11,12,13,
1753 PRVAR,14,15,16,17,
1754 /COM,
1755 /COM, *****
1756 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1757 /COM, *****
1758 NSOL, 2,(NODE(      DCORD,0.0,      MIDPT)),TEMP,,otwoose,
1759 NSOL, 3,(NODE(      DCORD,0.0,      TPPT1)),TEMP,,otwiose,
1760 NSOL, 4,(NODE(      DCORD,0.0,      TPPT2)),TEMP,,itwoose,
1761 NSOL, 5,(NODE(      DCORD,0.0,      TPPT3)),TEMP,,itwiose,
1762 NSOL, 6,(NODE(      DCORD,0.0,      TPPT4)),TEMP,,stwoose,
1763 NSOL, 7,(NODE(      DCORD,0.0,      TPPT5)),TEMP,,stwiose,
1764 NSOL, 8,(NODE(      DCORD,0.0,      TPPT6)),TEMP,,htwiose,
1765 NSOL, 9,(NODE(      DCORD,0.0,      ( 0.5*TPPT6))),TEMP,,gtwiose,
1766 NSOL,10,(NODE(      DCORD,0.0,      0.0)),TEMP,,c0wiose,
1767 NSOL,11,(NODE(      DCORD,0.0,      (-0.33*BTPT4))),TEMP,,gbwiose,
1768 NSOL,12,(NODE(      DCORD,0.0,      (-0.66*BTPT4))),TEMP,,gbwoose,

```

```

1769 NSOL,13,(NODE( DCORD,0.0, (-1.0*BTPT4))),TEMP,,sbwiose,
1770 NSOL,14,(NODE( DCORD,0.0, (-1.0*BTPT3))),TEMP,,sbwoose,
1771 NSOL,15,(NODE( DCORD,0.0, (-1.0*BTPT2))),TEMP,,ibwiose,
1772 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1773 NSOL,17,(NODE( DCORD,0.0, MIDPT))),TEMP,,obwoose,
1774 PRVAR, 2, 3, 4, 5, 6, 7,
1775 PRVAR, 8, 9,10,11,12,13,
1776 PRVAR,14,15,16,17,
1777 FINISH
1778 /COM, *****
1779 /COM, End of batch input file
1780 /COM, *****
1781 SAVE,
1782 /EXIT,
1783 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP     /input,,inp,
ABBREVIATION= X3D     /show,3d,
ABBREVIATION= X11     /show,x11,
ABBREVIATION= VEC     /show,,,1,

```


ABBREVIATION= RAS /show,,,0,
 ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

 ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

 * *
 * File name: glss21x2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 * *
 * Material Property file: propsd1.dat *
 * *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 * *
 * *
 * SNF Heat Loads file: srpgls1.dat *
 * Initial Heat Load: 710 W/canister *
 * *
 * Surface Temp. file: c21x5a.parm *
 * 100 MTU/acre (24.7 kgU/m²) AML (High Thermal Loading) *
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 22.5 m *
 * WP c/c spacing = 16.165 m *
 * *

 Increase the number of database pages from 16 (256) to 32 Mb
 DONT DO: /CONFIG,nvpag,512,
 Work space must also be increased (-m 87) For Radiation Matix

TITLE=
 DHLW Glass Form Waste Package

SI UNITS SPECIFIED
 LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT = AMPS

 Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE *** CP= .680 TIME= 06:35:21
Restore ANSYS parameters from file= c21x5a.parm.

/INPUT FILE= c21x5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WSPC = 16.16500

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01
 PARAMETER IWALL = .2000000E-01
 PARAMETER DCORD = .8545000
 PARAMETER DCLEN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass hieght; hieght of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000

PARAMETER BTPT4 = 1.495000
 Top of WP
 PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)

FUEL = volumetric heat production (W/m3) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de

TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de

HCI45 = x coord. WP Center Line side of center Glass at

HCO45 = x coord. WP Edge side of center Glass at 45 deg.

CCO45 = x coord. Glass Center Line in Pour Can. at 45 de

SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.

SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.

MI45 = x coord. DCIRD at 45 deg.

MO45 = x coord. DCIRD+IWALL at 45 deg.

DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TCO45 = .1094244
 PARAMETER TCI45 = .1161419
 PARAMETER HCI45 = .2205462
 PARAMETER HCO45 = .4293549
 PARAMETER CCO45 = .3249505
 PARAMETER SCO45 = .5404767
 PARAMETER SCI45 = .5337592
 PARAMETER MI45 = .5547253
 PARAMETER MO45 = .5688674
 PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 06:35:22 NOV 05, 1995 CP= 1.430

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **
** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSW2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **
** Emissivity EMIS **
** Conductivity: KXX (W/m/K) **
** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1

SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1
SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 21.11000 37.78000 65.56000
 93.33000 121.1100 148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 176.6700 204.4400 232.2200
 260.0000 287.7800 315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***
 SLOC= 13 343.3300 371.1100 398.8900
 426.6700 454.4400 482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***
 SLOC= 19 510.0000 537.7800 565.5600
 593.3300 621.1100 648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***
 SLOC= 25 676.6700 704.4400 732.2200
 760.0000 787.7800 815.5600

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 6
 SLOC= 1 13.33000 13.67000 14.19000 14.54000
 15.06000 15.58000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 12
 SLOC= 7 15.92000 16.44000 16.96000 17.31000
 17.83000 18.17000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 18
 SLOC= 13 18.52000 19.04000 19.38000 19.90000
 20.25000 20.77000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 24
 SLOC= 19 21.11000 21.46000 21.98000 22.33000
 22.67000 23.02000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 30
 SLOC= 25 23.54000 23.88000 24.23000 24.58000
 24.92000 25.27000

PROPERTY TABLE C MAT= 1 NUM. POINTS= 6
 SLOC= 1 481.6800 486.9200 498.0900 499.3800
 509.9800 520.2900

PROPERTY TABLE C MAT= 1 NUM. POINTS= 12
 SLOC= 7 521.0700 527.3800 536.9200 537.3400
 543.0200 543.3100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 18
 SLOC= 13 546.9100 552.1400 552.2600 557.2200
 557.2500 565.1100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 24
 SLOC= 19 565.0100 564.9100 572.3500 572.1400
 574.9200 574.6800

PROPERTY TABLE C MAT= 1 NUM. POINTS= 30
 SLOC= 25 581.6400 581.3000 583.8600 586.3600
 585.9600 588.3900

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 6
 SLOC= 1 40.84000 41.36000 41.88000 42.23000
 42.23000 42.23000

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 12
 SLOC= 7 42.06000 41.88000 41.36000 41.02000
 40.50000 39.98000

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	18	
SLOC= 13	39.29000	38.77000	38.08000	37.56000	
	36.69000	36.17000			

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	24	
SLOC= 19	35.48000	34.61000	33.92000	33.23000	
	32.36000	31.50000			

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	30	
SLOC= 25	30.29000	28.90000	27.35000	26.48000	
	26.13000	26.13000			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	6	
SLOC= 1	428.7200	444.9500	460.9400	476.8700	
	486.0800	495.6600			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	12	
SLOC= 7	506.0900	517.0700	525.6400	536.9900	
	543.6300	550.6200			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	18	
SLOC= 13	562.2100	577.3200	589.1000	600.5700	
	611.3500	629.0900			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	24	
SLOC= 19	645.3200	665.1200	682.0700	694.5200	
	724.0700	761.9500			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	30	
SLOC= 25	806.3100	888.6000	1095.040	1638.780	
	808.6800	736.9000			

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	6 ***
SLOC= 1	93.33000	121.1100
	176.6700	204.4400

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	12 ***
SLOC= 7	260.0000	287.7800
	343.3300	371.1100

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	18 ***
SLOC= 13	426.6700	454.4400
	510.0000	537.7800

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	24 ***
SLOC= 19	593.3300	621.1100
	676.6700	704.4400

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	27 ***
SLOC= 25	760.0000	787.7800
		815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	6	
SLOC= 1	12.29000	12.63000	13.15000	13.67000	
	14.02000	14.54000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	12	
SLOC= 7	14.88000	15.40000	15.75000	16.10000	
	16.61000	16.96000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	18	
SLOC= 13	17.31000	17.65000	18.00000	18.52000	
	18.86000	19.21000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	24	
SLOC= 19	19.73000	20.08000	20.42000	20.94000	

21.46000 21.98000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 27
 SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 93.33000 121.1100 148.8900
 176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 260.0000 287.7800 315.5600
 343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***
 SLOC= 13 426.6700 454.4400 482.2200
 510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6
 SLOC= 1 460.6900 477.4200 501.0200 504.6500
 498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12
 SLOC= 7 536.8800 559.8500 576.8300 576.2100
 581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17
 SLOC= 13 619.5800 636.7600 654.2000 678.2500
 696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***
 SLOC= 1 25.00000 50.00000 94.00000
 95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***
 SLOC= 5 105.0000 114.0000 115.0000
 155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***
 SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4
 SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8
 SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11
 SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, ~10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -13.15000 6.850000 26.85000
 76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 226.8500 276.8500 326.8500

376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***
SLOC= 13 526.8500 626.8500 726.8500

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6
SLOC= 1 .1875000 .1750000 .1625000 .1422000
.1219000 .1097000

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12
SLOC= 7 .9750000E-01 .9060000E-01 .8360000E-01 .7670000E-01
.6970000E-01 .6620000E-01

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15
SLOC= 13 .6270000E-01 .5580000E-01 .4880000E-01

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6
SLOC= 1 .1370000 .1450000 .1520000 .1700000
.1870000 .2040000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12
SLOC= 7 .2200000 .2360000 .2520000 .2640000
.2780000 .2910000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15
SLOC= 13 .3040000 .3300000 .3540000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6
SLOC= 1 1.348000 1.254700 1.161400 .9950000
.8711000 .7740000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12
SLOC= 7 .6964000 .6329000 .5804000 .5356000
.4975000 .4643000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15
SLOC= 13 .4354000 .3868000 .3482000

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6
SLOC= 1 .2300000E-01 .2500000E-01 .2600000E-01 .3000000E-01
.3400000E-01 .3700000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12
SLOC= 7 .4100000E-01 .4400000E-01 .4700000E-01 .5000000E-01
.5200000E-01 .5500000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15
SLOC= 13 .5700000E-01 .6200000E-01 .6700000E-01

PROPERTY TABLE C MAT= 8 NUM. POINTS= 6
SLOC= 1 1006.200 1006.600 1007.000 1009.000
1014.000 1021.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 12
SLOC= 7 1030.000 1040.000 1051.000 1063.000
1075.000 1087.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 15
SLOC= 13 1099.000 1121.000 1141.000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6
SLOC= 1 1.303700 1.213500 1.123300 .9625000
.8425000 .7485000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12
SLOC= 7 .6739000 .6124000 .5615000 .5214000
.4812000 .4512000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15

SLOC= 13 .4211000 .3743000 .3368000

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6
 SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
 .3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
 SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
 .5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
 SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
 SLOC= 1 1041.800 1041.400 1041.000 1042.000
 1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
 SLOC= 7 1056.000 1065.000 1075.000 1086.500
 1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
 SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
 SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
 .2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
 SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
 .3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
 SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -73.15000 26.85000 126.8500
 326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
 SLOC= 1 413.0000 401.0000 393.0000 379.0000
 366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
 SLOC= 1 356.0000 385.0000 397.0000 417.0000
 433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
 SLOC= 1 23.00000 50.00000 100.0000
 150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
 SLOC= 1 182.5600 190.1700 199.2200 202.9100
 203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
 SLOC= 1 868.0000 903.0000 946.0000 976.0000
 998.0000

 ** End of Material Property List **

Define new material 15 for low thermal loading
 outer barrier of 70/30 Copper Nickel (C71500)
 Density: DENS (kg/m³)
 Emissivity: EMIS
 Conductivity: KXX (W/m/K)
 Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .000000E+00
 Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
 Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
 Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
 Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
 Calculate the volumetric heat generation
 (Assembly time is in years, FUEL is in seconds)

/INPUT FILE= srpgls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
 ** Output Calculated by T. L. Lotz 5/04/95 for ORNL Report Data **

** Executable File Name: MATHCAD.EXE **
 ** Output File Name: srpgls1.dat **
 ** Execution Date: 05/04/95 **
 ** Start Age (years): 0.0 **
 ** Decay Period (years): 10000 **
 ** Enrichment (kg Pu): N.A. **
 ** Burnup (MWd/MTHM): N.A. **
 ** Assembly Type: SR Pour Canisters **
 ** Pu Fract. (kg Pu/KG HM): N.A. **

**
 ** ASSY(#,1) is the Pour Cainster heat in Watts.
 ** ASSY(#,0) is the time post emplacement in years.

PARAMETER ASSY(1,1) =	710.1000 705.7000	709.0000 704.6000	707.9000	706.8000
PARAMETER ASSY(7,1) =	703.5000 699.2000	702.4000 694.0000	701.3000	700.3000
PARAMETER ASSY(13,1) =	689.0000 670.8000	684.2000 666.6000	679.6000	675.1000
PARAMETER ASSY(19,1) =	662.6000 647.7000	658.7000 644.3000	654.9000	651.3000
PARAMETER ASSY(25,1) =	641.0000 628.9000	637.9000 604.4000	634.8000	631.8000
PARAMETER ASSY(31,1) =	585.9000 541.5000	571.6000 533.8000	559.9000	550.0000
PARAMETER ASSY(37,1) =	526.7000 501.7000	520.0000 496.0000	513.7000	507.6000
PARAMETER ASSY(43,1) =	490.4000 468.8000	484.8000 419.6000	479.4000	474.1000
PARAMETER ASSY(49,1) =	376.0000 244.2000	337.1000 219.8000	302.5000	271.7000
PARAMETER ASSY(55,1) =	198.0000 131.9000	178.5000 119.5000	161.2000	145.7000
PARAMETER ASSY(61,1) =	108.5000 74.84000	98.64000 33.63000	89.82000	81.92000
PARAMETER ASSY(67,1) =	18.33000 4.549000	11.66000 3.529000	8.147000	5.996000
PARAMETER ASSY(73,1) =	2.793000 1.372000	2.258000 1.218000	1.868000	1.582000
PARAMETER ASSY(79,1) =	1.105000 .8819000	1.022000 .7813000	.9608000	.9155000
PARAMETER ASSY(85,1) =	.7602000 .6900000	.7425000 .6725000	.7250000	.7075000
PARAMETER ASSY(91,1) =	.6550000 .5850000	.6375000 .5675000	.6200000	.6025000
PARAMETER ASSY(97,1) =	.5500000 .4800000	.5325000	.5150000	.4975000
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000

PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000
PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
INPUT MATRIX= ASSY(1,0)
INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
FUEL(1) = COPY ASSY(1)
SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
if use CSYS,0, the P. Cans are 2x2,
if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,0,45,0,0,0,0,

Construct geometry for a single SRP Pour Canister
(K's 1 - 10)

(L's 1 - 16)
(A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.= 1	KP1= 3	TAN1=	-.7071	-.7071	.0000
	KP2= 2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.= 2	KP1= 2	TAN1=	-.7071	.7071	.0000
	KP2= 6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.= 3	KP1= 4	TAN1=	-.7071	.7071	.0000
	KP2= 2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.= 4	KP1= 2	TAN1=	-.7071	-.7071	.0000
	KP2= 5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT=	2
RADIUS= .29530			
LINE NO.= 5	KP1= 6	TAN1=	-.7071
	KP2= 5	TAN2=	-.7071
			.0000

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT=	2
RADIUS= .29530			
LINE NO.= 6	KP1= 5	TAN1=	.7071
	KP2= 4	TAN2=	-.7071
			.0000

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT=	2
RADIUS= .29530			
LINE NO.= 7	KP1= 4	TAN1=	.7071
	KP2= 3	TAN2=	.7071
			.0000

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT=	2
RADIUS= .29530			
LINE NO.= 8	KP1= 3	TAN1=	-.7071
	KP2= 6	TAN2=	.7071
			.0000

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.= 9	KP1= 7	TAN1=	-.7071	-.7071	.0000
	KP2= 3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.= 10	KP1= 10	TAN1=	.7071	-.7071	.0000
	KP2= 6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.= 11	KP1= 9	TAN1=	.7071	.7071	.0000
	KP2= 5	TAN2=	-.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS 8 4
 LINE NO.= 12 KP1= 8 TAN1= -.7071 .7071 .0000
 KP2= 4 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 7 AND 8 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 13 KP1= 7 TAN1= .7071 -.7071 .0000
 KP2= 8 TAN2= .7071 .7071 .0000

ARC BETWEEN KEYPOINTS 8 AND 9 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 14 KP1= 8 TAN1= -.7071 -.7071 .0000
 KP2= 9 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 9 AND 10 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 15 KP1= 9 TAN1= -.7071 .7071 .0000
 KP2= 10 TAN2= -.7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 10 AND 7 ORIENTATION KEYPOINT= 2
 RADIUS= .30480
 LINE NO.= 16 KP1= 10 TAN1= .7071 .7071 .0000
 KP2= 7 TAN2= -.7071 .7071 .0000

DEFINE AREA BY LIST OF LINES
 LINE LIST = 2 4 5
 (TRAVERSED IN SAME DIRECTION AS LINE 2)
 AREA NUMBER = 1

DEFINE AREA BY LIST OF LINES
 LINE LIST = 1 2 8
 (TRAVERSED IN SAME DIRECTION AS LINE 1)
 AREA NUMBER = 2

DEFINE AREA BY LIST OF LINES
 LINE LIST = 1 3 7
 (TRAVERSED IN SAME DIRECTION AS LINE 1)
 AREA NUMBER = 3

DEFINE AREA BY LIST OF LINES
 LINE LIST = 3 4 6
 (TRAVERSED IN SAME DIRECTION AS LINE 3)
 AREA NUMBER = 4

DEFINE AREA BY LIST OF LINES
 LINE LIST = 5 10 15 11
 (TRAVERSED IN SAME DIRECTION AS LINE 5)
 AREA NUMBER = 5

DEFINE AREA BY LIST OF LINES
 LINE LIST = 8 9 16 10
 (TRAVERSED IN SAME DIRECTION AS LINE 8)
 AREA NUMBER = 6

DEFINE AREA BY LIST OF LINES
 LINE LIST = 7 12 13 9
 (TRAVERSED IN SAME DIRECTION AS LINE 7)
 AREA NUMBER = 7

DEFINE AREA BY LIST OF LINES
 LINE LIST = 6 11 14 12
 (TRAVERSED IN SAME DIRECTION AS LINE 6)

AREA NUMBER = 8

Interior and WP, Next

(K's 11 - 19)

(L's 17 - 34)

(A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1= 1	TAN1=	-.7071	-.7071	.0000
	KP2= 7	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1= 10	TAN1=	-.9125	-.4092	.0000
	KP2= 11	TAN2=	.9125	.4092	.0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1= 9	TAN1=	-.7071	-.7071	.0000
	KP2= 12	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1= 8	TAN1=	-.4092	-.9125	.0000
	KP2= 13	TAN2=	.4092	.9125	.0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1= 1	TAN1=	.0000	-1.0000	.0000
	KP2= 13	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1= 1	TAN1=	-1.0000	.0000	.0000
	KP2= 11	TAN2=	1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS	11 AND 12	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 23	KP1= 11	TAN1=	.0000 -1.0000 .0000
	KP2= 12	TAN2=	-.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	12 AND 13	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 24	KP1= 12	TAN1=	.7071 -.7071 .0000
	KP2= 13	TAN2=	-1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1= 11	TAN1=	-1.0000	.0000	.0000
	KP2= 14	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1= 12	TAN1=	-.7071	-.7071	.0000
	KP2= 15	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	16	13			
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LINE NO.= 27 KP1= 16 TAN1= .0000 1.0000 .0000
 KP2= 13 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1

RADIUS= .80450

LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
 KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1

RADIUS= .80450

LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
 KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17

LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
 KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18

LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
 KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16

LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
 KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1

RADIUS= .85450

LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
 KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1

RADIUS= .85450

LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
 KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES

LINE LIST = 22 18 16 17
 (TRAVERSED IN SAME DIRECTION AS LINE 22)

AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES

LINE LIST = 23 19 15 18
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES

LINE LIST = 24 20 14 19
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES

LINE LIST = 21 17 13 20
 (TRAVERSED IN SAME DIRECTION AS LINE 21)

AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES

LINE LIST = 23 25 28 26
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES

LINE LIST = 24 26 29 27
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas
glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.930 TIME= 06:35:24
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.950 TIME= 06:35:24
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.950 TIME= 06:35:24
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.020 TIME= 06:35:24
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.040 TIME= 06:35:24
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.040 TIME= 06:35:24
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
92 93 94 95 96

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 105
MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 123
MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 141
MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces

(K's 20 - 31)

(L's 35 - 46)

Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	20				
LINE NO.= 35	KP1=	1	TAN1=	.0000	.0000	1.0000
	KP2=	20	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	20	21				
LINE NO.= 36	KP1=	20	TAN1=	.0000	.0000	1.0000
	KP2=	21	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	21	22				
LINE NO.= 37	KP1=	21	TAN1=	.0000	.0000	1.0000
	KP2=	22	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	22	23				
LINE NO.= 38	KP1=	22	TAN1=	.0000	.0000	1.0000
	KP2=	23	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	23	24				
LINE NO.= 39	KP1=	23	TAN1=	.0000	.0000	1.0000
	KP2=	24	TAN2=	.0000	.0000	-1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
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KEYPOINT 26 X,Y,Z= .000000E+00 .000000E+00 1.21460 IN CSYS= 0
 KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 8.08250 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -8.08250 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000
KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000
KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000
KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000
KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000
KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000
 KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000
 Back Point

(K's 40 - 44).
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -8.08250 IN CSYS= 0
 KEYPOINT 41 X,Y,Z= 2.50000 .183300 -8.08250 IN CSYS= 0
 KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -8.08250 IN CSYS= 0
 KEYPOINT 43 X,Y,Z= -2.50000 .183300 -8.08250 IN CSYS= 0
 KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -8.08250 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT 45 X,Y,Z= 1.73494 -1.61670 8.08250 IN CSYS= 0

KEYPOINT 46 X,Y,Z= 2.50000 .183300 8.08250 IN CSYS= 0

KEYPOINT 47 X,Y,Z= .000000E+00 2.68330 8.08250 IN CSYS= 0

KEYPOINT 48 X,Y,Z= -2.50000 .183300 8.08250 IN CSYS= 0

KEYPOINT 49 X,Y,Z= -1.73494 -1.61670 8.08250 IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 59 KP1= 45 TAN1= -.7200 -.6940 .0000

KP2= 46 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 60 KP1= 46 TAN1= .0000 -1.0000 .0000

KP2= 47 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 61 KP1= 47 TAN1= 1.0000 .0000 .0000

KP2= 48 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 62 KP1= 48 TAN1= .0000 1.0000 .0000

KP2= 49 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 49 45

LINE NO.= 63 KP1= 49 TAN1= -1.0000 .0000 .0000

KP2= 45 TAN2= 1.0000 .0000 .0000

Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40

LINE NO.= 64 KP1= 35 TAN1= .0000 .0000 1.0000

KP2= 40 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 36 41

LINE NO.= 65 KP1= 36 TAN1= .0000 .0000 1.0000

KP2= 41 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66 KP1= 37 TAN1= .0000 .0000 1.0000
 KP2= 42 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(A's 17 - 26)

DEFINE AREA BY LIST OF LINES

LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.580 TIME= 06:35:24
Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES

LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.620 TIME= 06:35:24
Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES

LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.660 TIME= 06:35:24
Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES

LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.700 TIME= 06:35:24
Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES

LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 3.730 TIME= 06:35:24
Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES

LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 3.780 TIME= 06:35:24
Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES

LINE LIST = 61 72 51 71
(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 3.820 TIME= 06:35:24
Lines 61, 72, 51, and 71 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES
LINE LIST = 62 73 52 72
(TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.850 TIME= 06:35:25
Lines 62, 73, 52, and 72 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES
LINE LIST = 53 64 58 68
(TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES
LINE LIST = 63 69 53 73
(TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
MAXIMUM NODE NUMBER = 430
MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 481
MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
(K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50
LINE NO.= 74	KP1= 27	TAN1= -1.0000 .0000 .0000
	KP2= 50	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	27	51
LINE NO.= 75	KP1= 27	TAN1= .0000 -1.0000 .0000
	KP2= 51	TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS	50	52
LINE NO.= 76	KP1= 50	TAN1= -1.0000 .0000 .0000
	KP2= 52	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	51	53
LINE NO.= 77	KP1= 51	TAN1= .0000 -1.0000 .0000
	KP2= 53	TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS	52	54
LINE NO.= 78	KP1= 52	TAN1= -1.0000 .0000 .0000
	KP2= 54	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	53	55
LINE NO.= 79	KP1= 53	TAN1= .0000 -1.0000 .0000
	KP2= 55	TAN2= .0000 1.0000 .0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS 50 AND 51 ORIENTATION KEYPOINT= 27
RADIUS= .78450

LINE NO.= 80 KP1= 50 TAN1= .0000 -1.0000 .0000
 KP2= 51 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
 RADIUS= .80450

LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
 KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
 RADIUS= .85450

LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
 KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 74 TO 75 STEP 1

2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 80 TO 82 STEP 1

5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 76 TO 79 STEP 1

4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 82 STEP 1

82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 55 STEP 1

55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
 (A's 27 - 29)

DEFINE AREA BY LIST OF LINES
 LINE LIST = 74 75 80
 (TRAVERSED IN SAME DIRECTION AS LINE 74)

AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
 LINE LIST = 80 76 81 77
 (TRAVERSED IN SAME DIRECTION AS LINE 80)

AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
 LINE LIST = 81 78 82 79
 (TRAVERSED IN SAME DIRECTION AS LINE 81)

AREA NUMBER = 29

 Construct geometry for WP Bottom end

(K's 56 - 61)

KEYPOINT	56	X,Y,Z=	.784500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	57	X,Y,Z=	.000000E+00	.784500	-1.51000	IN CSYS= 0
KEYPOINT	58	X,Y,Z=	.804500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	59	X,Y,Z=	.000000E+00	.804500	-1.51000	IN CSYS= 0
KEYPOINT	60	X,Y,Z=	.854500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	61	X,Y,Z=	.000000E+00	.854500	-1.51000	IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS	21	56
LINE NO.= 83	KP1= 21	TAN1= -1.0000 .0000 .0000
	KP2= 56	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	21	57
LINE NO.= 84	KP1= 21	TAN1= .0000 -1.0000 .0000
	KP2= 57	TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS	56	58
LINE NO.= 85	KP1= 56	TAN1= -1.0000 .0000 .0000
	KP2= 58	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	57	59
LINE NO.= 86	KP1= 57	TAN1= .0000 -1.0000 .0000
	KP2= 59	TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS	58	60
LINE NO.= 87	KP1= 58	TAN1= -1.0000 .0000 .0000
	KP2= 60	TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	59	61
LINE NO.= 88	KP1= 59	TAN1= .0000 -1.0000 .0000
	KP2= 61	TAN2= .0000 1.0000 .0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS	56 AND 57	ORIENTATION KEYPOINT= 21
RADIUS= .78450		
LINE NO.= 89	KP1= 56	TAN1= .0000 -1.0000 .0000
	KP2= 57	TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS	58 AND 59	ORIENTATION KEYPOINT= 21
RADIUS= .80450		
LINE NO.= 90	KP1= 58	TAN1= .0000 -1.0000 .0000
	KP2= 59	TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS	60 AND 61	ORIENTATION KEYPOINT= 21
RADIUS= .85450		
LINE NO.= 91	KP1= 60	TAN1= .0000 -1.0000 .0000
	KP2= 61	TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES

```

    TO NDIV = 8, SPACING RATIO = 1.000

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    85 TO      88 STEP      1

    4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
    TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      29 STEP      1

    29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      91 STEP      1

    91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT  FOR ITEM=KP   COMPONENT=
IN RANGE    1 TO      61 STEP      1

    61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
    (A's 30 - 32 )

DEFINE AREA BY LIST OF LINES
    LINE LIST = 83 84 89
    (TRAVERSED IN SAME DIRECTION AS LINE 83)

    AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
    LINE LIST = 89 85 90 86
    (TRAVERSED IN SAME DIRECTION AS LINE 89)

    AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
    LINE LIST = 90 87 91 88
    (TRAVERSED IN SAME DIRECTION AS LINE 90)

    AREA NUMBER = 32
    Mesh areas
    Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
    PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
    IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6
MAXIMUM NODE NUMBER = 675
MAXIMUM ELEMENT NUMBER = 928
*****
    Extrude 2-D WP Interior into 3-D Space
    (V's 1 - 32)
    Bottom WP Area

DRAG AREAS
    1, 2, 3, 4,
    ALONG LINES
    35, 36,

DRAG AREAS

```

5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
9, 10, 11, 12,
ALONG LINES
35, 36,

DRAG AREAS
13, 14,
ALONG LINES
35, 36,

DRAG AREAS
15, 16,
ALONG LINES
35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.700 TIME= 06:35:29
Unmeshed line 178 is merged into meshed line 83.
LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.710 TIME= 06:35:29
Unmeshed line 196 is merged into meshed line 84.
LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.710 TIME= 06:35:29
Unmeshed line 218 is merged into meshed line 85.
LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.710 TIME= 06:35:29
Unmeshed line 221 is merged into meshed line 86.

LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 8.710 TIME= 06:35:29

Unmeshed line 244 is merged into meshed line 87.

LINE 88 USED FOR LINE(S) 247

*** WARNING *** CP= 8.710 TIME= 06:35:29

Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119
 LINE 95 USED FOR LINE(S) 118
 LINE 96 USED FOR LINE(S) 120
 LINE 99 USED FOR LINE(S) 127
 LINE 100 USED FOR LINE(S) 126
 LINE 102 USED FOR LINE(S) 132
 LINE 103 USED FOR LINE(S) 131
 LINE 104 USED FOR LINE(S) 136
 LINE 107 USED FOR LINE(S) 139
 LINE 108 USED FOR LINE(S) 138
 LINE 109 USED FOR LINE(S) 140
 LINE 112 USED FOR LINE(S) 147
 LINE 113 USED FOR LINE(S) 146
 LINE 115 USED FOR LINE(S) 152
 LINE 116 USED FOR LINE(S) 151
 LINE 117 USED FOR LINE(S) 156
 LINE 122 USED FOR LINE(S) 169
 LINE 123 USED FOR LINE(S) 170
 LINE 124 USED FOR LINE(S) 162
 LINE 128 USED FOR LINE(S) 163
 LINE 129 USED FOR LINE(S) 164
 LINE 133 USED FOR LINE(S) 177
 LINE 134 USED FOR LINE(S) 174
 LINE 137 USED FOR LINE(S) 175
 LINE 142 USED FOR LINE(S) 189
 LINE 143 USED FOR LINE(S) 190
 LINE 144 USED FOR LINE(S) 182
 LINE 148 USED FOR LINE(S) 183
 LINE 149 USED FOR LINE(S) 184
 LINE 153 USED FOR LINE(S) 197
 LINE 154 USED FOR LINE(S) 194
 LINE 157 USED FOR LINE(S) 195
 LINE 160 USED FOR LINE(S) 199
 LINE 166 USED FOR LINE(S) 198
 LINE 167 USED FOR LINE(S) 200
 LINE 171 USED FOR LINE(S) 206
 LINE 172 USED FOR LINE(S) 207
 LINE 180 USED FOR LINE(S) 212
 LINE 186 USED FOR LINE(S) 211
 LINE 187 USED FOR LINE(S) 213
 LINE 191 USED FOR LINE(S) 219
 LINE 192 USED FOR LINE(S) 220
 LINE 202 USED FOR LINE(S) 226
 LINE 203 USED FOR LINE(S) 224
 LINE 204 USED FOR LINE(S) 225
 LINE 209 USED FOR LINE(S) 233
 LINE 210 USED FOR LINE(S) 232
 LINE 215 USED FOR LINE(S) 239
 LINE 216 USED FOR LINE(S) 237
 LINE 217 USED FOR LINE(S) 238
 LINE 222 USED FOR LINE(S) 246
 LINE 223 USED FOR LINE(S) 245
 AREA 34 USED FOR AREA(S) 57
 AREA 38 USED FOR AREA(S) 62
 AREA 41 USED FOR AREA(S) 66
 AREA 43 USED FOR AREA(S) 70
 AREA 46 USED FOR AREA(S) 73
 AREA 50 USED FOR AREA(S) 78
 AREA 53 USED FOR AREA(S) 82
 AREA 55 USED FOR AREA(S) 86
 AREA 59 USED FOR AREA(S) 96
 AREA 63 USED FOR AREA(S) 91

AREA	67	USED FOR AREA(S)	103
AREA	71	USED FOR AREA(S)	100
AREA	75	USED FOR AREA(S)	112
AREA	79	USED FOR AREA(S)	107
AREA	83	USED FOR AREA(S)	119
AREA	87	USED FOR AREA(S)	116
AREA	94	USED FOR AREA(S)	121
AREA	98	USED FOR AREA(S)	126
AREA	110	USED FOR AREA(S)	130
AREA	114	USED FOR AREA(S)	135
AREA	123	USED FOR AREA(S)	139
AREA	128	USED FOR AREA(S)	144
AREA	132	USED FOR AREA(S)	148
AREA	137	USED FOR AREA(S)	153

(V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	25	USED FOR KEYPOINT(S)	131	
KEYPOINT	26	USED FOR KEYPOINT(S)	139	
KEYPOINT	27	USED FOR KEYPOINT(S)	147	
KEYPOINT	50	USED FOR KEYPOINT(S)	148	167
KEYPOINT	51	USED FOR KEYPOINT(S)	153	171
KEYPOINT	52	USED FOR KEYPOINT(S)	170	185
KEYPOINT	53	USED FOR KEYPOINT(S)	172	189
KEYPOINT	54	USED FOR KEYPOINT(S)	188	
KEYPOINT	55	USED FOR KEYPOINT(S)	190	
KEYPOINT	73	USED FOR KEYPOINT(S)	98	
KEYPOINT	76	USED FOR KEYPOINT(S)	99	
KEYPOINT	78	USED FOR KEYPOINT(S)	103	
KEYPOINT	80	USED FOR KEYPOINT(S)	105	
KEYPOINT	84	USED FOR KEYPOINT(S)	110	
KEYPOINT	86	USED FOR KEYPOINT(S)	111	
KEYPOINT	88	USED FOR KEYPOINT(S)	115	
KEYPOINT	90	USED FOR KEYPOINT(S)	117	
KEYPOINT	93	USED FOR KEYPOINT(S)	122	
KEYPOINT	95	USED FOR KEYPOINT(S)	123	
KEYPOINT	96	USED FOR KEYPOINT(S)	127	
KEYPOINT	97	USED FOR KEYPOINT(S)	129	
KEYPOINT	101	USED FOR KEYPOINT(S)	136	
KEYPOINT	102	USED FOR KEYPOINT(S)	133	
KEYPOINT	104	USED FOR KEYPOINT(S)	134	
KEYPOINT	108	USED FOR KEYPOINT(S)	138	
KEYPOINT	113	USED FOR KEYPOINT(S)	144	
KEYPOINT	114	USED FOR KEYPOINT(S)	141	

KEYPOINT 116 USED FOR KEYPOINT(S) 142
 KEYPOINT 120 USED FOR KEYPOINT(S) 146
 KEYPOINT 125 USED FOR KEYPOINT(S) 152
 KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 12.770 TIME= 06:35:33
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.770 TIME= 06:35:33
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.770 TIME= 06:35:33
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.770 TIME= 06:35:33
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.770 TIME= 06:35:33
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.780 TIME= 06:35:33
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282

LINE	200	USED FOR LINE(S)	287
LINE	213	USED FOR LINE(S)	300
LINE	218	USED FOR LINE(S)	301
LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231

AREA 183 USED FOR AREA(S) 228
 AREA 187 USED FOR AREA(S) 240
 AREA 191 USED FOR AREA(S) 235
 AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)

Bottom WP Area

DRAG AREAS

30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310
 (V's 90 - 101)

Top WP Area

DRAG AREAS

27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846

MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS
IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 960
MAXIMUM ELEMENT NUMBER = 1168
SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1017
MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.500 TIME= 06:35:38
Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.500 TIME= 06:35:38
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.540 TIME= 06:35:38
Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.540 TIME= 06:35:38
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.640 TIME= 06:35:38
Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.640 TIME= 06:35:38
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.740 TIME= 06:35:38
Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.740 TIME= 06:35:38
Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
MAXIMUM NODE NUMBER = 1081
MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1195
MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.250 TIME= 06:35:40
Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.250 TIME= 06:35:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.290 TIME= 06:35:40
Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.290 TIME= 06:35:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.370 TIME= 06:35:40
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.370 TIME= 06:35:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.450 TIME= 06:35:40
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.450 TIME= 06:35:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.610 TIME= 06:35:40
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.610 TIME= 06:35:40
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.640 TIME= 06:35:40
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.640 TIME= 06:35:40
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.740 TIME= 06:35:40
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.740 TIME= 06:35:40
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.840 TIME= 06:35:40
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.840 TIME= 06:35:40
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 20.470 TIME= 06:35:41
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.480 TIME= 06:35:41
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.520 TIME= 06:35:41
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.530 TIME= 06:35:41
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.650 TIME= 06:35:41
Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.650 TIME= 06:35:41
Worst aspect ratio is 49.8333333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.300 TIME= 06:35:42
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.310 TIME= 06:35:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.350 TIME= 06:35:42
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.350 TIME= 06:35:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.450 TIME= 06:35:42
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.460 TIME= 06:35:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.590 TIME= 06:35:42
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.590 TIME= 06:35:42
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.640 TIME= 06:35:42
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.640 TIME= 06:35:42
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.750 TIME= 06:35:42
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.750 TIME= 06:35:42
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888
Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2528

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1

He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
MAT, 7,

TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 28.570 TIME= 06:35:49
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.570 TIME= 06:35:49
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.580 TIME= 06:35:49
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.580 TIME= 06:35:49
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 06:35:49
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 06:35:49
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 06:35:49
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 06:35:49
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.610 TIME= 06:35:49
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.620 TIME= 06:35:49
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.620 TIME= 06:35:49
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.630 TIME= 06:35:49
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.650 TIME= 06:35:49
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.660 TIME= 06:35:49
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.690 TIME= 06:35:49
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only

elements are deleted.

*** NOTE *** CP= 28.700 TIME= 06:35:49
Nodes cannot be cleared from area 32 because volume 83 is meshed. Only
elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE	498	USED FOR NODES	1516
NODE	595	USED FOR NODES	1387
NODE	560	USED FOR NODES	1522
NODE	657	USED FOR NODES	1393
NODE	552	USED FOR NODES	1517
NODE	649	USED FOR NODES	1388
NODE	578	USED FOR NODES	2231
NODE	675	USED FOR NODES	2145
NODE	667	USED FOR NODES	2140
NODE	570	USED FOR NODES	2226
NODE	497	USED FOR NODES	1515
NODE	594	USED FOR NODES	1386
NODE	559	USED FOR NODES	1521
NODE	656	USED FOR NODES	1392
NODE	551	USED FOR NODES	1518
NODE	648	USED FOR NODES	1389
NODE	577	USED FOR NODES	2230
NODE	674	USED FOR NODES	2144
NODE	569	USED FOR NODES	2227
NODE	666	USED FOR NODES	2141
NODE	496	USED FOR NODES	1514
NODE	593	USED FOR NODES	1385
NODE	558	USED FOR NODES	1520
NODE	655	USED FOR NODES	1391
NODE	550	USED FOR NODES	1519
NODE	647	USED FOR NODES	1390
NODE	576	USED FOR NODES	2229
NODE	673	USED FOR NODES	2143
NODE	568	USED FOR NODES	2228
NODE	665	USED FOR NODES	2142
NODE	495	USED FOR NODES	1502
NODE	592	USED FOR NODES	1373

NODE 557 USED FOR NODES 1507
 NODE 654 USED FOR NODES 1378
 NODE 549 USED FOR NODES 1506
 NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.140 TIME= 06:35:51
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

 Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
 MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 3488 USED FOR NODES 5848
 NODE 4099 USED FOR NODES 6471
 NODE 4100 USED FOR NODES 6472
 NODE 4539 USED FOR NODES 6911
 NODE 4540 USED FOR NODES 6912
 NODE 4037 USED FOR NODES 6397
 NODE 5238 USED FOR NODES 7610
 NODE 5239 USED FOR NODES 7611
 NODE 4011 USED FOR NODES 6363
 NODE 4012 USED FOR NODES 6364
 NODE 3446 USED FOR NODES 5782
 NODE 4920 USED FOR NODES 7292
 NODE 4656 USED FOR NODES 7030
 NODE 4657 USED FOR NODES 7031
 NODE 4974 USED FOR NODES 7346
 NODE 4345 USED FOR NODES 6717
 NODE 4346 USED FOR NODES 6718
 NODE 3448 USED FOR NODES 5786
 NODE 3449 USED FOR NODES 5787
 NODE 3450 USED FOR NODES 5788
 NODE 4658 USED FOR NODES 7032
 NODE 3975 USED FOR NODES 6327
 NODE 3976 USED FOR NODES 6328
 NODE 4921 USED FOR NODES 7293
 NODE 4975 USED FOR NODES 7347
 NODE 4660 USED FOR NODES 7055
 NODE 3453 USED FOR NODES 5801
 NODE 3452 USED FOR NODES 5800
 NODE 4102 USED FOR NODES 6488
 NODE 4014 USED FOR NODES 6372
 NODE 4923 USED FOR NODES 7309
 NODE 3978 USED FOR NODES 6336
 NODE 4348 USED FOR NODES 6734
 NODE 4541 USED FOR NODES 6927
 NODE 4013 USED FOR NODES 6371
 NODE 5240 USED FOR NODES 7626
 NODE 3447 USED FOR NODES 5798
 NODE 4038 USED FOR NODES 6401
 NODE 4976 USED FOR NODES 7362
 NODE 4659 USED FOR NODES 7054
 NODE 4347 USED FOR NODES 6733
 NODE 3489 USED FOR NODES 5852
 NODE 3451 USED FOR NODES 5799
 NODE 3977 USED FOR NODES 6335
 NODE 4977 USED FOR NODES 7363
 NODE 4101 USED FOR NODES 6487
 NODE 4922 USED FOR NODES 7308
 NODE 4661 USED FOR NODES 7056
 NODE 5241 USED FOR NODES 7627
 NODE 4542 USED FOR NODES 6928
 NODE 3350 USED FOR NODES 5672
 NODE 4603 USED FOR NODES 6977
 NODE 5195 USED FOR NODES 7567
 NODE 3398 USED FOR NODES 5754
 NODE 4064 USED FOR NODES 6436
 NODE 4884 USED FOR NODES 7256

NODE	3947	USED FOR NODES	6303
NODE	4885	USED FOR NODES	7257
NODE	3347	USED FOR NODES	5667
NODE	3858	USED FOR NODES	6202
NODE	4503	USED FOR NODES	6875
NODE	4504	USED FOR NODES	6876
NODE	4063	USED FOR NODES	6435
NODE	4958	USED FOR NODES	7324
NODE	4966	USED FOR NODES	7325
NODE	3859	USED FOR NODES	6203
NODE	4602	USED FOR NODES	6976
NODE	4309	USED FOR NODES	6681
NODE	4310	USED FOR NODES	6682
NODE	3349	USED FOR NODES	5671
NODE	5194	USED FOR NODES	7566
NODE	3912	USED FOR NODES	6256
NODE	3913	USED FOR NODES	6257
NODE	3351	USED FOR NODES	5673
NODE	4604	USED FOR NODES	6978
NODE	3354	USED FOR NODES	5686
NODE	4606	USED FOR NODES	7001
NODE	3861	USED FOR NODES	6211
NODE	4312	USED FOR NODES	6698
NODE	4887	USED FOR NODES	7273
NODE	4066	USED FOR NODES	6452
NODE	3353	USED FOR NODES	5685
NODE	5197	USED FOR NODES	7584
NODE	5196	USED FOR NODES	7583
NODE	4505	USED FOR NODES	6891
NODE	3860	USED FOR NODES	6210
NODE	3948	USED FOR NODES	6307
NODE	4886	USED FOR NODES	7272
NODE	3399	USED FOR NODES	5758
NODE	4506	USED FOR NODES	6892
NODE	3348	USED FOR NODES	5683
NODE	4311	USED FOR NODES	6697
NODE	4605	USED FOR NODES	7000
NODE	4065	USED FOR NODES	6451
NODE	4607	USED FOR NODES	7002
NODE	3914	USED FOR NODES	6264
NODE	3352	USED FOR NODES	5684
NODE	5193	USED FOR NODES	7582
NODE	3915	USED FOR NODES	6265
NODE	4045	USED FOR NODES	6415
NODE	3943	USED FOR NODES	6297
NODE	4736	USED FOR NODES	7086
NODE	4737	USED FOR NODES	7087
NODE	4400	USED FOR NODES	6750
NODE	4575	USED FOR NODES	6946
NODE	4576	USED FOR NODES	6954
NODE	4577	USED FOR NODES	6955
NODE	4161	USED FOR NODES	6511
NODE	4399	USED FOR NODES	6749
NODE	4046	USED FOR NODES	6423
NODE	3331	USED FOR NODES	5639
NODE	3394	USED FOR NODES	5748
NODE	4162	USED FOR NODES	6512
NODE	3850	USED FOR NODES	6190
NODE	3335	USED FOR NODES	5647
NODE	3851	USED FOR NODES	6194
NODE	3336	USED FOR NODES	5651
NODE	5037	USED FOR NODES	7379
NODE	3337	USED FOR NODES	5652
NODE	3904	USED FOR NODES	6244
NODE	5045	USED FOR NODES	7387
NODE	5046	USED FOR NODES	7388
NODE	3905	USED FOR NODES	6248
NODE	5075	USED FOR NODES	7404
NODE	4752	USED FOR NODES	7085
NODE	4759	USED FOR NODES	7095

NODE	4184	USED	FOR	NODES	6520
NODE	4415	USED	FOR	NODES	6758
NODE	5068	USED	FOR	NODES	7396
NODE	4177	USED	FOR	NODES	6510
NODE	4422	USED	FOR	NODES	6766
NODE	5061	USED	FOR	NODES	7386
NODE	4766	USED	FOR	NODES	7103
NODE	4191	USED	FOR	NODES	6528
NODE	5069	USED	FOR	NODES	7395
NODE	4416	USED	FOR	NODES	6757
NODE	4753	USED	FOR	NODES	7084
NODE	4185	USED	FOR	NODES	6519
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NODE	1873	USED	FOR	NODES	9490
NODE	1600	USED	FOR	NODES	8929
NODE	1891	USED	FOR	NODES	9504
NODE	2667	USED	FOR	NODES	9812
NODE	1884	USED	FOR	NODES	9496
NODE	2649	USED	FOR	NODES	9798
NODE	2312	USED	FOR	NODES	9152
NODE	2320	USED	FOR	NODES	9159
NODE	1892	USED	FOR	NODES	9503
NODE	1601	USED	FOR	NODES	8928
NODE	1593	USED	FOR	NODES	8921
NODE	1583	USED	FOR	NODES	8914
NODE	2659	USED	FOR	NODES	9805
NODE	1874	USED	FOR	NODES	9489
NODE	1893	USED	FOR	NODES	9502
NODE	1602	USED	FOR	NODES	8927
NODE	2668	USED	FOR	NODES	9811
NODE	2313	USED	FOR	NODES	9151
NODE	1885	USED	FOR	NODES	9495
NODE	1584	USED	FOR	NODES	8913
NODE	1875	USED	FOR	NODES	9488
NODE	1594	USED	FOR	NODES	8920
NODE	2321	USED	FOR	NODES	9158

NODE	2650	USED FOR NODES	9797
NODE	2660	USED FOR NODES	9804
NODE	1295	USED FOR NODES	8071
NODE	1450	USED FOR NODES	8640
NODE	1454	USED FOR NODES	8641
NODE	1400	USED FOR NODES	8587
NODE	1396	USED FOR NODES	8586
NODE	1586	USED FOR NODES	8898
NODE	1299	USED FOR NODES	8072
NODE	1877	USED FOR NODES	9473
NODE	1300	USED FOR NODES	8073
NODE	483	USED FOR NODES	8679
NODE	2651	USED FOR NODES	9781
NODE	1876	USED FOR NODES	9472
NODE	2643	USED FOR NODES	9773
NODE	580	USED FOR NODES	8130
NODE	1525	USED FOR NODES	8781
NODE	2652	USED FOR NODES	9782
NODE	75	USED FOR NODES	8067
NODE	1790	USED FOR NODES	9311
NODE	1798	USED FOR NODES	9312
NODE	1799	USED FOR NODES	9313
NODE	2304	USED FOR NODES	9135
NODE	1533	USED FOR NODES	8782
NODE	2305	USED FOR NODES	9136
NODE	1585	USED FOR NODES	8897
NODE	1471	USED FOR NODES	8651
NODE	1562	USED FOR NODES	8802
NODE	1772	USED FOR NODES	9048
NODE	1846	USED FOR NODES	9343
NODE	1417	USED FOR NODES	8597
NODE	1845	USED FOR NODES	9342
NODE	2063	USED FOR NODES	9623
NODE	2847	USED FOR NODES	9932
NODE	650	USED FOR NODES	8135
NODE	1416	USED FOR NODES	8596
NODE	553	USED FOR NODES	8684
NODE	1771	USED FOR NODES	9047
NODE	112	USED FOR NODES	8084
NODE	1470	USED FOR NODES	8650
NODE	1325	USED FOR NODES	8088
NODE	2446	USED FOR NODES	9241
NODE	2062	USED FOR NODES	9622
NODE	2846	USED FOR NODES	9929
NODE	2848	USED FOR NODES	9933
NODE	1844	USED FOR NODES	9341
NODE	2447	USED FOR NODES	9242
NODE	1561	USED FOR NODES	8801
NODE	1326	USED FOR NODES	8089
NODE	1327	USED FOR NODES	8090
NODE	1545	USED FOR NODES	8799
NODE	545	USED FOR NODES	8683
NODE	1546	USED FOR NODES	8800
NODE	642	USED FOR NODES	8134
NODE	1313	USED FOR NODES	8085
NODE	2046	USED FOR NODES	9620
NODE	2047	USED FOR NODES	9621
NODE	1408	USED FOR NODES	8594
NODE	1409	USED FOR NODES	8595
NODE	1462	USED FOR NODES	8648
NODE	108	USED FOR NODES	8083
NODE	1463	USED FOR NODES	8649
NODE	2430	USED FOR NODES	9239
NODE	2588	USED FOR NODES	9694
NODE	2431	USED FOR NODES	9240
NODE	2830	USED FOR NODES	9930
NODE	1315	USED FOR NODES	8087
NODE	1756	USED FOR NODES	9046
NODE	1820	USED FOR NODES	9338
NODE	1822	USED FOR NODES	9340

NODE 2831 USED FOR NODES 9931
 NODE 1755 USED FOR NODES 9045
 NODE 2589 USED FOR NODES 9702
 NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING ***

CP= 62.520 TIME= 06:36:23

Same node numbers associated with more than one solid model entity.

Future mesh clearing operations could produce unexpected results.

NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	1 USED FOR KEYPOINT(S)	209	372	535
KEYPOINT	11 USED FOR KEYPOINT(S)	541		
KEYPOINT	13 USED FOR KEYPOINT(S)	210		
KEYPOINT	14 USED FOR KEYPOINT(S)	551		
KEYPOINT	16 USED FOR KEYPOINT(S)	223		
KEYPOINT	17 USED FOR KEYPOINT(S)	560		
KEYPOINT	19 USED FOR KEYPOINT(S)	232		
KEYPOINT	20 USED FOR KEYPOINT(S)	212	375	538

KEYPOINT	21	USED	FOR	KEYPOINT(S)	218	381	544
KEYPOINT	22	USED	FOR	KEYPOINT(S)	297	460	623
KEYPOINT	23	USED	FOR	KEYPOINT(S)	304	467	630
KEYPOINT	24	USED	FOR	KEYPOINT(S)	311	474	637
KEYPOINT	25	USED	FOR	KEYPOINT(S)	267	430	593
KEYPOINT	26	USED	FOR	KEYPOINT(S)	271	434	597
KEYPOINT	27	USED	FOR	KEYPOINT(S)	275	438	601
KEYPOINT	28	USED	FOR	KEYPOINT(S)	318	481	644
KEYPOINT	29	USED	FOR	KEYPOINT(S)	325	488	651
KEYPOINT	30	USED	FOR	KEYPOINT(S)	332	495	658
KEYPOINT	31	USED	FOR	KEYPOINT(S)	339	502	665
KEYPOINT	50	USED	FOR	KEYPOINT(S)	603		
KEYPOINT	51	USED	FOR	KEYPOINT(S)	274		
KEYPOINT	52	USED	FOR	KEYPOINT(S)	612		
KEYPOINT	53	USED	FOR	KEYPOINT(S)	285		
KEYPOINT	54	USED	FOR	KEYPOINT(S)	621		
KEYPOINT	55	USED	FOR	KEYPOINT(S)	294		
KEYPOINT	56	USED	FOR	KEYPOINT(S)	546		
KEYPOINT	57	USED	FOR	KEYPOINT(S)	217		
KEYPOINT	58	USED	FOR	KEYPOINT(S)	555		
KEYPOINT	59	USED	FOR	KEYPOINT(S)	228		
KEYPOINT	60	USED	FOR	KEYPOINT(S)	564		
KEYPOINT	61	USED	FOR	KEYPOINT(S)	237		
KEYPOINT	89	USED	FOR	KEYPOINT(S)	542		
KEYPOINT	94	USED	FOR	KEYPOINT(S)	211		
KEYPOINT	99	USED	FOR	KEYPOINT(S)	624		
KEYPOINT	103	USED	FOR	KEYPOINT(S)	296		
KEYPOINT	105	USED	FOR	KEYPOINT(S)	300		
KEYPOINT	107	USED	FOR	KEYPOINT(S)	552		
KEYPOINT	109	USED	FOR	KEYPOINT(S)	224		
KEYPOINT	110	USED	FOR	KEYPOINT(S)	625		
KEYPOINT	111	USED	FOR	KEYPOINT(S)	302		
KEYPOINT	115	USED	FOR	KEYPOINT(S)	627		
KEYPOINT	117	USED	FOR	KEYPOINT(S)	645		
KEYPOINT	119	USED	FOR	KEYPOINT(S)	561		
KEYPOINT	121	USED	FOR	KEYPOINT(S)	233		
KEYPOINT	122	USED	FOR	KEYPOINT(S)	631		
KEYPOINT	123	USED	FOR	KEYPOINT(S)	303		
KEYPOINT	127	USED	FOR	KEYPOINT(S)	307		
KEYPOINT	129	USED	FOR	KEYPOINT(S)	632		
KEYPOINT	131	USED	FOR	KEYPOINT(S)	309		
KEYPOINT	132	USED	FOR	KEYPOINT(S)	595		
KEYPOINT	133	USED	FOR	KEYPOINT(S)	634		
KEYPOINT	134	USED	FOR	KEYPOINT(S)	317		
KEYPOINT	136	USED	FOR	KEYPOINT(S)	638		
KEYPOINT	137	USED	FOR	KEYPOINT(S)	266		
KEYPOINT	138	USED	FOR	KEYPOINT(S)	310		
KEYPOINT	139	USED	FOR	KEYPOINT(S)	314		
KEYPOINT	140	USED	FOR	KEYPOINT(S)	599		
KEYPOINT	141	USED	FOR	KEYPOINT(S)	639		
KEYPOINT	142	USED	FOR	KEYPOINT(S)	316		
KEYPOINT	144	USED	FOR	KEYPOINT(S)	641		
KEYPOINT	145	USED	FOR	KEYPOINT(S)	270		
KEYPOINT	146	USED	FOR	KEYPOINT(S)	321		
KEYPOINT	147	USED	FOR	KEYPOINT(S)	646		
KEYPOINT	148	USED	FOR	KEYPOINT(S)	323		
KEYPOINT	149	USED	FOR	KEYPOINT(S)	648		
KEYPOINT	152	USED	FOR	KEYPOINT(S)	652		
KEYPOINT	153	USED	FOR	KEYPOINT(S)	324		
KEYPOINT	154	USED	FOR	KEYPOINT(S)	328		
KEYPOINT	155	USED	FOR	KEYPOINT(S)	653		
KEYPOINT	156	USED	FOR	KEYPOINT(S)	330		
KEYPOINT	158	USED	FOR	KEYPOINT(S)	606		
KEYPOINT	159	USED	FOR	KEYPOINT(S)	655		
KEYPOINT	160	USED	FOR	KEYPOINT(S)	279		
KEYPOINT	162	USED	FOR	KEYPOINT(S)	659		
KEYPOINT	164	USED	FOR	KEYPOINT(S)	609		
KEYPOINT	165	USED	FOR	KEYPOINT(S)	331		
KEYPOINT	166	USED	FOR	KEYPOINT(S)	282		
KEYPOINT	167	USED	FOR	KEYPOINT(S)	335		

KEYPOINT	168	USED	FOR	KEYPOINT(S)	660
KEYPOINT	170	USED	FOR	KEYPOINT(S)	337
KEYPOINT	171	USED	FOR	KEYPOINT(S)	662
KEYPOINT	173	USED	FOR	KEYPOINT(S)	666
KEYPOINT	174	USED	FOR	KEYPOINT(S)	338
KEYPOINT	176	USED	FOR	KEYPOINT(S)	615
KEYPOINT	177	USED	FOR	KEYPOINT(S)	342
KEYPOINT	178	USED	FOR	KEYPOINT(S)	288
KEYPOINT	179	USED	FOR	KEYPOINT(S)	667
KEYPOINT	180	USED	FOR	KEYPOINT(S)	344
KEYPOINT	182	USED	FOR	KEYPOINT(S)	618
KEYPOINT	183	USED	FOR	KEYPOINT(S)	669
KEYPOINT	184	USED	FOR	KEYPOINT(S)	291
KEYPOINT	215	USED	FOR	KEYPOINT(S)	373
KEYPOINT	216	USED	FOR	KEYPOINT(S)	374
KEYPOINT	220	USED	FOR	KEYPOINT(S)	380
KEYPOINT	225	USED	FOR	KEYPOINT(S)	386
KEYPOINT	226	USED	FOR	KEYPOINT(S)	387
KEYPOINT	229	USED	FOR	KEYPOINT(S)	391
KEYPOINT	234	USED	FOR	KEYPOINT(S)	395
KEYPOINT	235	USED	FOR	KEYPOINT(S)	396
KEYPOINT	238	USED	FOR	KEYPOINT(S)	400
KEYPOINT	269	USED	FOR	KEYPOINT(S)	429
KEYPOINT	273	USED	FOR	KEYPOINT(S)	433
KEYPOINT	277	USED	FOR	KEYPOINT(S)	437
KEYPOINT	280	USED	FOR	KEYPOINT(S)	442
KEYPOINT	283	USED	FOR	KEYPOINT(S)	445
KEYPOINT	286	USED	FOR	KEYPOINT(S)	448
KEYPOINT	289	USED	FOR	KEYPOINT(S)	451
KEYPOINT	292	USED	FOR	KEYPOINT(S)	454
KEYPOINT	295	USED	FOR	KEYPOINT(S)	457
KEYPOINT	298	USED	FOR	KEYPOINT(S)	459
KEYPOINT	299	USED	FOR	KEYPOINT(S)	463
KEYPOINT	301	USED	FOR	KEYPOINT(S)	465
KEYPOINT	305	USED	FOR	KEYPOINT(S)	466
KEYPOINT	306	USED	FOR	KEYPOINT(S)	470
KEYPOINT	308	USED	FOR	KEYPOINT(S)	472
KEYPOINT	312	USED	FOR	KEYPOINT(S)	473
KEYPOINT	313	USED	FOR	KEYPOINT(S)	477
KEYPOINT	315	USED	FOR	KEYPOINT(S)	479
KEYPOINT	319	USED	FOR	KEYPOINT(S)	480
KEYPOINT	320	USED	FOR	KEYPOINT(S)	484
KEYPOINT	322	USED	FOR	KEYPOINT(S)	486
KEYPOINT	326	USED	FOR	KEYPOINT(S)	487
KEYPOINT	327	USED	FOR	KEYPOINT(S)	491
KEYPOINT	329	USED	FOR	KEYPOINT(S)	493
KEYPOINT	333	USED	FOR	KEYPOINT(S)	494
KEYPOINT	334	USED	FOR	KEYPOINT(S)	498
KEYPOINT	336	USED	FOR	KEYPOINT(S)	500
KEYPOINT	340	USED	FOR	KEYPOINT(S)	501
KEYPOINT	341	USED	FOR	KEYPOINT(S)	505
KEYPOINT	343	USED	FOR	KEYPOINT(S)	507
KEYPOINT	378	USED	FOR	KEYPOINT(S)	536
KEYPOINT	379	USED	FOR	KEYPOINT(S)	537
KEYPOINT	383	USED	FOR	KEYPOINT(S)	543
KEYPOINT	388	USED	FOR	KEYPOINT(S)	549
KEYPOINT	389	USED	FOR	KEYPOINT(S)	550
KEYPOINT	392	USED	FOR	KEYPOINT(S)	554
KEYPOINT	397	USED	FOR	KEYPOINT(S)	558
KEYPOINT	398	USED	FOR	KEYPOINT(S)	559
KEYPOINT	401	USED	FOR	KEYPOINT(S)	563
KEYPOINT	432	USED	FOR	KEYPOINT(S)	592
KEYPOINT	436	USED	FOR	KEYPOINT(S)	596
KEYPOINT	440	USED	FOR	KEYPOINT(S)	600
KEYPOINT	443	USED	FOR	KEYPOINT(S)	605
KEYPOINT	446	USED	FOR	KEYPOINT(S)	608
KEYPOINT	449	USED	FOR	KEYPOINT(S)	611
KEYPOINT	452	USED	FOR	KEYPOINT(S)	614
KEYPOINT	455	USED	FOR	KEYPOINT(S)	617
KEYPOINT	458	USED	FOR	KEYPOINT(S)	620

KEYPOINT	461 USED FOR KEYPOINT(S)	622	
KEYPOINT	462 USED FOR KEYPOINT(S)	626	
KEYPOINT	464 USED FOR KEYPOINT(S)	628	
KEYPOINT	468 USED FOR KEYPOINT(S)	629	
KEYPOINT	469 USED FOR KEYPOINT(S)	633	
KEYPOINT	471 USED FOR KEYPOINT(S)	635	
KEYPOINT	475 USED FOR KEYPOINT(S)	636	
KEYPOINT	476 USED FOR KEYPOINT(S)	640	
KEYPOINT	478 USED FOR KEYPOINT(S)	642	
KEYPOINT	482 USED FOR KEYPOINT(S)	643	
KEYPOINT	483 USED FOR KEYPOINT(S)	647	
KEYPOINT	485 USED FOR KEYPOINT(S)	649	
KEYPOINT	489 USED FOR KEYPOINT(S)	650	
KEYPOINT	490 USED FOR KEYPOINT(S)	654	
KEYPOINT	492 USED FOR KEYPOINT(S)	656	
KEYPOINT	496 USED FOR KEYPOINT(S)	657	
KEYPOINT	497 USED FOR KEYPOINT(S)	661	
KEYPOINT	499 USED FOR KEYPOINT(S)	663	
KEYPOINT	503 USED FOR KEYPOINT(S)	664	
KEYPOINT	504 USED FOR KEYPOINT(S)	668	
KEYPOINT	506 USED FOR KEYPOINT(S)	670	
LINE	21 USED FOR LINE(S)	511	
LINE	22 USED FOR LINE(S)	1363	
LINE	25 USED FOR LINE(S)	1385	
LINE	27 USED FOR LINE(S)	549	
LINE	30 USED FOR LINE(S)	1406	
LINE	32 USED FOR LINE(S)	570	
LINE	35 USED FOR LINE(S)	514	931 1348
LINE	36 USED FOR LINE(S)	533	950 1367
LINE	37 USED FOR LINE(S)	746	1163 1580
LINE	38 USED FOR LINE(S)	765	1182 1599
LINE	39 USED FOR LINE(S)	781	1198 1615
LINE	40 USED FOR LINE(S)	662	1079 1496
LINE	41 USED FOR LINE(S)	674	1091 1508
LINE	42 USED FOR LINE(S)	686	1103 1520
LINE	43 USED FOR LINE(S)	797	1214 1631
LINE	44 USED FOR LINE(S)	816	1233 1650
LINE	45 USED FOR LINE(S)	832	1249 1666
LINE	46 USED FOR LINE(S)	848	1265 1682
LINE	74 USED FOR LINE(S)	1529	
LINE	75 USED FOR LINE(S)	685	
LINE	76 USED FOR LINE(S)	1552	
LINE	77 USED FOR LINE(S)	716	
LINE	78 USED FOR LINE(S)	1576	
LINE	79 USED FOR LINE(S)	740	
LINE	83 USED FOR LINE(S)	1376	
LINE	84 USED FOR LINE(S)	532	
LINE	85 USED FOR LINE(S)	1396	
LINE	86 USED FOR LINE(S)	560	
LINE	87 USED FOR LINE(S)	1417	
LINE	88 USED FOR LINE(S)	581	
LINE	158 USED FOR LINE(S)	1364	
LINE	160 USED FOR LINE(S)	1359	
LINE	172 USED FOR LINE(S)	512	
LINE	176 USED FOR LINE(S)	513	
LINE	180 USED FOR LINE(S)	1373	
LINE	192 USED FOR LINE(S)	531	
LINE	204 USED FOR LINE(S)	1386	
LINE	205 USED FOR LINE(S)	1387	
LINE	206 USED FOR LINE(S)	1584	
LINE	207 USED FOR LINE(S)	1635	
LINE	208 USED FOR LINE(S)	550	
LINE	209 USED FOR LINE(S)	547	
LINE	211 USED FOR LINE(S)	1582	
LINE	217 USED FOR LINE(S)	1395	
LINE	222 USED FOR LINE(S)	558	
LINE	224 USED FOR LINE(S)	744	
LINE	230 USED FOR LINE(S)	1407	
LINE	231 USED FOR LINE(S)	1408	
LINE	233 USED FOR LINE(S)	745	

LINE	234	USED	FOR	LINE(S)	571
LINE	235	USED	FOR	LINE(S)	568
LINE	237	USED	FOR	LINE(S)	756
LINE	243	USED	FOR	LINE(S)	1416
LINE	245	USED	FOR	LINE(S)	754
LINE	248	USED	FOR	LINE(S)	579
LINE	250	USED	FOR	LINE(S)	1585
LINE	251	USED	FOR	LINE(S)	1586
LINE	257	USED	FOR	LINE(S)	762
LINE	258	USED	FOR	LINE(S)	760
LINE	263	USED	FOR	LINE(S)	1591
LINE	267	USED	FOR	LINE(S)	1592
LINE	269	USED	FOR	LINE(S)	1602
LINE	271	USED	FOR	LINE(S)	1600
LINE	278	USED	FOR	LINE(S)	763
LINE	282	USED	FOR	LINE(S)	764
LINE	283	USED	FOR	LINE(S)	773
LINE	287	USED	FOR	LINE(S)	771
LINE	289	USED	FOR	LINE(S)	1505
LINE	291	USED	FOR	LINE(S)	1502
LINE	293	USED	FOR	LINE(S)	1603
LINE	294	USED	FOR	LINE(S)	1604
LINE	295	USED	FOR	LINE(S)	778
LINE	300	USED	FOR	LINE(S)	776
LINE	303	USED	FOR	LINE(S)	660
LINE	305	USED	FOR	LINE(S)	1608
LINE	306	USED	FOR	LINE(S)	1609
LINE	307	USED	FOR	LINE(S)	661
LINE	308	USED	FOR	LINE(S)	1618
LINE	309	USED	FOR	LINE(S)	1517
LINE	310	USED	FOR	LINE(S)	1633
LINE	311	USED	FOR	LINE(S)	1514
LINE	313	USED	FOR	LINE(S)	1616
LINE	315	USED	FOR	LINE(S)	779
LINE	320	USED	FOR	LINE(S)	780
LINE	321	USED	FOR	LINE(S)	789
LINE	323	USED	FOR	LINE(S)	672
LINE	325	USED	FOR	LINE(S)	787
LINE	327	USED	FOR	LINE(S)	673
LINE	328	USED	FOR	LINE(S)	1619
LINE	329	USED	FOR	LINE(S)	1620
LINE	330	USED	FOR	LINE(S)	794
LINE	331	USED	FOR	LINE(S)	1526
LINE	333	USED	FOR	LINE(S)	792
LINE	335	USED	FOR	LINE(S)	1624
LINE	340	USED	FOR	LINE(S)	1625
LINE	343	USED	FOR	LINE(S)	684
LINE	345	USED	FOR	LINE(S)	795
LINE	346	USED	FOR	LINE(S)	796
LINE	347	USED	FOR	LINE(S)	807
LINE	348	USED	FOR	LINE(S)	805
LINE	350	USED	FOR	LINE(S)	1636
LINE	351	USED	FOR	LINE(S)	1637
LINE	355	USED	FOR	LINE(S)	1535
LINE	356	USED	FOR	LINE(S)	1536
LINE	357	USED	FOR	LINE(S)	813
LINE	358	USED	FOR	LINE(S)	811
LINE	359	USED	FOR	LINE(S)	700
LINE	360	USED	FOR	LINE(S)	698
LINE	363	USED	FOR	LINE(S)	1642
LINE	364	USED	FOR	LINE(S)	1643
LINE	368	USED	FOR	LINE(S)	1543
LINE	369	USED	FOR	LINE(S)	1544
LINE	370	USED	FOR	LINE(S)	1653
LINE	372	USED	FOR	LINE(S)	708
LINE	373	USED	FOR	LINE(S)	706
LINE	375	USED	FOR	LINE(S)	1651
LINE	377	USED	FOR	LINE(S)	814
LINE	381	USED	FOR	LINE(S)	1551
LINE	382	USED	FOR	LINE(S)	815

LINE	383	USED FOR LINE(S)	824
LINE	384	USED FOR LINE(S)	822
LINE	386	USED FOR LINE(S)	714
LINE	388	USED FOR LINE(S)	1654
LINE	389	USED FOR LINE(S)	1655
LINE	390	USED FOR LINE(S)	829
LINE	394	USED FOR LINE(S)	1559
LINE	395	USED FOR LINE(S)	1560
LINE	396	USED FOR LINE(S)	827
LINE	398	USED FOR LINE(S)	724
LINE	399	USED FOR LINE(S)	722
LINE	401	USED FOR LINE(S)	1659
LINE	402	USED FOR LINE(S)	1660
LINE	403	USED FOR LINE(S)	1669
LINE	407	USED FOR LINE(S)	1567
LINE	408	USED FOR LINE(S)	1568
LINE	410	USED FOR LINE(S)	1667
LINE	411	USED FOR LINE(S)	732
LINE	412	USED FOR LINE(S)	730
LINE	415	USED FOR LINE(S)	830
LINE	416	USED FOR LINE(S)	831
LINE	420	USED FOR LINE(S)	1575
LINE	421	USED FOR LINE(S)	840
LINE	422	USED FOR LINE(S)	838
LINE	424	USED FOR LINE(S)	1670
LINE	425	USED FOR LINE(S)	738
LINE	427	USED FOR LINE(S)	1671
LINE	428	USED FOR LINE(S)	845
LINE	429	USED FOR LINE(S)	843
LINE	431	USED FOR LINE(S)	1675
LINE	432	USED FOR LINE(S)	1676
LINE	433	USED FOR LINE(S)	1685
LINE	435	USED FOR LINE(S)	1683
LINE	437	USED FOR LINE(S)	846
LINE	438	USED FOR LINE(S)	847
LINE	439	USED FOR LINE(S)	856
LINE	440	USED FOR LINE(S)	854
LINE	442	USED FOR LINE(S)	1686
LINE	443	USED FOR LINE(S)	1687
LINE	444	USED FOR LINE(S)	861
LINE	445	USED FOR LINE(S)	859
LINE	447	USED FOR LINE(S)	1691
LINE	448	USED FOR LINE(S)	1692
LINE	525	USED FOR LINE(S)	929
LINE	529	USED FOR LINE(S)	928
LINE	530	USED FOR LINE(S)	930
LINE	539	USED FOR LINE(S)	948
LINE	542	USED FOR LINE(S)	949
LINE	551	USED FOR LINE(S)	966
LINE	552	USED FOR LINE(S)	964
LINE	553	USED FOR LINE(S)	967
LINE	561	USED FOR LINE(S)	975
LINE	562	USED FOR LINE(S)	977
LINE	572	USED FOR LINE(S)	987
LINE	573	USED FOR LINE(S)	985
LINE	574	USED FOR LINE(S)	988
LINE	582	USED FOR LINE(S)	996
LINE	583	USED FOR LINE(S)	998
LINE	668	USED FOR LINE(S)	1077
LINE	671	USED FOR LINE(S)	1078
LINE	680	USED FOR LINE(S)	1089
LINE	683	USED FOR LINE(S)	1090
LINE	692	USED FOR LINE(S)	1101
LINE	695	USED FOR LINE(S)	1102
LINE	701	USED FOR LINE(S)	1115
LINE	702	USED FOR LINE(S)	1117
LINE	709	USED FOR LINE(S)	1123
LINE	710	USED FOR LINE(S)	1125
LINE	717	USED FOR LINE(S)	1131
LINE	718	USED FOR LINE(S)	1133

LINE	725	USED FOR LINE(S)	1139
LINE	726	USED FOR LINE(S)	1141
LINE	733	USED FOR LINE(S)	1147
LINE	734	USED FOR LINE(S)	1149
LINE	741	USED FOR LINE(S)	1155
LINE	742	USED FOR LINE(S)	1157
LINE	748	USED FOR LINE(S)	1161
LINE	750	USED FOR LINE(S)	1162
LINE	751	USED FOR LINE(S)	1171
LINE	752	USED FOR LINE(S)	1173
LINE	757	USED FOR LINE(S)	1177
LINE	758	USED FOR LINE(S)	1179
LINE	766	USED FOR LINE(S)	1180
LINE	768	USED FOR LINE(S)	1181
LINE	769	USED FOR LINE(S)	1188
LINE	770	USED FOR LINE(S)	1190
LINE	774	USED FOR LINE(S)	1193
LINE	775	USED FOR LINE(S)	1195
LINE	782	USED FOR LINE(S)	1196
LINE	784	USED FOR LINE(S)	1197
LINE	785	USED FOR LINE(S)	1204
LINE	786	USED FOR LINE(S)	1206
LINE	790	USED FOR LINE(S)	1209
LINE	791	USED FOR LINE(S)	1211
LINE	799	USED FOR LINE(S)	1212
LINE	801	USED FOR LINE(S)	1213
LINE	802	USED FOR LINE(S)	1222
LINE	803	USED FOR LINE(S)	1224
LINE	808	USED FOR LINE(S)	1228
LINE	809	USED FOR LINE(S)	1230
LINE	817	USED FOR LINE(S)	1231
LINE	819	USED FOR LINE(S)	1232
LINE	820	USED FOR LINE(S)	1239
LINE	821	USED FOR LINE(S)	1241
LINE	825	USED FOR LINE(S)	1244
LINE	826	USED FOR LINE(S)	1246
LINE	833	USED FOR LINE(S)	1247
LINE	835	USED FOR LINE(S)	1248
LINE	836	USED FOR LINE(S)	1255
LINE	837	USED FOR LINE(S)	1257
LINE	841	USED FOR LINE(S)	1260
LINE	842	USED FOR LINE(S)	1262
LINE	849	USED FOR LINE(S)	1263
LINE	851	USED FOR LINE(S)	1264
LINE	852	USED FOR LINE(S)	1271
LINE	853	USED FOR LINE(S)	1273
LINE	857	USED FOR LINE(S)	1276
LINE	858	USED FOR LINE(S)	1278
LINE	942	USED FOR LINE(S)	1346
LINE	946	USED FOR LINE(S)	1345
LINE	947	USED FOR LINE(S)	1347
LINE	956	USED FOR LINE(S)	1365
LINE	959	USED FOR LINE(S)	1366
LINE	968	USED FOR LINE(S)	1383
LINE	969	USED FOR LINE(S)	1381
LINE	970	USED FOR LINE(S)	1384
LINE	978	USED FOR LINE(S)	1392
LINE	979	USED FOR LINE(S)	1394
LINE	989	USED FOR LINE(S)	1404
LINE	990	USED FOR LINE(S)	1402
LINE	991	USED FOR LINE(S)	1405
LINE	999	USED FOR LINE(S)	1413
LINE	1000	USED FOR LINE(S)	1415
LINE	1085	USED FOR LINE(S)	1494
LINE	1088	USED FOR LINE(S)	1495
LINE	1097	USED FOR LINE(S)	1506
LINE	1100	USED FOR LINE(S)	1507
LINE	1109	USED FOR LINE(S)	1518
LINE	1112	USED FOR LINE(S)	1519
LINE	1118	USED FOR LINE(S)	1532

LINE	1119	USED	FOR	LINE(S)	1534
LINE	1126	USED	FOR	LINE(S)	1540
LINE	1127	USED	FOR	LINE(S)	1542
LINE	1134	USED	FOR	LINE(S)	1548
LINE	1135	USED	FOR	LINE(S)	1550
LINE	1142	USED	FOR	LINE(S)	1556
LINE	1143	USED	FOR	LINE(S)	1558
LINE	1150	USED	FOR	LINE(S)	1564
LINE	1151	USED	FOR	LINE(S)	1566
LINE	1158	USED	FOR	LINE(S)	1572
LINE	1159	USED	FOR	LINE(S)	1574
LINE	1165	USED	FOR	LINE(S)	1578
LINE	1167	USED	FOR	LINE(S)	1579
LINE	1168	USED	FOR	LINE(S)	1588
LINE	1169	USED	FOR	LINE(S)	1590
LINE	1174	USED	FOR	LINE(S)	1594
LINE	1175	USED	FOR	LINE(S)	1596
LINE	1183	USED	FOR	LINE(S)	1597
LINE	1185	USED	FOR	LINE(S)	1598
LINE	1186	USED	FOR	LINE(S)	1605
LINE	1187	USED	FOR	LINE(S)	1607
LINE	1191	USED	FOR	LINE(S)	1610
LINE	1192	USED	FOR	LINE(S)	1612
LINE	1199	USED	FOR	LINE(S)	1613
LINE	1201	USED	FOR	LINE(S)	1614
LINE	1202	USED	FOR	LINE(S)	1621
LINE	1203	USED	FOR	LINE(S)	1623
LINE	1207	USED	FOR	LINE(S)	1626
LINE	1208	USED	FOR	LINE(S)	1628
LINE	1216	USED	FOR	LINE(S)	1629
LINE	1218	USED	FOR	LINE(S)	1630
LINE	1219	USED	FOR	LINE(S)	1639
LINE	1220	USED	FOR	LINE(S)	1641
LINE	1225	USED	FOR	LINE(S)	1645
LINE	1226	USED	FOR	LINE(S)	1647
LINE	1234	USED	FOR	LINE(S)	1648
LINE	1236	USED	FOR	LINE(S)	1649
LINE	1237	USED	FOR	LINE(S)	1656
LINE	1238	USED	FOR	LINE(S)	1658
LINE	1242	USED	FOR	LINE(S)	1661
LINE	1243	USED	FOR	LINE(S)	1663
LINE	1250	USED	FOR	LINE(S)	1664
LINE	1252	USED	FOR	LINE(S)	1665
LINE	1253	USED	FOR	LINE(S)	1672
LINE	1254	USED	FOR	LINE(S)	1674
LINE	1258	USED	FOR	LINE(S)	1677
LINE	1259	USED	FOR	LINE(S)	1679
LINE	1266	USED	FOR	LINE(S)	1680
LINE	1268	USED	FOR	LINE(S)	1681
LINE	1269	USED	FOR	LINE(S)	1688
LINE	1270	USED	FOR	LINE(S)	1690
LINE	1274	USED	FOR	LINE(S)	1693
LINE	1275	USED	FOR	LINE(S)	1695
AREA	89	USED	FOR	AREA(S)	1148
AREA	102	USED	FOR	AREA(S)	423
AREA	105	USED	FOR	AREA(S)	1161
AREA	118	USED	FOR	AREA(S)	439
AREA	124	USED	FOR	AREA(S)	1168
AREA	127	USED	FOR	AREA(S)	453
AREA	133	USED	FOR	AREA(S)	1176
AREA	136	USED	FOR	AREA(S)	462
AREA	142	USED	FOR	AREA(S)	1184
AREA	145	USED	FOR	AREA(S)	469
AREA	151	USED	FOR	AREA(S)	1192
AREA	154	USED	FOR	AREA(S)	478
AREA	169	USED	FOR	AREA(S)	1347
AREA	178	USED	FOR	AREA(S)	633
AREA	185	USED	FOR	AREA(S)	640
AREA	194	USED	FOR	AREA(S)	1350
AREA	201	USED	FOR	AREA(S)	645

AREA	210	USED	FOR AREA(S)	1355
AREA	217	USED	FOR AREA(S)	1277
AREA	219	USED	FOR AREA(S)	1362
AREA	228	USED	FOR AREA(S)	648
AREA	230	USED	FOR AREA(S)	555
AREA	233	USED	FOR AREA(S)	1289
AREA	235	USED	FOR AREA(S)	654
AREA	244	USED	FOR AREA(S)	1364
AREA	246	USED	FOR AREA(S)	567
AREA	249	USED	FOR AREA(S)	1301
AREA	251	USED	FOR AREA(S)	658
AREA	260	USED	FOR AREA(S)	1368
AREA	262	USED	FOR AREA(S)	579
AREA	265	USED	FOR AREA(S)	1374
AREA	268	USED	FOR AREA(S)	1307
AREA	271	USED	FOR AREA(S)	593
AREA	274	USED	FOR AREA(S)	660
AREA	277	USED	FOR AREA(S)	1314
AREA	280	USED	FOR AREA(S)	600
AREA	283	USED	FOR AREA(S)	666
AREA	286	USED	FOR AREA(S)	1321
AREA	289	USED	FOR AREA(S)	607
AREA	292	USED	FOR AREA(S)	1376
AREA	295	USED	FOR AREA(S)	1328
AREA	298	USED	FOR AREA(S)	614
AREA	301	USED	FOR AREA(S)	670
AREA	304	USED	FOR AREA(S)	1335
AREA	307	USED	FOR AREA(S)	621
AREA	310	USED	FOR AREA(S)	1380
AREA	313	USED	FOR AREA(S)	1342
AREA	316	USED	FOR AREA(S)	628
AREA	319	USED	FOR AREA(S)	1386
AREA	321	USED	FOR AREA(S)	672
AREA	323	USED	FOR AREA(S)	679
AREA	325	USED	FOR AREA(S)	1389
AREA	327	USED	FOR AREA(S)	684
AREA	329	USED	FOR AREA(S)	1394
AREA	331	USED	FOR AREA(S)	1401
AREA	333	USED	FOR AREA(S)	687
AREA	335	USED	FOR AREA(S)	693
AREA	337	USED	FOR AREA(S)	1403
AREA	339	USED	FOR AREA(S)	697
AREA	341	USED	FOR AREA(S)	1407
AREA	343	USED	FOR AREA(S)	1413
AREA	345	USED	FOR AREA(S)	699
AREA	347	USED	FOR AREA(S)	705
AREA	349	USED	FOR AREA(S)	1415
AREA	351	USED	FOR AREA(S)	709
AREA	353	USED	FOR AREA(S)	1419
AREA	355	USED	FOR AREA(S)	1425
AREA	357	USED	FOR AREA(S)	711
AREA	359	USED	FOR AREA(S)	717
AREA	361	USED	FOR AREA(S)	1427
AREA	363	USED	FOR AREA(S)	721
AREA	365	USED	FOR AREA(S)	1431
AREA	436	USED	FOR AREA(S)	779
AREA	449	USED	FOR AREA(S)	795
AREA	456	USED	FOR AREA(S)	809
AREA	464	USED	FOR AREA(S)	818
AREA	472	USED	FOR AREA(S)	825
AREA	480	USED	FOR AREA(S)	834
AREA	565	USED	FOR AREA(S)	911
AREA	577	USED	FOR AREA(S)	923
AREA	589	USED	FOR AREA(S)	935
AREA	595	USED	FOR AREA(S)	949
AREA	602	USED	FOR AREA(S)	956
AREA	609	USED	FOR AREA(S)	963
AREA	616	USED	FOR AREA(S)	970
AREA	623	USED	FOR AREA(S)	977
AREA	630	USED	FOR AREA(S)	984

AREA 635 USED FOR AREA(S) 989
 AREA 638 USED FOR AREA(S) 996
 AREA 643 USED FOR AREA(S) 1001
 AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,

```

CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

```

Inner SS. Side of Can. #1

```

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

```

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

```

Inner SS. Lid of Can. #2

```

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

```

Inner SS. Side of Can. #2

```

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

```

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

```

Inner SS. Lid of Can. #3

```

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),

```

ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #3

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,33,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation - Between Can and IB
 Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
 KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=

IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Sides Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00

KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.250 TIME= 06:36:37
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360

KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation

In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation

Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140

KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.210

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glss21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:37:09 NOV 05, 1995 CP= 107.370
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.800 TIME= 06:37:10
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSLE COMMAND.

***** ROUTINE COMPLETED ***** CP = 5875.960

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:13:25 NOV 05, 1995 CP= 5875.960
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5876.580 TIME= 08:13:26
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7856.160

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH

```
/COM,  
/AUX12,  
ESEL,S,TYPE,,6,  
NSLE,S,  
STEF,5.67E-8,  
GEOM,0,  
VTYPE,0,100,  
WRITE,glscangap,
```

```
ALL SELECT FOR ITEM=ELEM COMPONENT=  
IN RANGE 1 TO 10656 STEP 1
```

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

```
ALL SELECT FOR ITEM=NODE COMPONENT=  
IN RANGE 1 TO 10009 STEP 1
```

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

```
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****  
38303 VERSION=HP 9000/7XX 08:46:29 NOV 05, 1995 CP= 7856.260  
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844
```

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

```
ELEMENT TYPE SET TO 18  
SE,glscangap,  
SE,iobargap,
```

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

```
SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 6 TO 6 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 16 TO 16 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 26 TO 26 STEP 1
```

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 36 TO 36 STEP 1
```

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7859.020

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glss21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPs in WP between glass, can, Inner Barrier and Outer Barrier.....
DONT MESH; Either Assume its VOID or its meshed earlier
This section used only if both rad. and He conducti
is used in the model.
He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,

VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:46:45 NOV 05, 1995 CP= 7868.490
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7878.230

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7878.240 TIME= 08:46:55
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1379438 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=

IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1202.86150 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7880.590 TIME= 08:46:57

All shape tests were bypassed for elements associated with the solid model, because most of them were already done at AMESH or VMESH. Use CHECK if desired to perform all of the element tests.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:46:57 NOV 05, 1995 CP= 7880.590
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO 273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7882.030 TIME= 08:46:59
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7882.470 TIME= 08:46:59
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19821.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.47040E-12	IXX = .2730E+05	IXX = .2701E+05
YC = -.10514E-01	IYY = .2709E+05	IYY = .2680E+05
ZC = -.12014	IZZ = 9810.	IZZ = 9808.
	IXY = .8715E-08	IXY = .8813E-08
	IYZ = .4597E-10	IYZ = 25.04
	IZX = -.2955E-08	IZX = -.1835E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	129.199

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7921.040 TIME= 08:48:40
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	21.970	.003
11	320	SHELL57	.770	.002
18	2	MATRIX50	5.450	2.725

Time at end of element matrix formulation CP= 7921.05.

HT FLOW CONVERGENCE VALUE= 144.2 CRITERION= .1442

Estimated number of active DOF= 8639.

Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8996.63.
 Equation solver maximum pivot= 45.7732646 at node 8097 TEMP.
 Equation solver minimum pivot= 0.217830495 at node 3498 TEMP.
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 163.7
 HT FLOW CONVERGENCE VALUE= 310.9 CRITERION= .8124E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -41.50
 HT FLOW CONVERGENCE VALUE= 33.02 CRITERION= .8124E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -8.303
 HT FLOW CONVERGENCE VALUE= 5.606 CRITERION= .8124E-01
 EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4916
 HT FLOW CONVERGENCE VALUE= .3118 CRITERION= .8124E-01
 EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1047
 HT FLOW CONVERGENCE VALUE= .7015E-01 CRITERION= .8124E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 5

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.480	.002
11	320	SHELL57	.390	.001
18	2	MATRIX50	8.610	4.305

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.070	.000
11	320	SHELL57	.030	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 5
 *** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS
 ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
 R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS
 BUFFER SIZE USED= 4096
 57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glss21x2.emat
 5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glss21x2.esav
 58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glss21x2.tri
 .047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glss21x2.dsub
 5.297 MB WRITTEN ON RESULTS FILE: glss21x2.rth

Solve steady-state for initial conditions
 with WP surface temperatures from repository
 steady-state solution.
 Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
 RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1383000 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1202.86150 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 13483.430 TIME= 10:38:33
This load step will be a static (steady-state) step.

*** NOTE *** CP= 13483.870 TIME= 10:38:33
The step data was checked and warning messages were found.
Please review output or errors file (glss21x2.err) for these warning messages.

*** NOTE *** CP= 13483.870 TIME= 10:38:33
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=MP 9000/7XX 10:38:33 NOV 05, 1995 CP= 13483.870
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .7017E-01 CRITERION= .8124E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6469E-02
HT FLOW CONVERGENCE VALUE= .3651E-02 CRITERION= .8124E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glss21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP
Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,6,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07
TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1202.86150 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1383000 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING ***

CP= 13773.890 TIME= 10:49:23

This load step will be a static (steady-state) step.

*** NOTE *** CP= 13774.330 TIME= 10:49:24
The step data was checked and warning messages were found.
Please review output or errors file (glss21x2.err) for these warning messages.

*** NOTE *** CP= 13774.340 TIME= 10:49:24
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:49:24 NOV 05, 1995 CP= 13774.340
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .3651E-02 CRITERION= .8124E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1303E-02
HT FLOW CONVERGENCE VALUE= .8622E-03 CRITERION= .8124E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1

*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14047.590 TIME= 10:59:49
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:59:50 NOV 05, 1995 CP= 14048.040
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 136.4 CRITERION= .1581
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 20.28
HT FLOW CONVERGENCE VALUE= 20.09 CRITERION= .7999E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.858
HT FLOW CONVERGENCE VALUE= 2.327 CRITERION= .7999E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1996
HT FLOW CONVERGENCE VALUE= .1018 CRITERION= .7999E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3112E-01
HT FLOW CONVERGENCE VALUE= .1960E-01 CRITERION= .7999E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4

*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 11

*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14881.160 TIME= 11:29:26
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:29:27 NOV 05, 1995 CP= 14881.610
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 70.82 CRITERION= .1060
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 8.872
HT FLOW CONVERGENCE VALUE= 8.434 CRITERION= .7883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.597
HT FLOW CONVERGENCE VALUE= .9468 CRITERION= .7883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7234E-01
HT FLOW CONVERGENCE VALUE= .3699E-01 CRITERION= .7883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 14
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15523.960 TIME= 11:52:35
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:52:36 NOV 05, 1995 CP= 15524.400
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 52.05 CRITERION= .9356E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.064
HT FLOW CONVERGENCE VALUE= 5.583 CRITERION= .7775E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.041
HT FLOW CONVERGENCE VALUE= .6023 CRITERION= .7775E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4385E-01
HT FLOW CONVERGENCE VALUE= .2204E-01 CRITERION= .7775E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 17
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16163.830 TIME= 12:15:41
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:15:41 NOV 05, 1995 CP= 16164.270
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.38 CRITERION= .8766E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.702
HT FLOW CONVERGENCE VALUE= 4.214 CRITERION= .7674E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7758
HT FLOW CONVERGENCE VALUE= .4387 CRITERION= .7674E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3090E-01
HT FLOW CONVERGENCE VALUE= .1526E-01 CRITERION= .7674E-01 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 20
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16804.950 TIME= 12:38:49
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:38:50 NOV 05, 1995 CP= 16805.390
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.16 CRITERION= .8398E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.864
HT FLOW CONVERGENCE VALUE= 3.386 CRITERION= .7581E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6162
HT FLOW CONVERGENCE VALUE= .3412 CRITERION= .7581E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2345E-01
HT FLOW CONVERGENCE VALUE= .1138E-01 CRITERION= .7581E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 23
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17445.010 TIME= 13:01:55
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:01:56 NOV 05, 1995 CP= 17445.460
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 31.77 CRITERION= .8138E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.293
HT FLOW CONVERGENCE VALUE= 2.828 CRITERION= .7493E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5095
HT FLOW CONVERGENCE VALUE= .2766 CRITERION= .7493E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1864E-01
HT FLOW CONVERGENCE VALUE= .8894E-02 CRITERION= .7493E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 26
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18086.680 TIME= 13:25:03
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:25:03 NOV 05, 1995 CP= 18087.120
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.52 CRITERION= .7940E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.882
HT FLOW CONVERGENCE VALUE= 2.431 CRITERION= .7410E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4341
HT FLOW CONVERGENCE VALUE= .2308 CRITERION= .7410E-01

EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1521E-01
 HT FLOW CONVERGENCE VALUE= .7205E-02 CRITERION= .7410E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 29
 *** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18728.750 TIME= 13:48:11
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:11 NOV 05, 1995 CP= 18729.190
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.75 CRITERION= .7772E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.545
 HT FLOW CONVERGENCE VALUE= 2.056 CRITERION= .7334E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3744
 HT FLOW CONVERGENCE VALUE= .1818 CRITERION= .7334E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1269E-01
 HT FLOW CONVERGENCE VALUE= .6444E-02 CRITERION= .7334E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 32
 *** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19376.650 TIME= 14:11:24
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 14:11:25 NOV 05, 1995 CP= 19377.100
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 23.63 CRITERION= .7637E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.289
 HT FLOW CONVERGENCE VALUE= 1.777 CRITERION= .7263E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3298
 HT FLOW CONVERGENCE VALUE= .1537 CRITERION= .7263E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1085E-01
 HT FLOW CONVERGENCE VALUE= .5578E-02 CRITERION= .7263E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 35
 *** TIME = .284019E+08 TIME INC = .315576E+07

NSUBST,15,30,10,ON

Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08

TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1065.31409 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1
404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1
6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1
10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1
1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1
8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1
10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 83.0314775 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1
1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1
8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20026.500 TIME= 14:34:39
This load step will be a static (steady-state) step.

*** NOTE *** CP= 20026.940 TIME= 14:34:39
The step data was checked and warning messages were found.

Please review output or errors file (glss21x2.err) for these warning messages.

*** NOTE *** CP= 20026.940 TIME= 14:34:39
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:34:39 NOV 05, 1995 CP= 20026.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 22.05 CRITERION= .7525E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.099
HT FLOW CONVERGENCE VALUE= 1.597 CRITERION= .7195E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2963
HT FLOW CONVERGENCE VALUE= .1355 CRITERION= .7195E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9372E-02
HT FLOW CONVERGENCE VALUE= .4832E-02 CRITERION= .7195E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 38
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20677.790 TIME= 14:57:53
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:57:54 NOV 05, 1995 CP= 20678.230
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 157.8 CRITERION= .1714
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 14.79
HT FLOW CONVERGENCE VALUE= 7.623 CRITERION= .6703E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.713
HT FLOW CONVERGENCE VALUE= .6921 CRITERION= .6703E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4489E-01
HT FLOW CONVERGENCE VALUE= .2086E-01 CRITERION= .6703E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 41
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21324.390 TIME= 15:21:05
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:21:05 NOV 05, 1995 CP= 21324.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 112.2 CRITERION= .1292
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.406
HT FLOW CONVERGENCE VALUE= 4.537 CRITERION= .6406E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.018
HT FLOW CONVERGENCE VALUE= .3822 CRITERION= .6406E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2358E-01
HT FLOW CONVERGENCE VALUE= .1016E-01 CRITERION= .6406E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 44
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21977.450 TIME= 15:44:22
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:44:23 NOV 05, 1995 CP= 21977.900
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 94.26 CRITERION= .1128
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 7.372
HT FLOW CONVERGENCE VALUE= 3.332 CRITERION= .6195E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7498
HT FLOW CONVERGENCE VALUE= .2486 CRITERION= .6195E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1580E-01
HT FLOW CONVERGENCE VALUE= .6656E-02 CRITERION= .6195E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 47
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22623.000 TIME= 16:07:34
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:07:34 NOV 05, 1995 CP= 22623.440
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 85.43 CRITERION= .1045
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.331
HT FLOW CONVERGENCE VALUE= 2.694 CRITERION= .6026E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6076
HT FLOW CONVERGENCE VALUE= .1918 CRITERION= .6026E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1189E-01
HT FLOW CONVERGENCE VALUE= .4717E-02 CRITERION= .6026E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 50

*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23275.040 TIME= 16:30:51
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:30:51 NOV 05, 1995 CP= 23275.480
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 75.05 CRITERION= .9531E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.314
HT FLOW CONVERGENCE VALUE= 2.199 CRITERION= .5877E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4828
HT FLOW CONVERGENCE VALUE= .1461 CRITERION= .5877E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8970E-02
HT FLOW CONVERGENCE VALUE= .3356E-02 CRITERION= .5877E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 53
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23927.810 TIME= 16:54:08
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:54:09 NOV 05, 1995 CP= 23928.250
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 64.50 CRITERION= .8633E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.397
HT FLOW CONVERGENCE VALUE= 1.775 CRITERION= .5740E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3800
HT FLOW CONVERGENCE VALUE= .1107 CRITERION= .5740E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6826E-02
HT FLOW CONVERGENCE VALUE= .2407E-02 CRITERION= .5740E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 56
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24584.120 TIME= 17:17:44
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:17:45 NOV 05, 1995 CP= 24584.620
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 59.00 CRITERION= .8141E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.899
HT FLOW CONVERGENCE VALUE= 1.547 CRITERION= .5611E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3221
HT FLOW CONVERGENCE VALUE= .9054E-01 CRITERION= .5611E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5586E-02
HT FLOW CONVERGENCE VALUE= .1873E-02 CRITERION= .5611E-01 <<< CONVERGED

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>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 59
*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25292.500 TIME= 17:47:46
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:47:47 NOV 05, 1995 CP= 25292.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 46.12 CRITERION= .7165E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.965
HT FLOW CONVERGENCE VALUE= 1.138 CRITERION= .5485E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2343
HT FLOW CONVERGENCE VALUE= .6425E-01 CRITERION= .5485E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4081E-02
HT FLOW CONVERGENCE VALUE= .1283E-02 CRITERION= .5485E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 62
*** TIME = .284018E+09 TIME INC = .315576E+08
NSUBST,20,40,15,ON
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
794.115561 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

```

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 139.973714 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25971.900 TIME= 18:14:49
This load step will be a static (steady-state) step.

*** NOTE *** CP= 25972.340 TIME= 18:14:49
The step data was checked and warning messages were found.
Please review output or errors file (glss21x2.err) for these warning
messages.

*** NOTE *** CP= 25972.350 TIME= 18:14:49
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:14:49 NOV 05, 1995 CP= 25972.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER.	22
TIME AT END OF THE LOAD STEP.	.31558E+09
AUTOMATIC TIME STEPPING	ON
INITIAL NUMBER OF SUBSTEPS	0
MAXIMUM NUMBER OF SUBSTEPS	0
MINIMUM NUMBER OF SUBSTEPS	1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS.	25
STEP CHANGE BOUNDARY CONDITIONS	NO
TRANSIENT (INERTIA) EFFECTS	OFF

TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 39.24 CRITERION= .6645E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.472
 HT FLOW CONVERGENCE VALUE= .9172 CRITERION= .5363E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1877
 HT FLOW CONVERGENCE VALUE= .5020E-01 CRITERION= .5363E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 64
 *** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26432.690 TIME= 18:31:37
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 18:31:38 NOV 05, 1995 CP= 26433.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 287.5 CRITERION= .2905
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 17.80
 HT FLOW CONVERGENCE VALUE= 3.295 CRITERION= .4302E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8180
 HT FLOW CONVERGENCE VALUE= .1618 CRITERION= .4302E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1071E-01
 HT FLOW CONVERGENCE VALUE= .2270E-02 CRITERION= .4302E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 67
 *** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27085.010 TIME= 18:54:55
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 18:54:55 NOV 05, 1995 CP= 27085.450
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 208.6 CRITERION= .2113
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 11.46
 HT FLOW CONVERGENCE VALUE= 1.683 CRITERION= .3461E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4094
 HT FLOW CONVERGENCE VALUE= .6406E-01 CRITERION= .3461E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4406E-02
 HT FLOW CONVERGENCE VALUE= .6774E-03 CRITERION= .3461E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 70
 *** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27737.330 TIME= 19:18:12
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 19:18:13 NOV 05, 1995 CP= 27737.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 99.75 CRITERION= .1034
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.080
 HT FLOW CONVERGENCE VALUE= .6142 CRITERION= .2794E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1461
 HT FLOW CONVERGENCE VALUE= .2032E-01 CRITERION= .2794E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 72
 *** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28204.200 TIME= 19:35:07
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 19:35:08 NOV 05, 1995 CP= 28204.640
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.80 CRITERION= .5264E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.349
 HT FLOW CONVERGENCE VALUE= .2596 CRITERION= .2265E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5521E-01
 HT FLOW CONVERGENCE VALUE= .6610E-02 CRITERION= .2265E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 74
 *** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28664.910 TIME= 19:51:57
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 19:51:58 NOV 05, 1995 CP= 28665.360
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.70 CRITERION= .2817E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.740
 HT FLOW CONVERGENCE VALUE= .1287 CRITERION= .1844E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2228E-01
 HT FLOW CONVERGENCE VALUE= .2212E-02 CRITERION= .1844E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 76
 *** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29131.670 TIME= 20:08:51
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:08:52 NOV 05, 1995 CP= 29132.110

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 4.640 CRITERION= .1543E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.044
HT FLOW CONVERGENCE VALUE= .8716E-01 CRITERION= .1509E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8413E-02
HT FLOW CONVERGENCE VALUE= .5344E-03 CRITERION= .1509E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 78
*** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29592.980 TIME= 20:25:40
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:25:41 NOV 05, 1995 CP= 29593.430
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.33 CRITERION= .1877E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.432
HT FLOW CONVERGENCE VALUE= .9306E-01 CRITERION= .1241E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9410E-02
HT FLOW CONVERGENCE VALUE= .4172E-03 CRITERION= .1241E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 80
*** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30058.920 TIME= 20:42:34
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:42:35 NOV 05, 1995 CP= 30059.360
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.11 CRITERION= .1815E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.132
HT FLOW CONVERGENCE VALUE= .7137E-01 CRITERION= .1028E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8473E-02
HT FLOW CONVERGENCE VALUE= .3249E-03 CRITERION= .1028E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 82
*** TIME = .284018E+10 TIME INC = .315576E+09
NSUBST,30,60,20,ON

Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
126.773910 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 175.696156 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING ***

CP= 30524.420 TIME= 20:59:27

This load step will be a static (steady-state) step.

*** NOTE *** CP= 30524.860 TIME= 20:59:27
The step data was checked and warning messages were found.
Please review output or errors file (glss21x2.err) for these warning messages.

*** NOTE *** CP= 30524.860 TIME= 20:59:27
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:59:27 NOV 05, 1995 CP= 30524.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
TIME AT END OF THE LOAD STEP.31558E+10
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 15.46 CRITERION= .1759E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.883
HT FLOW CONVERGENCE VALUE= .5518E-01 CRITERION= .8562E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7417E-02
HT FLOW CONVERGENCE VALUE= .2441E-03 CRITERION= .8562E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 84
*** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30990.410 TIME= 21:16:20
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:16:21 NOV 05, 1995 CP= 30990.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 90.73 CRITERION= .9052E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -8.734
HT FLOW CONVERGENCE VALUE= .3060 CRITERION= .2097E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4342E-01
HT FLOW CONVERGENCE VALUE= .3744E-03 CRITERION= .2097E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 86
*** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31452.060 TIME= 21:33:10
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:33:10 NOV 05, 1995 CP= 31452.500
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 87.60 CRITERION= .8760E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.243
HT FLOW CONVERGENCE VALUE= .2903E-01 CRITERION= .9321E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1555E-02
HT FLOW CONVERGENCE VALUE= .6871E-05 CRITERION= .9321E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 88
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31918.090 TIME= 21:50:04
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:50:04 NOV 05, 1995 CP= 31918.530
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 44.93 CRITERION= .4493E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.641
HT FLOW CONVERGENCE VALUE= .2948E-02 CRITERION= .5204E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3953E-03
HT FLOW CONVERGENCE VALUE= .8409E-06 CRITERION= .5204E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 90
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32379.450 TIME= 22:06:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:06:54 NOV 05, 1995 CP= 32379.890
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.47 CRITERION= .2847E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.658
HT FLOW CONVERGENCE VALUE= .8531E-03 CRITERION= .3195E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2787E-03
HT FLOW CONVERGENCE VALUE= .3833E-06 CRITERION= .3195E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 92
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32845.040 TIME= 22:23:47
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:23:47 NOV 05, 1995 CP= 32845.490
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.26 CRITERION= .3326E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.867
HT FLOW CONVERGENCE VALUE= .9531E-03 CRITERION= .2137E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3056E-03
HT FLOW CONVERGENCE VALUE= .2896E-06 CRITERION= .2137E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 94
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33311.300 TIME= 22:40:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:40:41 NOV 05, 1995 CP= 33311.750
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 39.54 CRITERION= .3954E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.197
HT FLOW CONVERGENCE VALUE= .1280E-02 CRITERION= .1570E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3434E-03
HT FLOW CONVERGENCE VALUE= .2440E-06 CRITERION= .1570E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 96
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33777.760 TIME= 22:57:35
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:57:35 NOV 05, 1995 CP= 33778.210
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.90 CRITERION= .4290E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.398
HT FLOW CONVERGENCE VALUE= .1527E-02 CRITERION= .1264E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3639E-03
HT FLOW CONVERGENCE VALUE= .2116E-06 CRITERION= .1264E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 98
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34255.360 TIME= 23:16:04
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:16:05 NOV 05, 1995 CP= 34255.810

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.84 CRITERION= .4084E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.312
 HT FLOW CONVERGENCE VALUE= .1548E-02 CRITERION= .1099E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3462E-03
 HT FLOW CONVERGENCE VALUE= .1773E-06 CRITERION= .1099E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 100
 *** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34739.430 TIME= 23:35:32
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:35:33 NOV 05, 1995 CP= 34739.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.50 CRITERION= .3650E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.095
 HT FLOW CONVERGENCE VALUE= .1441E-02 CRITERION= .1009E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3124E-03
 HT FLOW CONVERGENCE VALUE= .1483E-06 CRITERION= .1009E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 102
 *** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 35221.340

Create element contour plots of solution results

Sort through solution results for time of max temp.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:54:36 NOV 05, 1995 CP= 35221.350
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7655 TEMP	peakgls	113.5	31.56	192.4	.1262E+10

 *GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= .126230403E+10

***** ROUTINE COMPLETED ***** CP = 35221.790

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:54:40 NOV 05, 1995 CP= 35221.840
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .12623E+10

SET COMMAND GOT LOAD STEP= 25 SUBSTEP= 1 CUMULATIVE ITERATION= 72
TIME/FREQUENCY= .12623E+10

TITLE=
DHLW WP at Time of Peak Temp. (40.000001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (40.000001 years)

*** WARNING *** CP= 35262.150 TIME= 23:55:40
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35262.180 TIME= 23:55:40
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 50
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.46 BY .14523 TO 192.91

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 35310.080 TIME= 23:56:43
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35310.110 TIME= 23:56:43
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 64
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.46 BY .14523 TO 192.91

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 35356.980 TIME= 23:57:46
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35357.020 TIME= 23:57:46
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 5
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.

- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.46 BY .14523 TO 192.91

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 35376.260 TIME= 23:58:10
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35376.300 TIME= 23:58:10
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 84
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 174.46 BY .14523 TO 192.91

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 35424.460 TIME= 23:59:19
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35424.490 TIME= 23:59:19
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 35433.400

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister

i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:59:31 NOV 05, 1995 CP= 35433.410
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2	IS AT NODE 7952	ITEM= TEMP COMP=	NAME= t94i045
VARIABLE 3	IS AT NODE 7726	ITEM= TEMP COMP=	NAME= t94o045
VARIABLE 4	IS AT NODE 7730	ITEM= TEMP COMP=	NAME= h94i045
VARIABLE 5	IS AT NODE 7654	ITEM= TEMP COMP=	NAME= c94i045
VARIABLE 6	IS AT NODE 7686	ITEM= TEMP COMP=	NAME= h94o045
VARIABLE 7	IS AT NODE 7667	ITEM= TEMP COMP=	NAME= s94i045
VARIABLE 8	IS AT NODE 7929	ITEM= TEMP COMP=	NAME= s94o045
VARIABLE 9	IS AT NODE 8013	ITEM= TEMP COMP=	NAME= i94i045
VARIABLE 10	IS AT NODE 8030	ITEM= TEMP COMP=	NAME= i94o045
VARIABLE 11	IS AT NODE 8145	ITEM= TEMP COMP=	NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7952 TEMP	t94i045	110.5	31.56	189.3	.1262E+10
3	NSOL	7726 TEMP	t94o045	110.6	31.56	189.3	.1262E+10
4	NSOL	7730 TEMP	h94i045	118.0	31.56	192.6	.1262E+10
5	NSOL	7654 TEMP	c94i045	115.1	31.56	192.3	.1262E+10
6	NSOL	7686 TEMP	h94o045	101.8	31.56	188.4	.1262E+10
7	NSOL	7667 TEMP	s94i045	78.81	31.56	182.1	.1893E+10
8	NSOL	7929 TEMP	s94o045	78.67	31.56	182.1	.1893E+10
9	NSOL	8013 TEMP	i94i045	51.95	.1000E-05	179.7	.1893E+10
10	NSOL	8030 TEMP	i94o045	51.67	.1000E-05	179.6	.1893E+10
11	NSOL	8145 TEMP	o94o045	51.38	.1000E-05	179.6	.1893E+10

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:59:37 NOV 05, 1995 CP= 35435.650
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	110.517	110.567	117.979	115.130	101.812	78.8134
.20000E-05	110.513	110.562	117.975	115.128	101.810	78.8121
31.558	110.512	110.561	117.974	115.126	101.808	78.8110
.31558E+07	121.416	121.466	129.042	126.516	113.665	91.2512
.63116E+07	126.066	126.115	133.699	131.329	118.778	96.7909
.94673E+07	129.185	129.234	136.792	134.534	122.229	100.608
.12623E+08	131.556	131.604	139.123	136.953	124.864	103.573
.15779E+08	133.477	133.525	140.999	138.904	127.008	106.018
.31535E+08	135.095	135.142	142.569	140.539	128.819	108.106
.22090E+08	136.503	136.550	143.929	141.956	130.398	109.942
.25246E+08	137.742	137.788	145.121	143.198	131.789	111.570
.28402E+08	138.861	138.907	146.196	144.318	133.045	113.044
.31558E+08	139.886	139.932	147.177	145.341	134.196	114.401
.63115E+08	147.402	147.445	154.358	152.815	142.590	124.289
.94673E+08	152.653	152.695	159.409	158.042	148.373	130.973
.12623E+09	157.096	157.137	163.715	162.480	153.209	136.451
.15779E+09	161.101	161.141	167.614	166.485	157.537	141.298
.18935E+09	164.503	164.542	170.915	169.875	161.204	145.414
.22090E+09	167.288	167.326	173.599	172.631	164.207	148.825
.25246E+09	169.756	169.793	175.966	175.061	166.866	151.864
.28402E+09	171.500	171.537	177.601	176.745	168.761	154.119
.31558E+09	172.877	172.913	178.866	178.054	170.268	155.969
.63115E+09	182.341	182.371	187.271	186.746	180.621	169.255
.94673E+09	188.140	188.164	192.171	191.813	186.945	177.853
.12623E+10	189.325	189.344	192.593	192.320	188.406	181.080
.15779E+10	188.772	188.787	191.421	191.200	188.028	182.090
.18935E+10	187.558	187.571	189.710	189.527	186.942	182.106
.22090E+10	185.947	185.957	187.702	187.548	185.429	181.469
.25246E+10	183.872	183.880	185.309	185.176	183.428	180.167
.28402E+10	182.023	182.030	183.208	183.094	181.643	178.941
.31558E+10	180.367	180.373	181.350	181.252	180.040	177.786
.63115E+10	172.413	172.414	172.649	172.621	172.321	171.766
.94673E+10	167.313	167.313	167.417	167.403	167.268	167.021
.12623E+11	164.722	164.722	164.779	164.771	164.696	164.558
.15779E+11	163.088	163.088	163.123	163.118	163.072	162.987
.18935E+11	161.235	161.235	161.258	161.254	161.223	161.166
.22090E+11	159.044	159.044	159.061	159.059	159.036	158.994
.25246E+11	156.651	156.651	156.664	156.662	156.643	156.610
.28402E+11	154.341	154.341	154.353	154.351	154.335	154.305
.31558E+11	152.247	152.247	152.258	152.256	152.241	152.214

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:37 NOV 05, 1995 CP= 35435.660
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP s94o045	8013 TEMP i94i045	8030 TEMP i94o045	8145 TEMP o94o045
.10000E-05	78.6702	51.9506	51.6737	51.3788
.20000E-05	78.6689	51.9556	51.6786	51.3836
31.558	78.6678	51.9549	51.6779	51.3830
.31558E+07	91.1131	68.0500	67.7789	67.4883
.63116E+07	96.6562	75.1893	74.9228	74.6366
.94673E+07	100.476	80.0981	79.8356	79.5533
.12623E+08	103.444	83.9147	83.6560	83.3773
.15779E+08	105.891	87.0600	86.8046	86.5294
.18935E+08	107.981	89.7461	89.4940	89.2220
.22090E+08	109.819	92.1033	91.8541	91.5851

.25246E+08	111.448	94.1898	93.9435	93.6773
.28402E+08	112.924	96.0730	95.8297	95.5662
.31558E+08	114.283	97.8039	97.5633	97.3023
.63115E+08	124.180	110.184	109.963	109.725
.94673E+08	130.871	118.274	118.066	117.841
.12623E+09	136.354	124.739	124.540	124.325
.15779E+09	141.203	130.364	130.172	129.965
.18935E+09	145.323	135.111	134.926	134.726
.22090E+09	148.736	139.043	138.862	138.668
.25246E+09	151.777	142.536	142.361	142.173
.28402E+09	154.035	145.168	144.997	144.814
.31558E+09	155.887	147.349	147.183	147.004
.63115E+09	169.191	163.039	162.910	162.770
.94673E+09	177.802	173.176	173.073	172.963
.12623E+10	181.039	177.401	177.319	177.231
.15779E+10	182.057	179.134	179.068	178.997
.18935E+10	182.079	179.704	179.650	179.592
.22090E+10	181.447	179.497	179.452	179.405
.25246E+10	180.149	178.531	178.495	178.456
.28402E+10	178.925	177.576	177.545	177.513
.31558E+10	177.773	176.640	176.615	176.588
.63115E+10	171.763	171.474	171.468	171.461
.94673E+10	167.019	166.886	166.883	166.880
.12623E+11	164.557	164.481	164.480	164.478
.15779E+11	162.986	162.939	162.938	162.937
.18935E+11	161.166	161.134	161.133	161.133
.22090E+11	158.994	158.970	158.969	158.969
.25246E+11	156.609	156.590	156.589	156.589
.28402E+11	154.305	154.288	154.287	154.287
.31558E+11	152.214	152.198	152.197	152.197

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 35435.890 TIME= 23:59:37
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7947 TEMP	t04i045	109.5	31.56	189.2	.1262E+10
3	NSOL	7718 TEMP	t04o045	109.5	31.56	189.2	.1262E+10
4	NSOL	7720 TEMP	h04i045	117.0	31.56	192.6	.1262E+10
5	NSOL	7642 TEMP	c04i045	113.9	31.56	192.2	.1262E+10
6	NSOL	7679 TEMP	h04o045	100.7	31.56	188.3	.1262E+10
7	NSOL	7662 TEMP	s04i045	77.50	31.56	182.0	.1893E+10
8	NSOL	7927 TEMP	s04o045	77.36	31.56	182.0	.1893E+10

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. 9 NSOL 8008 TEMP      i04i045  51.03      .1000E-05  179.7      .1893E+10
10 NSOL 8027 TEMP      i04o045  50.74      .1000E-05  179.6      .1893E+10
11 NSOL 8142 TEMP      o04o045  50.45      .1000E-05  179.6      .1893E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303      VERSION=HP 9000/7XX 23:59:39 NOV 05, 1995 CP= 35437.850
FOR SUPPORT CALL ROBERT BAHNEY  PHONE (702) 794-5337  FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	109.484	109.537	117.020	113.927	100.696	77.4983
.20000E-05	109.480	109.532	117.017	113.925	100.694	77.4972
31.558	109.479	109.531	117.016	113.924	100.693	77.4961
.31558E+07	120.559	120.613	128.287	125.534	112.763	90.1464
.63116E+07	125.283	125.336	133.028	130.439	117.965	95.7759
.94673E+07	128.450	128.503	136.175	133.705	121.475	99.6525
.12623E+08	130.857	130.909	138.547	136.172	124.155	102.664
.15779E+08	132.808	132.859	140.456	138.160	126.335	105.146
.18935E+08	134.451	134.502	142.053	139.826	128.176	107.266
.22090E+08	135.880	135.931	143.436	141.270	129.781	109.129
.25246E+08	137.138	137.188	144.648	142.536	131.194	110.781
.28402E+08	138.273	138.323	145.741	143.677	132.470	112.276
.31558E+08	139.313	139.363	146.738	144.719	133.639	113.653
.63115E+08	146.928	146.975	154.024	152.318	142.151	123.666
.94673E+08	152.235	152.280	159.132	157.614	147.998	130.420
.12623E+09	156.717	156.761	163.479	162.100	152.879	135.947
.15779E+09	160.753	160.797	167.409	166.144	157.242	140.831
.18935E+09	164.180	164.222	170.736	169.564	160.937	144.978
.22090E+09	166.984	167.026	173.439	172.343	163.962	148.414
.25246E+09	169.469	169.510	175.823	174.794	166.640	151.474
.28402E+09	171.227	171.267	177.470	176.494	168.549	153.746
.31558E+09	172.615	172.655	178.745	177.816	170.068	155.611
.63115E+09	182.159	182.191	187.211	186.597	180.499	169.004
.94673E+09	188.006	188.032	192.139	191.711	186.865	177.667
.12623E+10	189.219	189.240	192.571	192.243	188.346	180.934
.15779E+10	188.686	188.703	191.404	191.139	187.981	181.973
.18935E+10	187.488	187.501	189.696	189.477	186.904	182.011
.22090E+10	185.889	185.900	187.690	187.506	185.397	181.391
.25246E+10	183.823	183.832	185.298	185.141	183.401	180.102
.28402E+10	181.982	181.990	183.198	183.063	181.620	178.886
.31558E+10	180.332	180.338	181.341	181.226	180.020	177.740
.63115E+10	172.404	172.405	172.646	172.614	172.315	171.754
.94673E+10	167.308	167.309	167.415	167.399	167.265	167.015
.12623E+11	164.719	164.720	164.778	164.769	164.694	164.554
.15779E+11	163.087	163.087	163.123	163.117	163.071	162.985
.18935E+11	161.233	161.234	161.257	161.254	161.223	161.165
.22090E+11	159.044	159.044	159.061	159.058	159.035	158.993
.25246E+11	156.650	156.650	156.664	156.661	156.643	156.609
.28402E+11	154.340	154.340	154.352	154.350	154.334	154.304
.31558E+11	152.246	152.246	152.257	152.255	152.241	152.213

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303      VERSION=HP 9000/7XX 23:59:39 NOV 05, 1995 CP= 35437.860
FOR SUPPORT CALL ROBERT BAHNEY  PHONE (702) 794-5337  FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	77.3582	51.0251	50.7422	50.4538
.20000E-05	77.3571	51.0298	50.7469	50.4584
31.558	77.3561	51.0292	50.7463	50.4578
.31558E+07	90.0112	67.3329	67.0564	66.7716
.63116E+07	95.6439	74.5539	74.2823	74.0015
.94673E+07	99.5233	79.5151	79.2477	78.9705
.12623E+08	102.537	83.3707	83.1072	82.8336
.15779E+08	105.021	86.5469	86.2869	86.0165
.18935E+08	107.143	89.2586	89.0019	88.7346
.22090E+08	109.008	91.6375	91.3839	91.1195
.25246E+08	110.661	93.7427	93.4920	93.2303
.28402E+08	112.158	95.6423	95.3947	95.1355
.31558E+08	113.536	97.3878	97.1430	96.8862
.63115E+08	123.560	109.858	109.634	109.399
.94673E+08	130.320	117.994	117.782	117.560
.12623E+09	135.851	124.490	124.288	124.076
.15779E+09	140.738	130.139	129.944	129.740
.18935E+09	144.888	134.904	134.716	134.518
.22090E+09	148.327	138.850	138.667	138.476
.25246E+09	151.389	142.356	142.179	141.993
.28402E+09	153.664	144.997	144.825	144.644
.31558E+09	155.530	147.187	147.019	146.842
.63115E+09	168.941	162.932	162.801	162.664
.94673E+09	177.617	173.100	172.996	172.887
.12623E+10	180.894	177.343	177.260	177.173
.15779E+10	181.940	179.088	179.021	178.950
.18935E+10	181.984	179.667	179.612	179.554
.22090E+10	181.369	179.466	179.421	179.374
.25246E+10	180.084	178.506	178.469	178.430
.28402E+10	178.871	177.554	177.524	177.492
.31558E+10	177.728	176.622	176.597	176.570
.63115E+10	171.751	171.469	171.463	171.456
.94673E+10	167.014	166.884	166.881	166.878
.12623E+11	164.554	164.480	164.478	164.477
.15779E+11	162.984	162.938	162.937	162.936
.18935E+11	161.165	161.134	161.133	161.132
.22090E+11	158.993	158.969	158.969	158.968
.25246E+11	156.609	156.590	156.589	156.589
.28402E+11	154.304	154.287	154.287	154.287
.31558E+11	152.213	152.197	152.197	152.197

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35438.070 TIME= 23:59:39
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	63 TEMP	t01i135	109.5	31.56	189.2	.1262E+10
3 NSOL	20 TEMP	t01o135	109.5	31.56	189.2	.1262E+10
4 NSOL	22 TEMP	h01i135	117.0	31.56	192.6	.1262E+10
5 NSOL	1 TEMP	c01i135	113.9	31.56	192.2	.1262E+10
6 NSOL	11 TEMP	h01o135	100.7	31.56	188.3	.1262E+10
7 NSOL	6 TEMP	s01i135	77.45	31.56	182.0	.1893E+10
8 NSOL	58 TEMP	s01o135	77.31	31.56	182.0	.1893E+10
9 NSOL	84 TEMP	i01i135	50.95	.1000E-05	179.7	.1893E+10
10 NSOL	106 TEMP	i01o135	50.67	.1000E-05	179.6	.1893E+10
11 NSOL	124 TEMP	o01o135	50.38	.1000E-05	179.5	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:41 NOV 05, 1995 CP= 35440.020
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	109.477	109.530	117.003	113.899	100.658	77.4514
.20000E-05	109.473	109.526	116.999	113.897	100.656	77.4503
31.558	109.472	109.525	116.998	113.896	100.655	77.4492
.31558E+07	120.554	120.607	128.271	125.508	112.727	90.1022
.63116E+07	125.277	125.330	133.012	130.414	117.931	95.7332
.94673E+07	128.445	128.497	136.160	133.681	121.442	99.6110
.12623E+08	130.852	130.904	138.532	136.148	124.123	102.624
.15779E+08	132.803	132.855	140.441	138.137	126.304	105.106
.18935E+08	134.446	134.497	142.039	139.803	128.145	107.227
.22090E+08	135.876	135.926	143.422	141.248	129.751	109.091
.25246E+08	137.133	137.183	144.635	142.514	131.164	110.743
.28402E+08	138.269	138.319	145.727	143.656	132.441	112.239
.31558E+08	139.309	139.358	146.724	144.698	133.610	113.617
.63115E+08	146.925	146.972	154.012	152.299	142.125	123.634
.94673E+08	152.232	152.277	159.121	157.596	147.974	130.390
.12623E+09	156.714	156.758	163.469	162.084	152.857	135.919
.15779E+09	160.751	160.794	167.400	166.128	157.221	140.804
.18935E+09	164.177	164.219	170.727	169.549	160.917	144.953
.22090E+09	166.982	167.023	173.430	172.329	163.943	148.389
.25246E+09	169.466	169.507	175.814	174.781	166.621	151.450
.28402E+09	171.225	171.265	177.461	176.481	168.531	153.723
.31558E+09	172.613	172.652	178.737	177.803	170.051	155.589
.63115E+09	182.158	182.189	187.205	186.587	180.486	168.988
.94673E+09	188.004	188.030	192.134	191.704	186.855	177.654
.12623E+10	189.218	189.239	192.568	192.237	188.338	180.924
.15779E+10	188.685	188.702	191.401	191.134	187.974	181.965
.18935E+10	187.487	187.501	189.693	189.473	186.898	182.004
.22090E+10	185.888	185.899	187.688	187.503	185.392	181.385
.25246E+10	183.822	183.832	185.296	185.138	183.397	180.098
.28402E+10	181.982	181.989	183.196	183.061	181.617	178.882
.31558E+10	180.331	180.338	181.340	181.224	180.018	177.737
.63115E+10	172.403	172.405	172.646	172.614	172.315	171.754
.94673E+10	167.308	167.309	167.415	167.399	167.265	167.015
.12623E+11	164.719	164.720	164.778	164.769	164.694	164.554
.15779E+11	163.087	163.087	163.123	163.117	163.071	162.985
.18935E+11	161.233	161.234	161.257	161.254	161.223	161.165
.22090E+11	159.044	159.044	159.061	159.058	159.035	158.993
.25246E+11	156.650	156.650	156.664	156.661	156.643	156.609
.28402E+11	154.340	154.340	154.352	154.350	154.334	154.304

1 .31558E+11 152.246 152.246 152.257 152.255 152.240 152.213

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:41 NOV 05, 1995 CP= 35440.030
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
.10000E-05	801.0135	1011.135	1010.135	0010.135
.20000E-05	77.3113	50.9534	50.6703	50.3809
31.558	77.3101	50.9581	50.6750	50.3855
.31558E+07	77.3091	50.9575	50.6744	50.3850
.63116E+07	89.9669	67.2691	66.9924	66.7067
.94673E+07	95.6011	74.4937	74.2219	73.9403
.12623E+08	99.4817	79.4575	79.1900	78.9120
.15779E+08	102.497	83.3153	83.0516	82.7771
.18935E+08	104.982	86.4932	86.2330	85.9618
.22090E+08	107.104	89.2064	88.9495	88.6814
.25246E+08	108.970	91.5866	91.3328	91.0676
.28402E+08	110.624	93.6930	93.4421	93.1796
.31558E+08	112.121	95.5936	95.3458	95.0858
.63115E+08	113.500	97.3400	97.0951	96.8376
.94673E+08	123.528	109.817	109.593	109.357
.12623E+09	130.290	117.957	117.745	117.522
.15779E+09	135.823	124.456	124.253	124.040
.18935E+09	140.712	130.106	129.911	129.706
.22090E+09	144.863	134.873	134.685	134.487
.25246E+09	148.302	138.821	138.638	138.446
.28402E+09	151.365	142.328	142.151	141.964
.31558E+09	153.641	144.970	144.798	144.616
.63115E+09	155.508	147.161	146.992	146.815
.94673E+09	168.924	162.913	162.782	162.644
.12623E+10	177.604	173.086	172.982	172.873
.15779E+10	180.884	177.332	177.249	177.161
.18935E+10	181.932	179.079	179.012	178.941
.22090E+10	181.978	179.659	179.604	179.547
.25246E+10	181.363	179.460	179.415	179.368
.28402E+10	180.080	178.501	178.464	178.425
.31558E+10	178.867	177.550	177.520	177.487
.63115E+10	177.725	176.619	176.593	176.566
.94673E+10	171.750	171.468	171.462	171.455
.12623E+11	167.013	166.884	166.881	166.878
.15779E+11	164.553	164.480	164.478	164.476
.18935E+11	162.984	162.938	162.937	162.936
.22090E+11	161.165	161.133	161.133	161.132
.25246E+11	158.993	158.969	158.969	158.968
.28402E+11	156.608	156.589	156.589	156.589
.31558E+11	154.304	154.287	154.287	154.287
	152.213	152.197	152.197	152.197

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 35440.240 TIME= 23:59:41
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045
 VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045
 VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	87.28	31.56	184.5	.1578E+10
3 NSOL	7722 TEMP	tb4o045	87.22	31.56	184.5	.1578E+10
4 NSOL	7724 TEMP	hb4i045	82.18	31.56	183.3	.1578E+10
5 NSOL	7650 TEMP	cb4i045	78.17	31.56	182.5	.1578E+10
6 NSOL	7682 TEMP	hb4o045	73.43	31.56	181.7	.1893E+10
7 NSOL	7666 TEMP	sb4i045	67.99	31.56	180.8	.1893E+10
8 NSOL	7928 TEMP	sb4o045	67.93	31.56	180.8	.1893E+10
9 NSOL	8012 TEMP	ib4i045	48.67	.1000E-05	179.3	.1893E+10
10 NSOL	8029 TEMP	ib4o045	48.44	.1000E-05	179.3	.1893E+10
11 NSOL	8144 TEMP	ob4o045	48.21	.1000E-05	179.2	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:43 NOV 05, 1995 CP= 35442.190
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	87.2825	87.2198	82.1789	78.1714	73.4323	67.9890
.20000E-05	87.2826	87.2199	82.1788	78.1714	73.4326	67.9896
31.558	87.2813	87.2186	82.1775	78.1703	73.4316	67.9886
.31558E+07	99.8209	99.7584	94.8308	91.0389	86.5855	81.4443
.63116E+07	105.309	105.247	100.414	96.7478	92.4513	87.4784
.94673E+07	109.054	108.993	104.241	100.670	96.4945	91.6514
.12623E+08	111.940	111.879	107.201	103.712	99.6370	94.9055
.15779E+08	114.304	114.244	109.634	106.215	102.228	97.5939
.18935E+08	116.313	116.254	111.706	108.351	104.442	99.8946
.22090E+08	118.072	118.013	113.524	110.226	106.387	101.918
.25246E+08	119.626	119.568	115.132	111.887	108.112	103.714
.28402E+08	121.032	120.974	116.588	113.390	109.673	105.340
.31558E+08	122.323	122.266	117.926	114.773	111.109	106.837
.63115E+08	131.697	131.644	127.645	124.811	121.533	117.690
.94673E+08	138.061	138.010	134.217	131.575	128.526	124.939
.12623E+09	143.306	143.256	139.612	137.107	134.224	130.822
.15779E+09	147.960	147.912	144.387	141.994	139.245	135.991
.18935E+09	151.907	151.859	148.437	146.139	143.503	140.374
.22090E+09	155.160	155.114	151.784	149.568	147.028	144.009
.25246E+09	158.050	158.004	154.761	152.618	150.166	147.246
.28402E+09	160.161	160.117	156.954	154.877	152.502	149.668
.31558E+09	161.873	161.830	158.743	156.726	154.421	151.667
.63115E+09	173.951	173.916	171.482	169.943	168.190	166.077
.94673E+09	181.602	181.574	179.639	178.440	177.078	175.426
.12623E+10	184.096	184.073	182.519	181.563	180.478	179.159
.15779E+10	184.532	184.513	183.255	182.483	181.607	180.542

.18935E+10	184.093	184.078	183.055	182.426	181.713	180.846
.22090E+10	183.096	183.083	182.245	181.730	181.144	180.434
.25246E+10	181.507	181.496	180.806	180.380	179.896	179.309
.28402E+10	180.050	180.042	179.470	179.115	178.713	178.225
.31558E+10	178.712	178.705	178.227	177.931	177.593	177.186
.63115E+10	171.994	171.992	171.874	171.800	171.716	171.614
.94673E+10	167.122	167.121	167.069	167.035	166.997	166.951
.12623E+11	164.614	164.614	164.584	164.565	164.544	164.518
.15779E+11	163.022	163.021	163.003	162.991	162.978	162.962
.18935E+11	161.190	161.189	161.177	161.169	161.160	161.150
.22090E+11	159.011	159.011	159.002	158.996	158.989	158.982
.25246E+11	156.623	156.623	156.616	156.611	156.606	156.599
.28402E+11	154.317	154.317	154.311	154.307	154.302	154.296
.31558E+11	152.225	152.225	152.219	152.215	152.211	152.206

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:43 NOV 05, 1995 CP= 35442.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP	8012 TEMP	8029 TEMP	8144 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	67.9293	48.6695	48.4429	48.2070
.20000E-05	67.9300	48.6741	48.4475	48.2116
31.558	67.9290	48.6736	48.4469	48.2110
.31558E+07	81.3884	65.0108	64.7886	64.5582
.63116E+07	87.4244	72.2814	72.0628	71.8367
.94673E+07	91.5988	77.2882	77.0729	76.8505
.12623E+08	94.8543	81.1863	80.9739	80.7548
.15779E+08	97.5438	84.4015	84.1919	83.9758
.18935E+08	99.8455	87.1494	86.9423	86.7290
.22090E+08	101.870	89.5619	89.3572	89.1465
.25246E+08	103.667	91.6981	91.4956	91.2873
.28402E+08	105.293	93.6266	93.4263	93.2203
.31558E+08	106.791	95.3994	95.2014	94.9974
.63115E+08	117.649	108.081	107.900	107.713
.94673E+08	124.901	116.349	116.178	116.003
.12623E+09	130.785	122.941	122.777	122.610
.15779E+09	135.956	128.667	128.509	128.349
.18935E+09	140.341	133.498	133.345	133.191
.22090E+09	143.977	137.500	137.351	137.202
.25246E+09	147.215	141.056	140.912	140.767
.28402E+09	149.638	143.741	143.601	143.460
.31558E+09	151.638	145.969	145.833	145.695
.63115E+09	166.055	162.020	161.914	161.808
.94673E+09	175.409	172.398	172.314	172.230
.12623E+10	179.145	176.787	176.720	176.652
.15779E+10	180.531	178.641	178.586	178.532
.18935E+10	180.837	179.303	179.258	179.214
.22090E+10	180.427	179.168	179.132	179.096
.25246E+10	179.303	178.260	178.230	178.200
.28402E+10	178.220	177.349	177.325	177.300
.31558E+10	177.181	176.451	176.430	176.409
.63115E+10	171.613	171.426	171.421	171.416
.94673E+10	166.951	166.865	166.862	166.860
.12623E+11	164.518	164.469	164.468	164.466
.15779E+11	162.962	162.932	162.931	162.930
.18935E+11	161.150	161.129	161.128	161.128
.22090E+11	158.981	158.966	158.966	158.965
.25246E+11	156.599	156.587	156.586	156.586
.28402E+11	154.296	154.285	154.285	154.284
.31558E+11	152.205	152.195	152.195	152.195

* Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35442.410 TIME= 23:59:44
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	1033 TEMP	t01i135	87.27	31.56	184.5 .1578E+10
3	NSOL	733 TEMP	t01o135	87.21	31.56	184.5 .1578E+10
4	NSOL	735 TEMP	h01i135	82.16	31.56	183.3 .1578E+10
5	NSOL	679 TEMP	c01i135	78.14	31.56	182.5 .1578E+10
6	NSOL	704 TEMP	h01o135	73.39	31.56	181.7 .1893E+10
7	NSOL	691 TEMP	s01i135	67.94	31.56	180.8 .1893E+10
8	NSOL	1018 TEMP	s01o135	67.88	31.56	180.8 .1893E+10
9	NSOL	1292 TEMP	i01i135	48.60	.1000E-05	179.3 .1893E+10
10	NSOL	1307 TEMP	i01o135	48.38	.1000E-05	179.3 .1893E+10
11	NSOL	2078 TEMP	o01o135	48.14	.1000E-05	179.2 .1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:45 NOV 05, 1995 CP= 35444.390
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	87.2710	87.2082	82.1575	78.1415	73.3945	67.9436
.20000E-05	87.2711	87.2083	82.1574	78.1415	73.3948	67.9443
31.558	87.2698	87.2070	82.1562	78.1403	73.3938	67.9433
.31558E+07	99.8106	99.7480	94.8109	91.0109	86.5501	81.4018
.63116E+07	105.299	105.237	100.395	96.7209	92.4174	87.4375
.94673E+07	109.045	108.983	104.222	100.644	96.4616	91.6117
.12623E+08	111.931	111.870	107.183	103.686	99.6050	94.8669
.15779E+08	114.296	114.236	109.616	106.190	102.197	97.5561
.18935E+08	116.305	116.245	111.689	108.327	104.411	99.8576
.22090E+08	118.064	118.005	113.507	110.202	106.357	101.882
.25246E+08	119.618	119.560	115.116	111.864	108.082	103.679
.28402E+08	121.024	120.966	116.572	113.367	109.644	105.305
.31558E+08	122.315	122.258	117.910	114.750	111.081	106.803

.63115E+08	131.691	131.637	127.631	124.791	121.508	117.660
.94673E+08	138.055	138.004	134.204	131.556	128.503	124.911
.12623E+09	143.301	143.251	139.599	137.090	134.202	130.795
.15779E+09	147.955	147.907	144.375	141.978	139.224	135.966
.18935E+09	151.902	151.854	148.426	146.124	143.483	140.350
.22090E+09	155.156	155.109	151.773	149.552	147.010	143.986
.25246E+09	158.046	158.000	154.750	152.604	150.148	147.224
.28402E+09	160.157	160.112	156.944	154.863	152.484	149.647
.31558E+09	161.869	161.825	158.733	156.713	154.404	151.647
.63115E+09	173.948	173.913	171.474	169.933	168.177	166.062
.94673E+09	181.600	181.572	179.633	178.433	177.068	175.414
.12623E+10	184.094	184.071	182.514	181.557	180.470	179.150
.15779E+10	184.530	184.512	183.252	182.478	181.601	180.535
.18935E+10	184.092	184.077	183.052	182.422	181.708	180.840
.22090E+10	183.095	183.082	182.243	181.726	181.140	180.429
.25246E+10	181.506	181.496	180.804	180.377	179.892	179.305
.28402E+10	180.050	180.041	179.468	179.113	178.710	178.222
.31558E+10	178.711	178.704	178.226	177.929	177.591	177.183
.63115E+10	171.994	171.992	171.874	171.800	171.715	171.613
.94673E+10	167.122	167.121	167.069	167.035	166.997	166.951
.12623E+11	164.614	164.614	164.584	164.565	164.544	164.518
.15779E+11	163.021	163.021	163.003	162.991	162.978	162.962
.18935E+11	161.190	161.189	161.177	161.169	161.160	161.150
.22090E+11	159.011	159.011	159.002	158.996	158.989	158.981
.25246E+11	156.623	156.623	156.616	156.611	156.606	156.599
.28402E+11	154.317	154.317	154.311	154.307	154.302	154.296
.31558E+11	152.225	152.225	152.219	152.215	152.211	152.206

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:46 NOV 05, 1995 CP= 35444.400
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	67.8839	48.6023	48.3756	48.1395
.20000E-05	67.8846	48.6070	48.3802	48.1441
31.558	67.8836	48.6065	48.3797	48.1436
.31558E+07	81.3458	64.9508	64.7284	64.4979
.63116E+07	87.3834	72.2247	72.0061	71.7798
.94673E+07	91.5591	77.2340	77.0186	76.7960
.12623E+08	94.8156	81.1340	80.9215	80.7023
.15779E+08	97.5060	84.3508	84.1411	83.9249
.18935E+08	99.8084	87.1001	86.8929	86.6795
.22090E+08	101.834	89.5138	89.3090	89.0982
.25246E+08	103.631	91.6511	91.4485	91.2401
.28402E+08	105.258	93.5806	93.3802	93.1741
.31558E+08	106.756	95.3543	95.1562	94.9521
.63115E+08	117.618	108.042	107.861	107.674
.94673E+08	124.873	116.314	116.142	115.967
.12623E+09	130.759	122.908	122.744	122.577
.15779E+09	135.931	128.637	128.478	128.318
.18935E+09	140.317	133.469	133.316	133.161
.22090E+09	143.954	137.472	137.323	137.174
.25246E+09	147.193	141.029	140.885	140.740
.28402E+09	149.617	143.715	143.575	143.434
.31558E+09	151.618	145.944	145.808	145.671
.63115E+09	166.039	162.002	161.896	161.789
.94673E+09	175.397	172.385	172.300	172.216
.12623E+10	179.136	176.776	176.709	176.642
.15779E+10	180.523	178.632	178.577	178.523
.18935E+10	180.831	179.296	179.251	179.207
.22090E+10	180.422	179.162	179.126	179.090
.25246E+10	179.299	178.255	178.225	178.195

.28402E+10	178.217	177.345	177.321	177.296
.31558E+10	177.179	176.447	176.427	176.406
.63115E+10	171.612	171.425	171.420	171.415
.94673E+10	166.950	166.864	166.862	166.860
.12623E+11	164.518	164.469	164.467	164.466
.15779E+11	162.962	162.931	162.931	162.930
.18935E+11	161.150	161.129	161.128	161.128
.22090E+11	158.981	158.966	158.966	158.965
.25246E+11	156.599	156.587	156.586	156.586
.28402E+11	154.296	154.285	154.285	154.284
.31558E+11	152.205	152.195	152.195	152.194

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 35444.610 TIME= 23:59:46
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	8470 TEMP	tt4i045	88.36	31.56	185.0	.1578E+10
3 NSOL	8270 TEMP	tt4o045	88.40	31.56	185.0	.1578E+10
4 NSOL	8272 TEMP	ht4i045	102.0	31.56	189.5	.1262E+10
5 NSOL	8234 TEMP	ct4i045	101.4	31.56	189.9	.1262E+10
6 NSOL	8251 TEMP	ht4o045	87.81	31.56	186.2	.1578E+10
7 NSOL	8242 TEMP	st4i045	60.99	.1000E-05	180.3	.1893E+10
8 NSOL	8460 TEMP	st4o045	60.89	.1000E-05	180.3	.1893E+10
9 NSOL	8556 TEMP	it4i045	43.88	.1000E-05	179.0	.1893E+10
10 NSOL	8566 TEMP	it4o045	43.70	.1000E-05	179.0	.1893E+10
11 NSOL	8691 TEMP	ot4o045	43.52	.1000E-05	178.9	.1893E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:48 NOV 05, 1995 CP= 35446.560
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
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.10000E-05	88.3633	88.4012	101.990	101.365	87.8083	60.9867
.20000E-05	88.3627	88.4005	101.989	101.364	87.8083	60.9875
31.558	88.3616	88.3995	101.988	101.363	87.8074	60.9868
.31558E+07	101.153	101.191	114.579	114.199	101.257	75.5156
.63116E+07	106.713	106.750	119.957	119.687	107.106	82.0150
.94673E+07	110.487	110.524	123.563	123.367	111.070	86.5001
.12623E+08	113.387	113.423	126.305	126.165	114.113	89.9951
.15779E+08	115.758	115.793	128.527	128.433	116.596	92.8807
.18935E+08	117.768	117.803	130.397	130.341	118.699	95.3485
.22090E+08	119.525	119.559	132.023	131.999	120.535	97.5174
.25246E+08	121.075	121.110	133.452	133.456	122.153	99.4397
.28402E+08	122.476	122.510	134.740	134.769	123.613	101.178
.31558E+08	123.761	123.795	135.917	135.969	124.951	102.777
.63115E+08	133.084	133.116	144.455	144.655	134.618	114.304
.94673E+08	139.401	139.431	150.297	150.583	141.130	121.924
.12623E+09	144.607	144.636	155.170	155.520	146.484	128.065
.15779E+09	149.225	149.254	159.522	159.925	151.225	133.437
.18935E+09	153.137	153.165	163.199	163.643	155.229	137.983
.22090E+09	156.358	156.386	166.200	166.673	158.513	141.750
.25246E+09	159.218	159.245	168.851	169.348	161.419	145.103
.28402E+09	161.300	161.326	170.727	171.237	163.521	147.620
.31558E+09	162.985	163.010	172.210	172.729	165.211	149.700
.63115E+09	174.828	174.849	182.275	182.802	176.923	164.693
.94673E+09	182.296	182.313	188.314	188.794	184.138	174.401
.12623E+10	184.653	184.667	189.521	189.925	186.188	178.358
.15779E+10	184.984	184.995	188.934	189.266	186.242	179.901
.18935E+10	184.463	184.472	187.680	187.950	185.488	180.326
.22090E+10	183.400	183.407	186.031	186.251	184.233	180.007
.25246E+10	181.759	181.765	183.922	184.100	182.436	178.955
.28402E+10	180.261	180.266	182.051	182.195	180.815	177.929
.31558E+10	178.888	178.892	180.379	180.497	179.345	176.937
.63115E+10	172.038	172.039	172.402	172.429	172.144	171.550
.94673E+10	167.142	167.143	167.304	167.315	167.187	166.922
.12623E+11	164.625	164.626	164.716	164.722	164.650	164.501
.15779E+11	163.028	163.029	163.084	163.087	163.043	162.952
.18935E+11	161.194	161.194	161.231	161.234	161.204	161.143
.22090E+11	159.014	159.015	159.042	159.043	159.021	158.976
.25246E+11	156.626	156.626	156.648	156.649	156.632	156.595
.28402E+11	154.319	154.320	154.338	154.339	154.324	154.292
.31558E+11	152.227	152.227	152.245	152.245	152.231	152.202

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:48 NOV 05, 1995 CP= 35446.570
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP st4o045	8556 TEMP it4i045	8566 TEMP it4o045	8691 TEMP ot4o045
.10000E-05	60.8946	43.8759	43.7019	43.5158
.20000E-05	60.8954	43.8793	43.7053	43.5192
31.558	60.8947	43.8789	43.7049	43.5188
.31558E+07	75.4282	61.0853	60.9157	60.7334
.63116E+07	81.9302	68.7109	68.5446	68.3653
.94673E+07	86.4172	73.9516	73.7880	73.6115
.12623E+08	89.9140	78.0273	77.8661	77.6920
.15779E+08	92.8011	81.3857	81.2268	81.0550
.18935E+08	95.2703	84.2536	84.0968	83.9271
.22090E+08	97.4404	86.7692	86.6144	86.4467
.25246E+08	99.3638	88.9951	88.8420	88.6761
.28402E+08	101.103	91.0026	90.8511	90.6870
.31558E+08	102.703	92.8470	92.6971	92.5346
.63115E+08	114.237	105.986	105.849	105.700
.94673E+08	121.861	114.496	114.367	114.226
.12623E+09	128.005	121.253	121.130	120.996

.15779E+09	133.380	127.108	126.989	126.860
.18935E+09	137.927	132.040	131.926	131.801
.22090E+09	141.697	136.125	136.014	135.894
.25246E+09	145.051	139.753	139.645	139.529
.28402E+09	147.569	142.496	142.391	142.278
.31558E+09	149.651	144.775	144.673	144.562
.63115E+09	164.655	161.184	161.104	161.018
.94673E+09	174.371	171.780	171.717	171.649
.12623E+10	178.334	176.305	176.255	176.200
.15779E+10	179.881	178.256	178.215	178.171
.18935E+10	180.310	178.991	178.958	178.923
.22090E+10	179.994	178.913	178.886	178.857
.25246E+10	178.944	178.048	178.026	178.002
.28402E+10	177.920	177.173	177.155	177.135
.31558E+10	176.930	176.303	176.288	176.271
.63115E+10	171.548	171.389	171.385	171.381
.94673E+10	166.921	166.847	166.846	166.844
.12623E+11	164.501	164.459	164.458	164.457
.15779E+11	162.951	162.925	162.925	162.924
.18935E+11	161.142	161.125	161.124	161.124
.22090E+11	158.976	158.963	158.963	158.962
.25246E+11	156.595	156.584	156.584	156.584
.28402E+11	154.292	154.283	154.282	154.282
.31558E+11	152.202	152.193	152.193	152.193

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35446.800 TIME= 23:59:48
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	1206 TEMP	t01i135	88.36	31.56	185.0 .1578E+10
3	NSOL	885 TEMP	t01o135	88.39	31.56	185.0 .1578E+10
4	NSOL	887 TEMP	h01i135	102.0	31.56	189.5 .1262E+10
5	NSOL	849 TEMP	c01i135	101.3	31.56	189.9 .1262E+10
6	NSOL	866 TEMP	h01o135	87.77	31.56	186.2 .1578E+10
7	NSOL	857 TEMP	s01i135	60.94	.1000E-05	180.3 .1893E+10
8	NSOL	1196 TEMP	s01o135	60.85	.1000E-05	180.3 .1893E+10
9	NSOL	1394 TEMP	i01i135	43.81	.1000E-05	179.0 .1893E+10
10	NSOL	1404 TEMP	i01o135	43.63	.1000E-05	179.0 .1893E+10
11	NSOL	2146 TEMP	o01o135	43.45	.1000E-05	178.9 .1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:50 NOV 05, 1995 CP= 35448.740
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	88.3584	88.3962	101.974	101.338	87.7725	60.9416
.20000E-05	88.3577	88.3955	101.973	101.338	87.7725	60.9423
31.558	88.3567	88.3945	101.972	101.337	87.7717	60.9417
.31558E+07	101.149	101.187	114.564	114.175	101.224	75.4737
.63116E+07	106.709	106.746	119.943	119.664	107.074	81.9750
.94673E+07	110.483	110.520	123.550	123.345	111.039	86.4614
.12623E+08	113.384	113.420	126.292	126.143	114.083	89.9574
.15779E+08	115.754	115.790	128.514	128.411	116.567	92.8440
.18935E+08	117.764	117.800	130.385	130.320	118.671	95.3126
.22090E+08	119.521	119.556	132.011	131.979	120.507	97.4822
.25246E+08	121.072	121.107	133.440	133.436	122.126	99.4052
.28402E+08	122.473	122.507	134.728	134.749	123.586	101.144
.31558E+08	123.759	123.793	135.906	135.949	124.925	102.744
.63115E+08	133.082	133.113	144.444	144.637	134.594	114.274
.94673E+08	139.398	139.429	150.288	150.567	141.109	121.897
.12623E+09	144.605	144.634	155.161	155.505	146.464	128.039
.15779E+09	149.223	149.252	159.514	159.911	151.206	133.413
.18935E+09	153.136	153.164	163.191	163.629	155.211	137.960
.22090E+09	156.357	156.384	166.192	166.661	158.495	141.729
.25246E+09	159.216	159.243	168.843	169.336	161.402	145.082
.28402E+09	161.299	161.325	170.720	171.226	163.505	147.600
.31558E+09	162.983	163.009	172.204	172.718	165.196	149.681
.63115E+09	174.827	174.848	182.270	182.794	176.911	164.679
.94673E+09	182.296	182.312	188.310	188.788	184.129	174.390
.12623E+10	184.653	184.666	189.518	189.920	186.181	178.350
.15779E+10	184.984	184.995	188.931	189.262	186.236	179.894
.18935E+10	184.463	184.472	187.678	187.946	185.483	180.320
.22090E+10	183.400	183.407	186.030	186.248	184.230	180.002
.25246E+10	181.759	181.765	183.921	184.097	182.433	178.951
.28402E+10	180.260	180.265	182.050	182.193	180.813	177.926
.31558E+10	178.888	178.892	180.378	180.496	179.343	176.934
.63115E+10	172.038	172.039	172.402	172.429	172.143	171.549
.94673E+10	167.142	167.143	167.304	167.315	167.187	166.921
.12623E+11	164.625	164.626	164.716	164.721	164.650	164.501
.15779E+11	163.028	163.029	163.084	163.087	163.043	162.952
.18935E+11	161.194	161.194	161.231	161.234	161.204	161.143
.22090E+11	159.014	159.015	159.042	159.043	159.021	158.976
.25246E+11	156.626	156.626	156.648	156.649	156.631	156.595
.28402E+11	154.319	154.320	154.338	154.339	154.324	154.292
.31558E+11	152.227	152.227	152.244	152.245	152.231	152.202

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:50 NOV 05, 1995 CP= 35448.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	60.8494	43.8086	43.6342	43.4466
.20000E-05	60.8502	43.8120	43.6376	43.4500
31.558	60.8495	43.8116	43.6372	43.4497

.31558E+07	75.3863	61.0255	60.8555	60.6717
.63116E+07	81.8901	68.6545	68.4878	68.3072
.94673E+07	86.3784	73.8977	73.7337	73.5558
.12623E+08	89.8762	77.9753	77.8138	77.6383
.15779E+08	92.7643	81.3353	81.1761	81.0029
.18935E+08	95.2343	84.2046	84.0475	83.8765
.22090E+08	97.4052	86.7215	86.5663	86.3973
.25246E+08	99.3293	88.9484	88.7950	88.6278
.28402E+08	101.069	90.9570	90.8051	90.6397
.31558E+08	102.670	92.8023	92.6520	92.4882
.63115E+08	114.207	105.947	105.810	105.660
.94673E+08	121.834	114.461	114.331	114.190
.12623E+09	127.980	121.221	121.097	120.962
.15779E+09	133.356	127.077	126.958	126.829
.18935E+09	137.905	132.011	131.896	131.771
.22090E+09	141.675	136.097	135.986	135.865
.25246E+09	145.030	139.727	139.619	139.501
.28402E+09	147.549	142.471	142.366	142.251
.31558E+09	149.632	144.750	144.648	144.537
.63115E+09	164.640	161.166	161.086	161.000
.94673E+09	174.360	171.766	171.703	171.635
.12623E+10	178.325	176.294	176.244	176.189
.15779E+10	179.874	178.247	178.206	178.162
.18935E+10	180.304	178.984	178.951	178.915
.22090E+10	179.989	178.907	178.880	178.851
.25246E+10	178.940	178.044	178.021	177.997
.28402E+10	177.917	177.169	177.151	177.131
.31558E+10	176.927	176.300	176.284	176.267
.63115E+10	171.547	171.388	171.384	171.380
.94673E+10	166.920	166.847	166.845	166.843
.12623E+11	164.501	164.459	164.458	164.457
.15779E+11	162.951	162.925	162.925	162.924
.18935E+11	161.142	161.125	161.124	161.124
.22090E+11	158.976	158.963	158.963	158.962
.25246E+11	156.595	156.584	156.584	156.584
.28402E+11	154.292	154.283	154.282	154.282
.31558E+11	152.202	152.193	152.193	152.192

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 35448.960 TIME= 23:59:50
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135

VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135

VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135

VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135

VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135

VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135

VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135

VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135

VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135

VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135

VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135

VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135

VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135

VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2751 TEMP	ot1o135	31.37	.1000E-05	178.0	.2209E+10
3	NSOL	2714 TEMP	ot1i135	31.40	.1000E-05	178.0	.2209E+10
4	NSOL	1968 TEMP	it1o135	41.38	.1000E-05	178.9	.1893E+10
5	NSOL	1931 TEMP	it1i135	41.39	.1000E-05	178.9	.1893E+10
6	NSOL	1088 TEMP	st1o135	42.98	.1000E-05	178.9	.1893E+10
7	NSOL	1082 TEMP	st1i135	43.00	.1000E-05	178.9	.1893E+10
8	NSOL	849 TEMP	ht1i135	101.3	31.56	189.9	.1262E+10
9	NSOL	853 TEMP	gt1i135	107.6	31.56	191.1	.1262E+10
10	NSOL	1 TEMP	c01i135	113.9	31.56	192.2	.1262E+10
11	NSOL	683 TEMP	gb1i135	115.1	31.56	192.3	.1262E+10
12	NSOL	684 TEMP	gb1h135	113.5	31.56	192.4	.1262E+10
13	NSOL	679 TEMP	sb1i135	78.14	31.56	182.5	.1578E+10
14	NSOL	962 TEMP	sb1o135	77.90	31.56	182.4	.1578E+10
15	NSOL	1640 TEMP	ib1i135	52.47	.1000E-05	180.0	.1893E+10
16	NSOL	1677 TEMP	ib1o135	51.93	.1000E-05	179.9	.1893E+10
17	NSOL	2751 TEMP	ob1o135	31.37	.1000E-05	178.0	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:53 NOV 05, 1995 CP= 35452.110
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	31.3706	31.4026	41.3822	41.3949	42.9815	42.9990
.20000E-05	31.3720	31.4040	41.3855	41.3982	42.9845	43.0020
31.558	31.3719	31.4039	41.3852	41.3979	42.9841	43.0017
.31558E+07	50.1938	50.2217	59.1350	59.1450	60.1579	60.1734
.63116E+07	58.5438	58.5698	66.9801	66.9890	67.7981	67.8126
.94673E+07	64.2854	64.3101	72.3642	72.3722	73.0580	73.0719
.12623E+08	68.7544	68.7782	76.5474	76.5549	77.1534	77.1668
.15779E+08	72.4383	72.4612	79.9917	79.9987	80.5308	80.5438
.18935E+08	75.5849	75.6070	82.9311	82.9377	83.4169	83.4295
.22090E+08	78.3442	78.3657	85.5079	85.5141	85.9497	85.9619
.25246E+08	80.7847	80.8057	87.7864	87.7923	88.1914	88.2035
.28402E+08	82.9837	83.0041	89.8403	89.8459	90.2140	90.2257
.31558E+08	85.0028	85.0229	91.7262	91.7317	92.0727	92.0842
.63115E+08	99.3068	99.3239	105.123	105.127	105.314	105.324
.94673E+08	108.484	108.500	113.773	113.776	113.891	113.900
.12623E+09	115.706	115.720	120.626	120.629	120.698	120.706
.15779E+09	121.924	121.938	126.553	126.555	126.592	126.600
.18935E+09	127.152	127.164	131.542	131.543	131.557	131.565
.22090E+09	131.481	131.492	135.670	135.672	135.669	135.676
.25246E+09	135.322	135.334	139.336	139.337	139.321	139.328
.28402E+09	138.243	138.254	142.107	142.108	142.083	142.090
.31558E+09	140.678	140.688	144.409	144.410	144.379	144.385
.63115E+09	158.233	158.240	160.966	160.966	160.907	160.911
.94673E+09	169.561	169.566	171.637	171.638	171.576	171.580
.12623E+10	174.564	174.568	176.200	176.200	176.147	176.149
.15779E+10	176.862	176.865	178.173	178.173	178.129	178.131

.18935E+10	177.862	177.865	178.924	178.924	178.888	178.890
.22090E+10	177.989	177.991	178.858	178.858	178.828	178.830
.25246E+10	177.284	177.286	178.001	178.001	177.977	177.979
.28402E+10	176.538	176.539	177.133	177.133	177.114	177.115
.31558E+10	175.770	175.772	176.269	176.269	176.253	176.254
.63115E+10	171.254	171.255	171.379	171.379	171.375	171.376
.94673E+10	166.786	166.786	166.843	166.843	166.841	166.841
.12623E+11	164.424	164.424	164.456	164.456	164.455	164.455
.15779E+11	162.904	162.904	162.924	162.924	162.923	162.923
.18935E+11	161.110	161.110	161.124	161.124	161.123	161.123
.22090E+11	158.952	158.952	158.962	158.962	158.962	158.962
.25246E+11	156.575	156.575	156.583	156.583	156.583	156.583
.28402E+11	154.275	154.275	154.282	154.282	154.282	154.282
.31558E+11	152.186	152.186	152.192	152.192	152.192	152.192

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=WP 9000/7XX 23:59:53 NOV 05, 1995 CP= 35452.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	101.338	107.626	113.899	115.102	113.484	78.1415
.20000E-05	101.338	107.624	113.897	115.100	113.482	78.1415
31.558	101.337	107.623	113.896	115.098	113.481	78.1403
.31558E+07	114.175	119.856	125.508	126.490	125.190	91.0109
.63116E+07	119.664	125.055	130.414	131.303	130.145	96.7209
.94673E+07	123.345	128.530	133.681	134.509	133.447	100.644
.12623E+08	126.143	131.163	136.148	136.929	135.941	103.686
.15779E+08	128.411	133.292	138.137	138.881	137.952	106.190
.18935E+08	130.320	135.079	139.803	140.516	139.638	108.327
.22090E+08	131.979	136.631	141.248	141.933	141.099	110.202
.25246E+08	133.436	137.993	142.514	143.176	142.381	111.864
.28402E+08	134.749	139.220	143.656	144.296	143.535	113.367
.31558E+08	135.949	140.341	144.698	145.320	144.590	114.750
.63115E+08	144.637	148.485	152.299	152.796	152.277	124.791
.94673E+08	150.567	154.098	157.596	158.025	157.630	131.556
.12623E+09	155.505	158.811	162.084	162.463	162.160	137.090
.15779E+09	159.911	163.036	166.128	166.470	166.241	141.978
.18935E+09	163.629	166.605	169.549	169.860	169.690	146.124
.22090E+09	166.661	169.510	172.329	172.616	172.492	149.552
.25246E+09	169.336	172.073	174.781	175.047	174.962	152.604
.28402E+09	171.226	173.868	176.481	176.732	176.673	154.863
.31558E+09	172.718	175.275	177.803	178.041	178.004	156.713
.63115E+09	182.794	184.701	186.587	186.737	186.813	169.933
.94673E+09	188.788	190.254	191.704	191.805	191.919	178.433
.12623E+10	189.920	191.085	192.237	192.314	192.419	181.557
.15779E+10	189.262	190.202	191.134	191.195	191.281	182.478
.18935E+10	187.946	188.713	189.473	189.523	189.591	182.422
.22090E+10	186.248	186.878	187.503	187.544	187.597	181.726
.25246E+10	184.097	184.620	185.138	185.173	185.213	180.377
.28402E+10	182.193	182.629	183.061	183.091	183.121	179.113
.31558E+10	180.496	180.861	181.224	181.250	181.272	177.929
.63115E+10	172.429	172.521	172.614	172.621	172.623	171.800
.94673E+10	167.315	167.357	167.399	167.403	167.403	167.035
.12623E+11	164.721	164.745	164.769	164.771	164.771	164.565
.15779E+11	163.087	163.102	163.117	163.118	163.118	162.991
.18935E+11	161.234	161.244	161.254	161.254	161.254	161.169
.22090E+11	159.043	159.051	159.058	159.059	159.058	158.996
.25246E+11	156.649	156.655	156.661	156.662	156.662	156.611
.28402E+11	154.339	154.345	154.350	154.351	154.350	154.307
.31558E+11	152.245	152.250	152.255	152.256	152.256	152.215

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:53 NOV 05, 1995 CP= 35452.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	77.9021	52.4691	51.9335	31.3706
.20000E-05	77.9022	52.4747	51.9390	31.3720
.31558E+07	77.9010	52.4741	51.9384	31.3719
.63116E+07	90.7779	68.7185	68.1909	50.1938
.94673E+07	96.4928	75.9151	75.3953	58.5438
.12623E+08	100.420	80.8578	80.3450	64.2854
.15779E+08	103.466	84.6974	84.1913	68.7544
.18935E+08	105.974	87.8591	87.3592	72.4383
.22090E+08	108.113	90.5576	90.0635	75.5849
.25246E+08	109.991	92.9243	92.4357	78.3442
.28402E+08	111.655	95.0177	94.5349	80.7847
.31558E+08	113.161	96.9063	96.4290	82.9837
.63115E+08	114.546	98.6413	98.1693	85.0028
.94673E+08	124.604	111.029	110.595	99.3068
.12623E+09	131.379	119.117	118.705	108.484
.15779E+09	136.919	125.580	125.185	115.706
.18935E+09	141.813	131.202	130.821	121.924
.22090E+09	145.963	135.944	135.574	127.152
.25246E+09	149.397	139.867	139.508	131.481
.28402E+09	152.452	143.352	143.003	135.322
.31558E+09	154.715	145.971	145.631	138.243
.63115E+09	156.568	148.140	147.808	140.678
.94673E+09	169.817	163.697	163.437	158.233
.12623E+10	178.340	173.714	173.507	169.561
.15779E+10	181.483	177.837	177.671	174.564
.18935E+10	182.418	179.488	179.353	176.862
.22090E+10	182.373	179.991	179.881	177.862
.25246E+10	181.686	179.731	179.641	177.989
.28402E+10	180.344	178.723	178.649	177.284
.31558E+10	179.086	177.734	177.673	176.538
.63115E+10	177.906	176.771	176.720	175.770
.94673E+10	171.794	171.505	171.493	171.254
.12623E+11	167.032	166.900	166.894	166.786
.15779E+11	164.564	164.489	164.486	164.424
.18935E+11	162.991	162.944	162.942	162.904
.22090E+11	161.169	161.137	161.136	161.110
.25246E+11	158.996	158.972	158.971	158.952
.28402E+11	156.611	156.592	156.591	156.575
.31558E+11	154.306	154.289	154.288	154.275
	152.215	152.199	152.198	152.186

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 35452.350 TIME= 23:59:54
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045
 VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045
 VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045
 VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045
 VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9855 TEMP	ot4o045	31.39	.1000E-05	178.0	.2209E+10
3 NSOL	9818 TEMP	ot4i045	31.42	.1000E-05	178.0	.2209E+10
4 NSOL	9546 TEMP	it4o045	41.40	.1000E-05	178.9	.1893E+10
5 NSOL	9509 TEMP	it4i045	41.41	.1000E-05	178.9	.1893E+10
6 NSOL	8352 TEMP	st4o045	43.00	.1000E-05	178.9	.1893E+10
7 NSOL	8346 TEMP	st4i045	43.02	.1000E-05	178.9	.1893E+10
8 NSOL	8234 TEMP	ht4i045	101.4	31.56	189.9	.1262E+10
9 NSOL	8238 TEMP	gt4i045	107.7	31.56	191.1	.1262E+10
10 NSOL	7642 TEMP	c04i045	113.9	31.56	192.2	.1262E+10
11 NSOL	7654 TEMP	gb4i045	115.1	31.56	192.3	.1262E+10
12 NSOL	7655 TEMP	gb4h045	113.5	31.56	192.4	.1262E+10
13 NSOL	7650 TEMP	sb4i045	78.17	31.56	182.5	.1578E+10
14 NSOL	7871 TEMP	sb4o045	77.93	31.56	182.4	.1578E+10
15 NSOL	8934 TEMP	ib4i045	52.51	.1000E-05	180.0	.1893E+10
16 NSOL	8971 TEMP	ib4o045	51.97	.1000E-05	179.9	.1893E+10
17 NSOL	9855 TEMP	ob4o045	31.39	.1000E-05	178.0	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:57 NOV 05, 1995 CP= 35455.520
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	31.3855	31.4172	41.3973	41.4101	42.9980	43.0156
.20000E-05	31.3869	31.4186	41.4006	41.4133	43.0011	43.0186
31.558	31.3868	31.4184	41.4003	41.4130	43.0007	43.0182
.31558E+07	50.2059	50.2335	59.1479	59.1579	60.1720	60.1876
.63116E+07	58.5547	58.5805	66.9920	67.0009	67.8112	67.8257
.94673E+07	64.2956	64.3201	72.3754	72.3835	73.0704	73.0843
.12623E+08	68.7640	68.7875	76.5582	76.5656	77.1652	77.1787
.15779E+08	72.4474	72.4701	80.0021	80.0090	80.5422	80.5552
.18935E+08	75.5936	75.6156	82.9411	82.9477	83.4279	83.4405
.22090E+08	78.3526	78.3740	85.5175	85.5238	85.9603	85.9726

.25246E+08	80.7928	80.8136	87.7958	87.8018	88.2018	88.2138
.28402E+08	82.9915	83.0118	89.8494	89.8551	90.2240	90.2358
.31558E+08	85.0105	85.0303	91.7352	91.7406	92.0825	92.0940
.63115E+08	99.3130	99.3299	105.131	105.135	105.323	105.333
.94673E+08	108.490	108.505	113.780	113.783	113.898	113.908
.12623E+09	115.711	115.725	120.632	120.635	120.705	120.713
.15779E+09	121.929	121.942	126.559	126.561	126.598	126.606
.18935E+09	127.156	127.168	131.547	131.549	131.563	131.571
.22090E+09	131.484	131.496	135.675	135.677	135.674	135.682
.25246E+09	135.326	135.337	139.340	139.342	139.326	139.333
.28402E+09	138.247	138.258	142.111	142.113	142.088	142.095
.31558E+09	140.681	140.691	144.413	144.415	144.384	144.390
.63115E+09	158.235	158.242	160.969	160.970	160.910	160.915
.94673E+09	169.562	169.568	171.640	171.640	171.579	171.582
.12623E+10	174.565	174.570	176.202	176.202	176.149	176.151
.15779E+10	176.863	176.866	178.175	178.175	178.130	178.133
.18935E+10	177.863	177.866	178.926	178.926	178.889	178.891
.22090E+10	177.990	177.992	178.859	178.859	178.829	178.831
.25246E+10	177.285	177.287	178.002	178.002	177.978	177.979
.28402E+10	176.538	176.540	177.134	177.134	177.115	177.116
.31558E+10	175.771	175.772	176.269	176.269	176.253	176.254
.63115E+10	171.254	171.255	171.379	171.379	171.376	171.376
.94673E+10	166.786	166.786	166.843	166.843	166.841	166.841
.12623E+11	164.424	164.424	164.456	164.456	164.455	164.456
.15779E+11	162.904	162.904	162.924	162.924	162.923	162.923
.18935E+11	161.110	161.110	161.124	161.124	161.123	161.123
.22090E+11	158.952	158.952	158.962	158.962	158.962	158.962
.25246E+11	156.575	156.575	156.583	156.583	156.583	156.583
.28402E+11	154.275	154.275	154.282	154.282	154.282	154.282
.31558E+11	152.186	152.186	152.192	152.192	152.192	152.192

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:57 NOV 05, 1995 CP= 35455.530
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht41045	8238 TEMP gt41045	7642 TEMP c041045	7654 TEMP gb41045	7655 TEMP gb4h045	7650 TEMP sb41045
.10000E-05	101.365	107.653	113.927	115.130	113.511	78.1714
.20000E-05	101.364	107.651	113.925	115.128	113.510	78.1714
31.558	101.363	107.650	113.924	115.126	113.508	78.1703
.31558E+07	114.199	119.881	125.534	126.516	125.216	91.0389
.63116E+07	119.687	125.080	130.439	131.329	130.170	96.7478
.94673E+07	123.367	128.553	133.705	134.534	133.471	100.670
.12623E+08	126.165	131.186	136.172	136.953	135.964	103.712
.15779E+08	128.433	133.314	138.160	138.904	137.975	106.215
.18935E+08	130.341	135.101	139.826	140.539	139.660	108.351
.22090E+08	131.999	136.652	141.270	141.956	141.122	110.226
.25246E+08	133.456	138.014	142.536	143.198	142.402	111.887
.28402E+08	134.769	139.241	143.677	144.318	143.557	113.390
.31558E+08	135.969	140.362	144.719	145.341	144.611	114.773
.63115E+08	144.655	148.503	152.318	152.815	152.295	124.811
.94673E+08	150.583	154.115	157.614	158.042	157.647	131.575
.12623E+09	155.520	158.826	162.100	162.480	162.176	137.107
.15779E+09	159.925	163.050	166.144	166.485	166.256	141.994
.18935E+09	163.643	166.619	169.564	169.875	169.704	146.139
.22090E+09	166.673	169.524	172.343	172.631	172.506	149.568
.25246E+09	169.348	172.086	174.794	175.061	174.975	152.618
.28402E+09	171.237	173.880	176.494	176.745	176.686	154.877
.31558E+09	172.729	175.287	177.816	178.054	178.016	156.726
.63115E+09	182.802	184.710	186.597	186.746	186.822	169.943
.94673E+09	188.794	190.261	191.711	191.813	191.926	178.440
.12623E+10	189.925	191.090	192.243	192.320	192.424	181.563

.15779E+10	189.266	190.207	191.139	191.200	191.286	182.483
.18935E+10	187.950	188.717	189.477	189.527	189.595	182.426
.22090E+10	186.251	186.881	187.506	187.548	187.600	181.730
.25246E+10	184.100	184.622	185.141	185.176	185.215	180.380
.28402E+10	182.195	182.631	183.063	183.094	183.123	179.115
.31558E+10	180.497	180.863	181.226	181.252	181.274	177.931
.63115E+10	172.429	172.522	172.614	172.621	172.624	171.800
.94673E+10	167.315	167.357	167.399	167.403	167.403	167.035
.12623E+11	164.722	164.746	164.769	164.771	164.771	164.565
.15779E+11	163.087	163.102	163.117	163.118	163.118	162.991
.18935E+11	161.234	161.244	161.254	161.254	161.254	161.169
.22090E+11	159.043	159.051	159.058	159.059	159.059	158.996
.25246E+11	156.649	156.655	156.661	156.662	156.662	156.611
.28402E+11	154.339	154.345	154.350	154.351	154.350	154.307
.31558E+11	152.245	152.250	152.255	152.256	152.256	152.215

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:59:57 NOV 05, 1995 CP= 35455.550
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP sb4o045	8934 TEMP 1b4i045	8971 TEMP 1b4o045	9855 TEMP ob4o045
.10000E-05	77.9321	52.5102	51.9747	31.3855
.20000E-05	77.9322	52.5158	51.9802	31.3869
31.558	77.9310	52.5152	51.9796	31.3868
.31558E+07	90.8059	68.7556	68.2282	50.2059
.63116E+07	96.5197	75.9503	75.4306	58.5547
.94673E+07	100.446	80.8916	80.3790	64.2956
.12623E+08	103.492	84.7301	84.2241	68.7640
.15779E+08	105.998	87.8909	87.3912	72.4474
.18935E+08	108.137	90.5885	90.0946	75.5936
.22090E+08	110.015	92.9546	92.4661	78.3526
.25246E+08	111.679	95.0473	94.5646	80.7928
.28402E+08	113.184	96.9353	96.4582	82.9915
.31558E+08	114.569	98.6698	98.1980	85.0105
.63115E+08	124.624	111.054	110.619	99.3130
.94673E+08	131.397	119.140	118.728	108.490
.12623E+09	136.937	125.601	125.206	115.711
.15779E+09	141.829	131.222	130.841	121.929
.18935E+09	145.979	135.963	135.593	127.156
.22090E+09	149.412	139.885	139.526	131.484
.25246E+09	152.466	143.369	143.020	135.326
.28402E+09	154.729	145.988	145.648	138.247
.31558E+09	156.582	148.156	147.825	140.681
.63115E+09	169.828	163.709	163.449	158.235
.94673E+09	178.348	173.723	173.517	169.562
.12623E+10	181.489	177.845	177.679	174.565
.15779E+10	182.423	179.494	179.359	176.863
.18935E+10	182.377	179.996	179.886	177.863
.22090E+10	181.690	179.735	179.645	177.990
.25246E+10	180.347	178.726	178.653	177.285
.28402E+10	179.088	177.736	177.675	176.538
.31558E+10	177.908	176.773	176.723	175.771
.63115E+10	171.794	171.506	171.493	171.254
.94673E+10	167.033	166.900	166.895	166.786
.12623E+11	164.564	164.489	164.486	164.424
.15779E+11	162.991	162.944	162.942	162.904
.18935E+11	161.169	161.137	161.136	161.110
.22090E+11	158.996	158.972	158.971	158.952
.25246E+11	156.611	156.592	156.591	156.575
.28402E+11	154.306	154.289	154.289	154.275
.31558E+11	152.215	152.199	152.198	152.186

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 35455.750 TIME= 23:59:57
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise

VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise

VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise

VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise

VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise

VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise

VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise

VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise

VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise

VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise

VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise

VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise

VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise

VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise

VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2763 TEMP	ot1oise	30.68	.1000E-05	177.9	.2209E+10
3	NSOL	2726 TEMP	ot1iise	30.70	.1000E-05	177.9	.2209E+10
4	NSOL	1980 TEMP	it1oise	46.03	.1000E-05	179.5	.1893E+10
5	NSOL	1943 TEMP	it1iise	46.07	.1000E-05	179.5	.1893E+10
6	NSOL	1281 TEMP	st1oise	51.67	.1000E-05	180.1	.1893E+10
7	NSOL	1247 TEMP	st1iise	52.08	.1000E-05	180.1	.1893E+10
8	NSOL	1206 TEMP	ht1iise	88.36	31.56	185.0	.1578E+10
9	NSOL	1207 TEMP	gt1iise	102.6	31.56	187.7	.1262E+10
10	NSOL	63 TEMP	c01iise	109.5	31.56	189.2	.1262E+10
11	NSOL	1034 TEMP	gb1iise	110.5	31.56	189.3	.1262E+10
12	NSOL	1035 TEMP	gb1hise	103.7	31.56	187.7	.1262E+10
13	NSOL	1033 TEMP	sb1iise	87.27	31.56	184.5	.1578E+10
14	NSOL	1071 TEMP	sb1oise	86.71	31.56	184.4	.1578E+10
15	NSOL	1652 TEMP	ib1iise	55.15	.1000E-05	180.5	.1893E+10
16	NSOL	1689 TEMP	ib1oise	54.55	.1000E-05	180.4	.1893E+10
17	NSOL	2763 TEMP	ob1oise	30.68	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:00 NOV 06, 1995 CP= 35458.890
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	30.6803	30.7037	46.0323	46.0718	51.6677	52.0795
.20000E-05	30.6815	30.7049	46.0364	46.0759	51.6716	52.0834
31.558	30.6814	30.7049	46.0360	46.0755	51.6710	52.0829
.31558E+07	49.6059	49.6258	63.4086	63.4454	68.1442	68.5397
.63116E+07	58.0011	58.0194	71.0658	71.1011	75.4408	75.8275
.94673E+07	63.7736	63.7908	76.3127	76.3469	80.4497	80.8291
.12623E+08	68.2667	68.2831	80.3834	80.4168	84.3381	84.7111
.15779E+08	71.9702	71.9859	83.7318	83.7643	87.5382	87.9055
.18935E+08	75.1336	75.1487	86.5869	86.6188	90.2688	90.6308
.22090E+08	77.9075	77.9221	89.0884	89.1197	92.6624	93.0196
.25246E+08	80.3607	80.3749	91.2995	91.3303	94.7792	95.1318
.28402E+08	82.5710	82.5848	93.2926	93.3228	96.6878	97.0361
.31558E+08	84.6005	84.6139	95.1213	95.1511	98.4403	98.7845
.63115E+08	98.9715	98.9826	108.117	108.143	110.944	111.260
.94673E+08	108.186	108.196	116.537	116.562	119.094	119.393
.12623E+09	115.434	115.443	123.228	123.252	125.599	125.886
.15779E+09	121.673	121.681	129.025	129.047	131.252	131.530
.18935E+09	126.916	126.924	133.906	133.927	136.016	136.286
.22090E+09	131.258	131.265	137.942	137.963	139.956	140.218
.25246E+09	135.111	135.118	141.525	141.545	143.454	143.709
.28402E+09	138.042	138.048	144.224	144.243	146.081	146.330
.31558E+09	140.484	140.490	146.462	146.480	148.255	148.498
.63115E+09	158.097	158.102	162.511	162.525	163.832	164.025
.94673E+09	169.461	169.464	172.832	172.843	173.840	173.995
.12623E+10	174.486	174.489	177.148	177.156	177.944	178.068
.15779E+10	176.800	176.802	178.935	178.942	179.575	179.675
.18935E+10	177.812	177.814	179.543	179.548	180.061	180.143
.22090E+10	177.948	177.949	179.363	179.368	179.788	179.855
.25246E+10	177.251	177.252	178.418	178.422	178.769	178.824
.28402E+10	176.509	176.510	177.479	177.482	177.771	177.816
.31558E+10	175.747	175.748	176.557	176.560	176.802	176.840
.63115E+10	171.248	171.248	171.451	171.451	171.512	171.521
.94673E+10	166.783	166.783	166.875	166.875	166.903	166.907
.12623E+11	164.423	164.423	164.474	164.475	164.490	164.492
.15779E+11	162.903	162.903	162.935	162.935	162.945	162.946
.18935E+11	161.110	161.110	161.131	161.131	161.138	161.139
.22090E+11	158.952	158.952	158.968	158.968	158.972	158.973
.25246E+11	156.575	156.575	156.588	156.588	156.592	156.592
.28402E+11	154.274	154.274	154.286	154.286	154.289	154.290
.31558E+11	152.185	152.185	152.196	152.196	152.199	152.200

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:00 NOV 06, 1995 CP= 35458.900
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gb1iise	1035 TEMP gb1hise	1033 TEMP sbl1iise
.10000E-05	88.3584	102.604	109.477	110.511	103.673	87.2710
.20000E-05	88.3577	102.600	109.473	110.506	103.670	87.2711
31.558	88.3567	102.599	109.472	110.505	103.668	87.2698
.31558E+07	101.149	114.243	120.554	121.410	114.981	99.8106
.63116E+07	106.709	119.240	125.277	126.061	119.849	105.299
.94673E+07	110.483	122.605	128.445	129.180	123.135	109.045
.12623E+08	113.384	125.173	130.852	131.551	125.645	111.931
.15779E+08	115.754	127.260	132.803	133.472	127.688	114.296
.18935E+08	117.764	129.022	134.446	135.090	129.413	116.305

.22090E+08	119.521	130.558	135.876	136.498	130.919	118.064
.25246E+08	121.072	131.910	137.133	137.737	132.245	119.618
.28402E+08	122.473	133.132	138.269	138.857	133.445	121.024
.31558E+08	123.759	134.251	139.309	139.882	134.544	122.315
.63115E+08	133.082	142.420	146.925	147.398	142.587	131.691
.94673E+08	139.398	148.054	152.232	152.650	148.157	138.055
.12623E+09	144.605	152.770	156.714	157.093	152.830	143.301
.15779E+09	149.223	156.995	160.751	161.099	157.023	147.955
.18935E+09	153.136	160.579	164.177	164.501	160.583	151.902
.22090E+09	156.357	163.519	166.982	167.286	163.505	155.156
.25246E+09	159.216	166.125	169.466	169.753	166.097	158.046
.28402E+09	161.299	167.988	171.225	171.498	167.951	160.157
.31558E+09	162.983	169.473	172.613	172.875	169.429	161.869
.63115E+09	174.827	179.763	182.158	182.340	179.688	173.948
.94673E+09	182.296	186.137	188.004	188.139	186.060	181.600
.12623E+10	184.653	187.723	189.218	189.324	187.657	184.094
.15779E+10	184.984	187.472	188.685	188.771	187.417	184.530
.18935E+10	184.463	186.495	187.487	187.557	186.450	184.092
.22090E+10	183.400	185.071	185.888	185.947	185.034	183.095
.25246E+10	181.759	183.144	183.822	183.871	183.115	181.506
.28402E+10	180.260	181.416	181.982	182.023	181.392	180.050
.31558E+10	178.888	179.857	180.331	180.366	179.837	178.711
.63115E+10	172.038	172.283	172.403	172.413	172.279	171.994
.94673E+10	167.142	167.254	167.308	167.313	167.252	167.122
.12623E+11	164.625	164.688	164.719	164.722	164.688	164.614
.15779E+11	163.028	163.067	163.087	163.088	163.067	163.021
.18935E+11	161.194	161.221	161.233	161.235	161.220	161.190
.22090E+11	159.014	159.034	159.044	159.044	159.034	159.011
.25246E+11	156.626	156.642	156.650	156.650	156.642	156.623
.28402E+11	154.319	154.333	154.340	154.341	154.333	154.317
.31558E+11	152.227	152.240	152.246	152.247	152.240	152.225

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:00 NOV 06, 1995 CP= 35458.910
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP sb1o1se	1652 TEMP ib1i1se	1689 TEMP ib1o1se	2763 TEMP ob1o1se
.10000E-05	86.7153	55.1535	54.5460	30.6803
.20000E-05	86.7154	55.1599	54.5522	30.6815
.31.558	86.7141	55.1592	54.5516	30.6814
.31558E+07	99.2614	71.3698	70.7616	49.6059
.63116E+07	104.758	78.5265	77.9232	58.0011
.94673E+07	108.510	83.4320	82.8341	63.7736
.12623E+08	111.404	87.2362	86.6440	68.2667
.15779E+08	113.775	90.3647	89.7782	71.9702
.18935E+08	115.790	93.0319	92.4509	75.1336
.22090E+08	117.555	95.3684	94.7935	77.9075
.25246E+08	119.115	97.4336	96.8649	80.3607
.28402E+08	120.525	99.2965	98.7334	82.5710
.31558E+08	121.821	101.007	100.449	84.6005
.63115E+08	131.230	113.195	112.676	98.9715
.94673E+08	137.615	121.165	120.668	108.186
.12623E+09	142.875	127.543	127.064	115.434
.15779E+09	147.541	133.097	132.632	121.673
.18935E+09	151.497	137.780	137.328	126.916
.22090E+09	154.760	141.651	141.210	131.258
.25246E+09	157.659	145.088	144.658	135.111
.28402E+09	159.778	147.662	147.242	138.042
.31558E+09	161.499	149.789	149.378	140.484
.63115E+09	173.650	164.987	164.661	158.097
.94673E+09	181.360	174.735	174.474	169.461
.12623E+10	183.900	178.655	178.444	174.486

.15779E+10	184.373	180.147	179.976	176.800
.18935E+10	183.965	180.526	180.387	177.812
.22090E+10	182.990	180.168	180.055	177.948
.25246E+10	181.420	179.082	178.989	177.251
.28402E+10	179.979	178.031	177.954	176.509
.31558E+10	178.652	177.019	176.955	175.747
.63115E+10	171.979	171.566	171.550	171.248
.94673E+10	167.116	166.927	166.920	166.783
.12623E+11	164.611	164.504	164.500	164.423
.15779E+11	163.019	162.953	162.951	162.903
.18935E+11	161.188	161.143	161.142	161.110
.22090E+11	159.010	158.977	158.976	158.952
.25246E+11	156.622	156.595	156.594	156.575
.28402E+11	154.316	154.292	154.292	154.274
.31558E+11	152.224	152.202	152.201	152.185

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 35459.130 TIME= 00:00:00
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2682 TEMP	ot1oose	33.11	.1000E-05	178.1	.2209E+10
3 NSOL	2673 TEMP	ot1oose	33.18	.1000E-05	178.1	.2209E+10
4 NSOL	1899 TEMP	it1oose	34.45	.1000E-05	178.2	.2209E+10
5 NSOL	1794 TEMP	it1oose	34.42	.1000E-05	178.2	.2209E+10
6 NSOL	1276 TEMP	st1oose	40.30	.1000E-05	178.5	.2209E+10
7 NSOL	1233 TEMP	st1oose	40.32	.1000E-05	178.5	.2209E+10
8 NSOL	1196 TEMP	ht1oose	60.85	.1000E-05	180.3	.1893E+10
9 NSOL	1197 TEMP	gt1oose	73.23	31.56	181.6	.1893E+10
10 NSOL	58 TEMP	c01oose	77.31	31.56	182.0	.1893E+10

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11 NSOL 1019 TEMP      gb1iose  78.62    31.56    182.1    .1893E+10
12 NSOL 1020 TEMP      gb1iose  75.86    31.56    181.7    .1893E+10
13 NSOL 1018 TEMP      sb1iose  67.88    31.56    180.8    .1893E+10
14 NSOL 1066 TEMP      sb1iose  67.77    31.56    180.8    .1893E+10
15 NSOL 1529 TEMP      ib1iose  48.50    .1000E-05 179.3    .1893E+10
16 NSOL 1608 TEMP      ib1iose  48.33    .1000E-05 179.2    .1893E+10
17 NSOL 2682 TEMP      ob1iose  33.11    .1000E-05 178.1    .2209E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303      VERSION=HP 9000/7XX 00:00:04 NOV 06, 1995 CP= 35462.250
FOR SUPPORT CALL ROBERT BAHNEY  PHONE (702) 794-5337  FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1iose	2673 TEMP ot1iose	1899 TEMP it1iose	1794 TEMP it1iose	1276 TEMP st1iose	1233 TEMP st1iose
.10000E-05	33.1071	33.1807	34.4488	34.4150	40.2973	40.3232
.20000E-05	33.1089	33.1824	34.4508	34.4170	40.2999	40.3257
31.558	33.1087	33.1823	34.4507	34.4169	40.2996	40.3254
.31558E+07	51.7006	51.7671	52.9077	52.8788	57.6912	57.7121
.63116E+07	59.9476	60.0108	61.0913	61.0647	65.4434	65.4621
.94673E+07	65.6180	65.6788	66.7167	66.6917	70.7837	70.8010
.12623E+08	70.0313	70.0902	71.0938	71.0701	74.9452	74.9613
.15779E+08	73.6690	73.7263	74.7012	74.6786	78.3791	78.3944
.18935E+08	76.7762	76.8321	77.7821	77.7604	81.3148	81.3293
.22090E+08	79.5011	79.5558	80.4839	80.4629	83.8918	83.9057
.25246E+08	81.9114	81.9649	82.8735	82.8532	86.1733	86.1867
.28402E+08	84.0834	84.1359	85.0270	85.0074	88.2317	88.2446
.31558E+08	86.0779	86.1296	87.0046	86.9855	90.1234	90.1358
.63115E+08	100.221	100.266	101.033	101.018	103.599	103.609
.94673E+08	109.304	109.346	110.046	110.033	112.312	112.320
.12623E+09	116.461	116.500	117.153	117.141	119.215	119.222
.15779E+09	122.629	122.665	123.282	123.272	125.186	125.192
.18935E+09	127.815	127.850	128.437	128.427	130.215	130.220
.22090E+09	132.110	132.144	132.705	132.696	134.382	134.386
.25246E+09	135.922	135.955	136.494	136.486	138.082	138.086
.28402E+09	138.819	138.850	139.370	139.362	140.887	140.891
.31558E+09	141.232	141.262	141.765	141.758	143.220	143.224
.63115E+09	158.630	158.652	159.025	159.021	160.042	160.044
.94673E+09	169.858	169.875	170.161	170.158	170.912	170.913
.12623E+10	174.797	174.811	175.037	175.035	175.621	175.621
.15779E+10	177.048	177.059	177.241	177.239	177.707	177.707
.18935E+10	178.013	178.022	178.169	178.167	178.546	178.546
.22090E+10	178.112	178.119	178.240	178.239	178.548	178.549
.25246E+10	177.386	177.392	177.491	177.491	177.747	177.747
.28402E+10	176.622	176.627	176.710	176.709	176.922	176.922
.31558E+10	175.841	175.846	175.914	175.914	176.093	176.093
.63115E+10	171.272	171.273	171.290	171.290	171.336	171.336
.94673E+10	166.794	166.794	166.802	166.802	166.823	166.823
.12623E+11	164.429	164.429	164.433	164.433	164.445	164.445
.15779E+11	162.907	162.907	162.910	162.910	162.917	162.917
.18935E+11	161.112	161.112	161.114	161.114	161.119	161.119
.22090E+11	158.953	158.954	158.955	158.955	158.959	158.959
.25246E+11	156.576	156.577	156.578	156.578	156.581	156.581
.28402E+11	154.276	154.276	154.277	154.277	154.280	154.280
.31558E+11	152.187	152.187	152.188	152.188	152.190	152.190

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303      VERSION=HP 9000/7XX 00:00:04 NOV 06, 1995 CP= 35462.260
FOR SUPPORT CALL ROBERT BAHNEY  PHONE (702) 794-5337  FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP ht1iose	1197 TEMP gt1iose	58 TEMP c01iose	1019 TEMP gb1iose	1020 TEMP gb1iose	1018 TEMP sb1iose
.10000E-05	60.8494	73.2333	77.3113	78.6221	75.8592	67.8839
.20000E-05	60.8502	73.2328	77.3101	78.6208	75.8585	67.8846
31.558	60.8495	73.2319	77.3091	78.6197	75.8574	67.8836
.31558E+07	75.3863	86.3858	89.9669	91.0676	88.5528	81.3458
.63116E+07	81.8901	92.2456	95.6011	96.6124	94.2197	87.3834
.94673E+07	86.3784	96.2826	99.4817	100.433	98.1289	91.5591
.12623E+08	89.8762	99.4206	102.497	103.402	101.170	94.8156
.15779E+08	92.7643	102.008	104.982	105.850	103.678	97.5060
.18935E+08	95.2343	104.218	107.104	107.941	105.822	99.8084
.22090E+08	97.4052	106.160	108.970	109.779	107.707	101.834
.25246E+08	99.3293	107.882	110.624	111.409	109.380	103.631
.28402E+08	101.069	109.440	112.121	112.886	110.894	105.258
.31558E+08	102.670	110.875	113.500	114.245	112.289	106.756
.63115E+08	114.207	121.281	123.528	124.147	122.438	117.618
.94673E+08	121.834	128.259	130.290	130.840	129.277	124.873
.12623E+09	127.980	133.945	135.823	136.324	134.867	130.759
.15779E+09	133.356	138.956	140.712	141.176	139.803	135.931
.18935E+09	137.905	143.206	144.863	145.297	143.993	140.317
.22090E+09	141.675	146.727	148.302	148.711	147.466	143.954
.25246E+09	145.030	149.862	151.365	151.753	150.560	147.193
.28402E+09	147.549	152.197	153.641	154.011	152.862	149.617
.31558E+09	149.632	154.117	155.508	155.864	154.754	151.618
.63115E+09	164.640	167.917	168.924	169.174	168.355	166.039
.94673E+09	174.360	176.844	177.604	177.789	177.164	175.397
.12623E+10	178.325	180.285	180.884	181.028	180.534	179.136
.15779E+10	179.874	181.450	181.932	182.048	181.649	180.523
.18935E+10	180.304	181.586	181.978	182.072	181.747	180.831
.22090E+10	179.989	181.041	181.363	181.441	181.174	180.422
.25246E+10	178.940	179.812	180.080	180.144	179.922	179.299
.28402E+10	177.917	178.644	178.867	178.921	178.736	178.217
.31558E+10	176.927	177.537	177.725	177.770	177.614	177.179
.63115E+10	171.547	171.702	171.750	171.762	171.723	171.612
.94673E+10	166.920	166.991	167.013	167.019	167.001	166.950
.12623E+11	164.501	164.541	164.553	164.557	164.546	164.518
.15779E+11	162.951	162.976	162.984	162.986	162.980	162.962
.18935E+11	161.142	161.159	161.165	161.166	161.162	161.150
.22090E+11	158.976	158.989	158.993	158.994	158.990	158.981
.25246E+11	156.595	156.605	156.608	156.609	156.607	156.599
.28402E+11	154.292	154.301	154.304	154.305	154.302	154.296
.31558E+11	152.202	152.210	152.213	152.214	152.211	152.205

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:04 NOV 06, 1995 CP= 35462.270
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP sb1iose	1529 TEMP ib1iose	1608 TEMP ib1iose	2682 TEMP ob1iose
.10000E-05	67.7702	48.5033	48.3350	33.1071
.20000E-05	67.7708	48.5079	48.3396	33.1089
31.558	67.7699	48.5074	48.3391	33.1087
.31558E+07	81.2360	64.8555	64.6905	51.7006
.63116E+07	87.2762	72.1316	71.9691	59.9476
.94673E+07	91.4539	77.1424	76.9822	65.6180
.12623E+08	94.7123	81.0437	80.8855	70.0313
.15779E+08	97.4045	84.2616	84.1054	73.6690
.18935E+08	99.7086	87.0120	86.8575	76.7762

.22090E+08	101.736	89.4266	89.2738	79.5011
.25246E+08	103.534	91.5648	91.4136	81.9114
.28402E+08	105.162	93.4953	93.3455	84.0834
.31558E+08	106.662	95.2698	95.1216	86.0779
.63115E+08	117.532	107.965	107.829	100.221
.94673E+08	124.792	116.242	116.113	109.304
.12623E+09	130.681	122.840	122.716	116.461
.15779E+09	135.857	128.571	128.452	122.629
.18935E+09	140.245	133.405	133.290	127.815
.22090E+09	143.884	137.411	137.299	132.110
.25246E+09	147.125	140.970	140.861	135.922
.28402E+09	149.551	143.657	143.551	138.819
.31558E+09	151.553	145.888	145.785	141.232
.63115E+09	165.989	161.959	161.878	158.630
.94673E+09	175.357	172.350	172.286	169.858
.12623E+10	179.103	176.748	176.697	174.797
.15779E+10	180.497	178.609	178.567	177.048
.18935E+10	180.810	179.277	179.243	178.013
.22090E+10	180.404	179.147	179.119	178.112
.25246E+10	179.284	178.242	178.219	177.386
.28402E+10	178.205	177.335	177.316	176.622
.31558E+10	177.169	176.439	176.423	175.841
.63115E+10	171.610	171.423	171.419	171.272
.94673E+10	166.949	166.863	166.861	166.794
.12623E+11	164.517	164.468	164.467	164.429
.15779E+11	162.962	162.931	162.931	162.907
.18935E+11	161.149	161.129	161.128	161.112
.22090E+11	158.981	158.966	158.965	158.953
.25246E+11	156.599	156.587	156.586	156.576
.28402E+11	154.296	154.285	154.284	154.276
.31558E+11	152.205	152.195	152.195	152.187

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 35462.480 TIME= 00:00:04
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise

VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise

VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise

VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise

VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise

VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise

VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise

VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise

VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise

VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise

VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise

VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise

VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise

VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise

VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9867 TEMP	ot4oise	30.68	.1000E-05	177.9	.2209E+10
3	NSOL	9830 TEMP	ot4iise	30.71	.1000E-05	177.9	.2209E+10
4	NSOL	9558 TEMP	it4oise	46.04	.1000E-05	179.5	.1893E+10
5	NSOL	9521 TEMP	it4iise	46.08	.1000E-05	179.5	.1893E+10
6	NSOL	8545 TEMP	st4oise	51.67	.1000E-05	180.1	.1893E+10
7	NSOL	8511 TEMP	st4iise	52.09	.1000E-05	180.1	.1893E+10
8	NSOL	8470 TEMP	ht4iise	88.36	31.56	185.0	.1578E+10
9	NSOL	8471 TEMP	gt4iise	102.6	31.56	187.7	.1262E+10
10	NSOL	7947 TEMP	c04iise	109.5	31.56	189.2	.1262E+10
11	NSOL	7952 TEMP	gb4iise	110.5	31.56	189.3	.1262E+10
12	NSOL	7953 TEMP	gb4hise	103.7	31.56	187.7	.1262E+10
13	NSOL	7951 TEMP	sb4iise	87.28	31.56	184.5	.1578E+10
14	NSOL	7996 TEMP	sb4oise	86.73	31.56	184.4	.1578E+10
15	NSOL	8946 TEMP	fb4iise	55.16	.1000E-05	180.5	.1893E+10
16	NSOL	8983 TEMP	fb4oise	54.56	.1000E-05	180.4	.1893E+10
17	NSOL	9867 TEMP	ob4oise	30.68	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:07 NOV 06, 1995 CP= 35465.660
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	30.6845	30.7077	46.0367	46.0763	51.6740	52.0857
.20000E-05	30.6858	30.7090	46.0409	46.0804	51.6779	52.0896
31.558	30.6857	30.7089	46.0405	46.0800	51.6774	52.0890
.31558E+07	49.6094	49.6290	63.4125	63.4492	68.1493	68.5447
.63116E+07	58.0042	58.0223	71.0693	71.1046	75.4454	75.8319
.94673E+07	63.7765	63.7935	76.3160	76.3503	80.4539	80.8332
.12623E+08	68.2694	68.2856	80.3866	80.4200	84.3421	84.7150
.15779E+08	71.9728	71.9883	83.7348	83.7674	87.5421	87.9092
.18935E+08	75.1360	75.1510	86.5898	86.6217	90.2724	90.6343
.22090E+08	77.9098	77.9243	89.0913	89.1226	92.6659	93.0229
.25246E+08	80.3630	80.3770	91.3024	91.3331	94.7826	95.1350
.28402E+08	82.5732	82.5869	93.2953	93.3256	96.6910	97.0392
.31558E+08	84.6026	84.6159	95.1240	95.1537	98.4434	98.7876
.63115E+08	98.9731	98.9842	108.119	108.146	110.947	111.262
.94673E+08	108.188	108.198	116.539	116.564	119.096	119.395
.12623E+09	115.435	115.444	123.230	123.253	125.601	125.888
.15779E+09	121.674	121.682	129.027	129.049	131.254	131.531
.18935E+09	126.917	126.925	133.907	133.929	136.018	136.287
.22090E+09	131.259	131.266	137.944	137.964	139.958	140.220
.25246E+09	135.112	135.119	141.527	141.546	143.455	143.711
.28402E+09	138.043	138.049	144.226	144.245	146.083	146.332
.31558E+09	140.485	140.491	146.463	146.482	148.256	148.499
.63115E+09	158.098	158.102	162.512	162.526	163.833	164.026
.94673E+09	169.461	169.464	172.833	172.844	173.841	173.996
.12623E+10	174.487	174.489	177.148	177.157	177.945	178.069
.15779E+10	176.800	176.802	178.936	178.943	179.575	179.676
.18935E+10	177.812	177.814	179.543	179.549	180.062	180.143
.22090E+10	177.948	177.950	179.363	179.368	179.788	179.855
.25246E+10	177.251	177.252	178.418	178.422	178.769	178.824
.28402E+10	176.510	176.510	177.479	177.482	177.771	177.817
.31558E+10	175.747	175.748	176.558	176.560	176.802	176.840
.63115E+10	171.248	171.248	171.451	171.451	171.512	171.521

.94673E+10	166.783	166.783	166.875	166.875	166.903	166.907
.12623E+11	164.423	164.423	164.474	164.475	164.490	164.492
.15779E+11	162.903	162.903	162.935	162.935	162.945	162.946
.18935E+11	161.110	161.110	161.131	161.131	161.138	161.139
.22090E+11	158.952	158.952	158.968	158.968	158.972	158.973
.25246E+11	156.575	156.575	156.588	156.588	156.592	156.592
.28402E+11	154.274	154.274	154.286	154.286	154.289	154.290
.31558E+11	152.185	152.185	152.196	152.196	152.199	152.200

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:07 NOV 06, 1995 CP= 35465.670
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	88.3633	102.610	109.484	110.517	103.680	87.2825
.20000E-05	88.3627	102.607	109.480	110.513	103.676	87.2826
31.558	88.3616	102.606	109.479	110.512	103.675	87.2813
.31558E+07	101.153	114.249	120.559	121.416	114.987	99.8209
.63116E+07	106.713	119.245	125.283	126.066	119.855	105.309
.94673E+07	110.487	122.611	128.450	129.185	123.141	109.054
.12623E+08	113.387	125.178	130.857	131.556	125.650	111.940
.15779E+08	115.758	127.265	132.808	133.477	127.693	114.304
.18935E+08	117.768	129.027	134.451	135.095	129.418	116.313
.22090E+08	119.525	130.562	135.880	136.503	130.923	118.072
.25246E+08	121.075	131.915	137.138	137.742	132.250	119.626
.28402E+08	122.476	133.136	138.273	138.861	133.449	121.032
.31558E+08	123.761	134.256	139.313	139.886	134.549	122.323
.63115E+08	133.084	142.424	146.928	147.402	142.590	131.697
.94673E+08	139.401	148.057	152.235	152.653	148.160	138.061
.12623E+09	144.607	152.773	156.717	157.096	152.833	143.306
.15779E+09	149.225	156.998	160.753	161.101	157.025	147.960
.18935E+09	153.137	160.582	164.180	164.503	160.586	151.907
.22090E+09	156.358	163.521	166.984	167.288	163.508	155.160
.25246E+09	159.218	166.127	169.469	169.756	166.100	158.050
.28402E+09	161.300	167.991	171.227	171.500	167.953	160.161
.31558E+09	162.985	169.475	172.615	172.877	169.431	161.873
.63115E+09	174.828	179.764	182.159	182.341	179.690	173.951
.94673E+09	182.296	186.138	188.006	188.140	186.061	181.602
.12623E+10	184.653	187.723	189.219	189.325	187.658	184.096
.15779E+10	184.984	187.472	188.686	188.772	187.418	184.532
.18935E+10	184.463	186.495	187.488	187.558	186.450	184.093
.22090E+10	183.400	185.071	185.889	185.947	185.035	183.096
.25246E+10	181.759	183.145	183.823	183.872	183.115	181.507
.28402E+10	180.261	181.416	181.982	182.023	181.392	180.050
.31558E+10	178.888	179.857	180.332	180.367	179.837	178.712
.63115E+10	172.038	172.283	172.404	172.413	172.279	171.994
.94673E+10	167.142	167.254	167.308	167.313	167.252	167.122
.12623E+11	164.625	164.688	164.719	164.722	164.688	164.614
.15779E+11	163.028	163.067	163.087	163.088	163.067	163.022
.18935E+11	161.194	161.221	161.233	161.235	161.220	161.190
.22090E+11	159.014	159.034	159.044	159.044	159.034	159.011
.25246E+11	156.626	156.642	156.650	156.651	156.642	156.623
.28402E+11	154.319	154.333	154.340	154.341	154.333	154.317
.31558E+11	152.227	152.240	152.246	152.247	152.240	152.225

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:07 NOV 06, 1995 CP= 35465.680
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	86.7270	55.1641	54.5566	30.6845
.20000E-05	86.7271	55.1705	54.5629	30.6858
31.558	86.7258	55.1698	54.5622	30.6857
.31558E+07	99.2718	71.3792	70.7710	49.6094
.63116E+07	104.768	78.5353	77.9320	58.0042
.94673E+07	108.520	83.4403	82.8425	63.7765
.12623E+08	111.413	87.2442	86.6520	68.2694
.15779E+08	113.784	90.3725	89.7860	71.9728
.18935E+08	115.799	93.0395	92.4584	75.1360
.22090E+08	117.563	95.3757	94.8009	77.9098
.25246E+08	119.123	97.4408	96.8720	80.3630
.28402E+08	120.533	99.3034	98.7404	82.5732
.31558E+08	121.829	101.014	100.456	84.6026
.63115E+08	131.237	113.201	112.681	98.9731
.94673E+08	137.621	121.170	120.674	108.188
.12623E+09	142.881	127.548	127.069	115.435
.15779E+09	147.546	133.101	132.637	121.674
.18935E+09	151.503	137.785	137.332	126.917
.22090E+09	154.765	141.655	141.215	131.259
.25246E+09	157.663	145.092	144.661	135.112
.28402E+09	159.783	147.666	147.246	138.043
.31558E+09	161.503	149.792	149.382	140.485
.63115E+09	173.653	164.990	164.663	158.098
.94673E+09	181.362	174.737	174.475	169.461
.12623E+10	183.902	178.656	178.446	174.487
.15779E+10	184.375	180.148	179.978	176.800
.18935E+10	183.966	180.527	180.388	177.812
.22090E+10	182.991	180.169	180.055	177.948
.25246E+10	181.421	179.083	178.990	177.251
.28402E+10	179.979	178.031	177.954	176.510
.31558E+10	178.652	177.019	176.955	175.747
.63115E+10	171.979	171.566	171.550	171.248
.94673E+10	167.116	166.927	166.920	166.783
.12623E+11	164.611	164.504	164.500	164.423
.15779E+11	163.019	162.953	162.951	162.903
.18935E+11	161.188	161.143	161.142	161.110
.22090E+11	159.010	158.977	158.976	158.952
.25246E+11	156.622	156.595	156.594	156.575
.28402E+11	154.316	154.292	154.292	154.274
.31558E+11	152.224	152.202	152.201	152.185

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 35465.890 TIME= 00:00:07
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose
 VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose
 VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose
 VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose
 VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose
 VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9786 TEMP	ot4oose	33.13	.1000E-05	178.1	.2209E+10
3	NSOL	9777 TEMP	ot4iose	33.21	.1000E-05	178.1	.2209E+10
4	NSOL	9477 TEMP	it4oose	34.47	.1000E-05	178.2	.2209E+10
5	NSOL	9318 TEMP	it4iose	34.44	.1000E-05	178.2	.2209E+10
6	NSOL	8540 TEMP	st4oose	40.33	.1000E-05	178.6	.2209E+10
7	NSOL	8497 TEMP	st4iose	40.35	.1000E-05	178.6	.2209E+10
8	NSOL	8460 TEMP	ht4iose	60.89	.1000E-05	180.3	.1893E+10
9	NSOL	8461 TEMP	gt4iose	73.28	31.56	181.6	.1893E+10
10	NSOL	7927 TEMP	c04iose	77.36	31.56	182.0	.1893E+10
11	NSOL	7929 TEMP	gb4iose	78.67	31.56	182.1	.1893E+10
12	NSOL	7930 TEMP	gb4hose	75.90	31.56	181.8	.1893E+10
13	NSOL	7928 TEMP	sb4iose	67.93	31.56	180.8	.1893E+10
14	NSOL	7991 TEMP	sb4oose	67.82	31.56	180.8	.1893E+10
15	NSOL	8787 TEMP	ib4iose	48.57	.1000E-05	179.3	.1893E+10
16	NSOL	8902 TEMP	ib4oose	48.40	.1000E-05	179.3	.1893E+10
17	NSOL	9786 TEMP	ob4oose	33.13	.1000E-05	178.1	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:11 NOV 06, 1995 CP= 35469.030
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	33.1335	33.2060	34.4748	34.4412	40.3258	40.3521
.20000E-05	33.1352	33.2078	34.4768	34.4432	40.3284	40.3547
31.558	33.1351	33.2076	34.4766	34.4430	40.3281	40.3544
.31558E+07	51.7226	51.7882	52.9294	52.9006	57.7162	57.7375
.63116E+07	59.9678	60.0301	61.1112	61.0847	65.4668	65.4858
.94673E+07	65.6370	65.6970	66.7353	66.7105	70.8059	70.8236
.12623E+08	70.0493	70.1074	71.1116	71.0879	74.9665	74.9830
.15779E+08	73.6863	73.7428	74.7182	74.6957	78.3997	78.4153
.18935E+08	76.7929	76.8480	77.7985	77.7768	81.3347	81.3496
.22090E+08	79.5172	79.5712	80.4997	80.4788	83.9112	83.9255
.25246E+08	81.9270	81.9798	82.8888	82.8686	86.1923	86.2060
.28402E+08	84.0986	84.1504	85.0419	85.0223	88.2502	88.2634
.31558E+08	86.0927	86.1437	87.0191	87.0001	90.1414	90.1542
.63115E+08	100.233	100.278	101.045	101.030	103.615	103.624
.94673E+08	109.315	109.356	110.056	110.043	112.326	112.334
.12623E+09	116.471	116.509	117.163	117.151	119.228	119.235

.15779E+09	122.638	122.674	123.291	123.281	125.198	125.204
.18935E+09	127.824	127.858	128.446	128.436	130.227	130.232
.22090E+09	132.118	132.151	132.713	132.705	134.392	134.397
.25246E+09	135.930	135.962	136.502	136.494	138.093	138.097
.28402E+09	138.826	138.857	139.378	139.370	140.897	140.901
.31558E+09	141.239	141.269	141.772	141.765	143.230	143.233
.63115E+09	158.635	158.657	159.030	159.026	160.049	160.051
.94673E+09	169.862	169.879	170.165	170.162	170.917	170.918
.12623E+10	174.800	174.813	175.040	175.037	175.625	175.626
.15779E+10	177.050	177.061	177.243	177.241	177.710	177.710
.18935E+10	178.015	178.023	178.171	178.169	178.548	178.549
.22090E+10	178.114	178.121	178.241	178.240	178.550	178.551
.25246E+10	177.387	177.393	177.493	177.492	177.748	177.749
.28402E+10	176.623	176.628	176.711	176.710	176.924	176.924
.31558E+10	175.842	175.846	175.915	175.915	176.094	176.094
.63115E+10	171.272	171.273	171.291	171.290	171.336	171.336
.94673E+10	166.794	166.795	166.802	166.802	166.823	166.823
.12623E+11	164.429	164.429	164.433	164.433	164.445	164.445
.15779E+11	162.907	162.907	162.910	162.910	162.917	162.917
.18935E+11	161.112	161.112	161.114	161.114	161.119	161.119
.22090E+11	158.954	158.954	158.955	158.955	158.959	158.959
.25246E+11	156.576	156.577	156.578	156.578	156.581	156.581
.28402E+11	154.276	154.276	154.277	154.277	154.280	154.280
.31558E+11	152.187	152.187	152.188	152.188	152.190	152.190

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:11 NOV 06, 1995 CP= 35469.040
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	60.8946	73.2787	77.3582	78.6702	75.9067	67.9293
.20000E-05	60.8954	73.2781	77.3571	78.6689	75.9060	67.9300
31.558	60.8947	73.2772	77.3561	78.6678	75.9049	67.9290
.31558E+07	75.4282	86.4285	90.0112	91.1131	88.5976	81.3884
.63116E+07	81.9302	92.2868	95.6439	96.6562	94.2629	87.4244
.94673E+07	86.4172	96.3226	99.5233	100.476	98.1709	91.5988
.12623E+08	89.9140	99.4596	102.537	103.444	101.210	94.8543
.15779E+08	92.8011	102.046	105.021	105.891	103.718	97.5438
.18935E+08	95.2703	104.255	107.143	107.981	105.861	99.8455
.22090E+08	97.4404	106.197	109.008	109.819	107.746	101.870
.25246E+08	99.3638	107.918	110.661	111.448	109.417	103.667
.28402E+08	101.103	109.476	112.158	112.924	110.931	105.293
.31558E+08	102.703	110.910	113.536	114.283	112.326	106.791
.63115E+08	114.237	121.312	123.560	124.180	122.470	117.649
.94673E+08	121.861	128.288	130.320	130.871	129.307	124.901
.12623E+09	128.005	133.972	135.851	136.354	134.895	130.785
.15779E+09	133.380	138.981	140.738	141.203	139.830	135.956
.18935E+09	137.927	143.230	144.888	145.323	144.019	140.341
.22090E+09	141.697	146.751	148.327	148.736	147.491	143.977
.25246E+09	145.051	149.885	151.389	151.777	150.584	147.215
.28402E+09	147.569	152.219	153.664	154.035	152.885	149.638
.31558E+09	149.651	154.139	155.530	155.887	154.776	151.638
.63115E+09	164.655	167.933	168.941	169.191	168.372	166.055
.94673E+09	174.371	176.857	177.617	177.802	177.177	175.409
.12623E+10	178.334	180.295	180.894	181.039	180.544	179.145
.15779E+10	179.881	181.458	181.940	182.057	181.657	180.531
.18935E+10	180.310	181.592	181.984	182.079	181.754	180.837
.22090E+10	179.994	181.046	181.369	181.447	181.179	180.427
.25246E+10	178.944	179.816	180.084	180.149	179.927	179.303
.28402E+10	177.920	178.647	178.871	178.925	178.740	178.220
.31558E+10	176.930	177.540	177.728	177.773	177.618	177.181

.63115E+10	171.548	171.703	171.751	171.763	171.723	171.613
.94673E+10	166.921	166.992	167.014	167.019	167.001	166.951
.12623E+11	164.501	164.541	164.554	164.557	164.546	164.518
.15779E+11	162.951	162.976	162.984	162.986	162.980	162.962
.18935E+11	161.142	161.159	161.165	161.166	161.162	161.150
.22090E+11	158.976	158.989	158.993	158.994	158.990	158.981
.25246E+11	156.595	156.605	156.609	156.609	156.607	156.599
.28402E+11	154.292	154.301	154.304	154.305	154.303	154.296
.31558E+11	152.202	152.210	152.213	152.214	152.211	152.205

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:11 NOV 06, 1995 CP= 35469.050
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP sb4oose	8787 TEMP ib4iose	8902 TEMP ib4oose	9786 TEMP ob4oose
.10000E-05	67.8155	48.5684	48.4002	33.1335
.20000E-05	67.8161	48.5731	48.4048	33.1352
31.558	67.8152	48.5725	48.4043	33.1351
.31558E+07	81.2784	64.9138	64.7489	51.7226
.63116E+07	87.3170	72.1867	72.0244	59.9678
.94673E+07	91.4935	77.1952	77.0351	65.6370
.12623E+08	94.7509	81.0946	80.9366	70.0493
.15779E+08	97.4422	84.3111	84.1550	73.6863
.18935E+08	99.7455	87.0600	86.9058	76.7929
.22090E+08	101.772	89.4735	89.3209	79.5172
.25246E+08	103.570	91.6107	91.4596	81.9270
.28402E+08	105.197	93.5402	93.3906	84.0986
.31558E+08	106.696	95.3138	95.1658	86.0927
.63115E+08	117.562	108.003	107.867	100.233
.94673E+08	124.820	116.276	116.148	109.315
.12623E+09	130.707	122.872	122.748	116.471
.15779E+09	135.882	128.601	128.482	122.638
.18935E+09	140.269	133.434	133.319	127.824
.22090E+09	143.907	137.438	137.326	132.118
.25246E+09	147.147	140.996	140.888	135.930
.28402E+09	149.572	143.682	143.577	138.826
.31558E+09	151.574	145.913	145.809	141.239
.63115E+09	166.004	161.976	161.896	158.635
.94673E+09	175.368	172.363	172.299	169.862
.12623E+10	179.113	176.759	176.707	174.800
.15779E+10	180.505	178.618	178.576	177.050
.18935E+10	180.816	179.284	179.250	178.015
.22090E+10	180.409	179.153	179.125	178.114
.25246E+10	179.289	178.247	178.224	177.387
.28402E+10	178.208	177.339	177.320	176.623
.31558E+10	177.171	176.442	176.426	175.842
.63115E+10	171.610	171.424	171.420	171.272
.94673E+10	166.949	166.864	166.862	166.794
.12623E+11	164.517	164.468	164.467	164.429
.15779E+11	162.962	162.931	162.931	162.907
.18935E+11	161.149	161.129	161.128	161.112
.22090E+11	158.981	158.966	158.966	158.954
.25246E+11	156.599	156.587	156.586	156.576
.28402E+11	154.296	154.285	154.285	154.276
.31558E+11	152.205	152.195	152.195	152.187

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 35469.260 TIME= 00:00:11
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose
 VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose
 VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose
 VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	2874 TEMP	otwoose	33.50	.1000E-05	178.2 .2209E+10
3	NSOL	2610 TEMP	otwiose	33.81	.1000E-05	178.2 .2209E+10
4	NSOL	2556 TEMP	itwoose	34.11	.1000E-05	178.2 .2209E+10
5	NSOL	2504 TEMP	itwiose	34.37	.1000E-05	178.2 .2209E+10
6	NSOL	563 TEMP	stwoose	36.85	.1000E-05	178.4 .2209E+10
7	NSOL	2186 TEMP	stwiose	37.08	.1000E-05	178.5 .2209E+10
8	NSOL	2150 TEMP	htwiose	44.65	.1000E-05	179.1 .1893E+10
9	NSOL	2151 TEMP	gtwiose	48.96	.1000E-05	179.6 .1893E+10
10	NSOL	126 TEMP	c0wiose	51.82	.1000E-05	179.8 .1893E+10
11	NSOL	2085 TEMP	gbwiose	52.77	.1000E-05	179.9 .1893E+10
12	NSOL	2086 TEMP	gbwoose	51.22	.1000E-05	179.7 .1893E+10
13	NSOL	2084 TEMP	sbwiose	48.67	.1000E-05	179.3 .1893E+10
14	NSOL	660 TEMP	sbwoose	48.57	.1000E-05	179.3 .1893E+10
15	NSOL	2236 TEMP	ibwiose	48.40	.1000E-05	179.3 .1893E+10
16	NSOL	2272 TEMP	ibwoose	48.26	.1000E-05	179.3 .1893E+10
17	NSOL	2874 TEMP	obwoose	33.50	.1000E-05	178.2 .2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:14 NOV 06, 1995 CP= 35472.390
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP	2610 TEMP	2556 TEMP	2504 TEMP	563 TEMP	2186 TEMP
	otwoose	otwiose	itwoose	itwiose	stwoose	stwiose

.10000E-05	33.5049	33.8093	34.1108	34.3711	36.8507	37.0829
.20000E-05	33.5068	33.8112	34.1127	34.3731	36.8532	37.0854
31.558	33.5066	33.8110	34.1126	34.3730	36.8530	37.0852
.31558E+07	52.0664	52.3422	52.6144	52.8486	55.0253	55.2299
.63116E+07	60.2972	60.5594	60.8176	61.0395	63.0792	63.2713
.94673E+07	65.9556	66.2081	66.4564	66.6696	68.6141	68.7974
.12623E+08	70.3590	70.6036	70.8440	71.0502	72.9196	73.0960
.15779E+08	73.9883	74.2263	74.4600	74.6604	76.4675	76.6381
.18935E+08	77.0881	77.3203	77.5482	77.7435	79.4971	79.6628
.22090E+08	79.8064	80.0335	80.2562	80.4471	82.1538	82.3152
.25246E+08	82.2107	82.4333	82.6514	82.8382	84.5036	84.6612
.28402E+08	84.3773	84.5958	84.8098	84.9931	86.6216	86.7757
.31558E+08	86.3669	86.5816	86.7919	86.9719	88.5666	88.7176
.63115E+08	100.476	100.665	100.850	101.008	102.376	102.506
.94673E+08	109.538	109.711	109.880	110.024	111.261	111.379
.12623E+09	116.679	116.841	116.999	117.133	118.280	118.389
.15779E+09	122.835	122.988	123.137	123.265	124.340	124.442
.18935E+09	128.012	128.158	128.300	128.421	129.438	129.535
.22090E+09	132.298	132.438	132.574	132.690	133.659	133.751
.25246E+09	136.103	136.238	136.368	136.480	137.406	137.494
.28402E+09	138.993	139.123	139.249	139.356	140.247	140.332
.31558E+09	141.400	141.526	141.648	141.752	142.611	142.693
.63115E+09	158.755	158.848	158.939	159.016	159.640	159.700
.94673E+09	169.953	170.025	170.095	170.154	170.627	170.672
.12623E+10	174.872	174.929	174.984	175.031	175.403	175.438
.15779E+10	177.108	177.154	177.198	177.236	177.533	177.562
.18935E+10	178.062	178.099	178.135	178.165	178.406	178.429
.22090E+10	178.152	178.183	178.212	178.237	178.434	178.453
.25246E+10	177.419	177.444	177.468	177.489	177.652	177.668
.28402E+10	176.650	176.670	176.691	176.708	176.843	176.856
.31558E+10	175.864	175.882	175.898	175.913	176.026	176.037
.63115E+10	171.278	171.282	171.286	171.290	171.318	171.321
.94673E+10	166.797	166.799	166.800	166.802	166.815	166.816
.12623E+11	164.430	164.431	164.432	164.433	164.441	164.441
.15779E+11	162.908	162.908	162.909	162.910	162.914	162.915
.18935E+11	161.113	161.113	161.114	161.114	161.117	161.117
.22090E+11	158.954	158.954	158.955	158.955	158.957	158.957
.25246E+11	156.577	156.577	156.577	156.578	156.579	156.580
.28402E+11	154.276	154.276	154.277	154.277	154.278	154.279
.31558E+11	152.187	152.187	152.187	152.188	152.189	152.189

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:14 NOV 06, 1995 CP= 35472.400
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	44.6457	48.9558	51.8203	52.7659	51.2192	48.6746
.20000E-05	44.6495	48.9602	51.8253	52.7711	51.2243	48.6794
31.558	44.6491	48.9597	51.8247	52.7704	51.2237	48.6789
.31558E+07	61.8580	65.6428	68.1337	68.8708	67.4116	65.0550
.63116E+07	69.4759	73.0225	75.3474	76.0026	74.5970	72.3402
.94673E+07	74.7079	78.0891	80.2999	80.9025	79.5386	77.3560
.12623E+08	78.7744	82.0250	84.1465	84.7098	83.3814	81.2601
.15779E+08	82.1239	85.2660	87.3137	87.8459	86.5484	84.4799
.18935E+08	84.9831	88.0321	90.0166	90.5231	89.2533	87.2314
.22090E+08	87.4905	90.4578	92.3872	92.8718	91.6269	89.6467
.25246E+08	89.7086	92.6037	94.4846	94.9503	93.7280	91.7853
.28402E+08	91.7088	94.5396	96.3771	96.8263	95.6246	93.7159
.31558E+08	93.5463	96.3179	98.1157	98.5501	97.3677	95.4906
.63115E+08	106.630	108.999	110.528	110.871	109.830	108.182
.94673E+08	115.103	117.248	118.629	118.925	117.967	116.454

.12623E+09	121.835	123.822	125.100	125.364	124.466	123.048
.15779E+09	127.668	129.531	130.728	130.968	130.117	128.777
.18935E+09	132.582	134.344	135.475	135.697	134.886	133.608
.22090E+09	136.651	138.329	139.405	139.611	138.834	137.610
.25246E+09	140.264	141.868	142.896	143.090	142.343	141.167
.28402E+09	142.992	144.535	145.523	145.706	144.985	143.850
.31558E+09	145.258	146.746	147.699	147.874	147.176	146.078
.63115E+09	161.558	162.640	163.332	163.448	162.929	162.114
.94673E+09	172.073	172.892	173.415	173.498	173.100	172.475
.12623E+10	176.539	177.184	177.594	177.659	177.344	176.850
.15779E+10	178.444	178.961	179.290	179.342	179.089	178.691
.18935E+10	179.144	179.563	179.831	179.872	179.667	179.344
.22090E+10	179.038	179.381	179.600	179.634	179.466	179.201
.25246E+10	178.151	178.435	178.616	178.644	178.505	178.287
.28402E+10	177.259	177.495	177.645	177.669	177.553	177.372
.31558E+10	176.374	176.572	176.698	176.718	176.621	176.469
.63115E+10	171.406	171.456	171.488	171.493	171.469	171.430
.94673E+10	166.855	166.878	166.892	166.895	166.884	166.866
.12623E+11	164.463	164.476	164.484	164.486	164.480	164.470
.15779E+11	162.928	162.936	162.941	162.942	162.938	162.932
.18935E+11	161.127	161.132	161.135	161.136	161.133	161.129
.22090E+11	158.964	158.968	158.971	158.971	158.969	158.966
.25246E+11	156.585	156.589	156.591	156.591	156.589	156.587
.28402E+11	154.284	154.286	154.288	154.289	154.287	154.285
.31558E+11	152.194	152.196	152.198	152.199	152.197	152.195

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 00:00:14 NOV 06, 1995 CP= 35472.410
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP sbwoose	2236 TEMP ibwoose	2272 TEMP ibwoose	2874 TEMP obwoose
.10000E-05	48.5699	48.4042	48.2619	33.5049
.20000E-05	48.5747	48.4089	48.2666	33.5068
31.558	48.5741	48.4084	48.2661	33.5066
.31558E+07	64.9516	64.7883	64.6479	52.0664
.63116E+07	72.2383	72.0773	71.9388	60.2972
.94673E+07	77.2554	77.0964	76.9598	65.9556
.12623E+08	81.1608	81.0039	80.8689	70.3590
.15779E+08	84.3818	84.2267	84.0933	73.9883
.18935E+08	87.1344	86.9810	86.8491	77.0881
.22090E+08	89.5507	89.3990	89.2685	79.8064
.25246E+08	91.6902	91.5401	91.4109	82.2107
.28402E+08	93.6218	93.4730	93.3450	84.3773
.31558E+08	95.3974	95.2500	95.1232	86.3669
.63115E+08	108.096	107.960	107.844	100.476
.94673E+08	116.373	116.245	116.135	109.538
.12623E+09	122.971	122.848	122.743	116.679
.15779E+09	128.702	128.584	128.482	122.835
.18935E+09	133.536	133.422	133.323	128.012
.22090E+09	137.540	137.429	137.334	132.298
.25246E+09	141.098	140.991	140.898	136.103
.28402E+09	143.784	143.679	143.589	138.993
.31558E+09	146.013	145.911	145.823	141.400
.63115E+09	162.063	161.983	161.914	158.755
.94673E+09	172.435	172.372	172.317	169.953
.12623E+10	176.817	176.766	176.723	174.872
.15779E+10	178.665	178.624	178.588	177.108
.18935E+10	179.323	179.289	179.260	178.062
.22090E+10	179.184	179.157	179.133	178.152
.25246E+10	178.272	178.250	178.230	177.419
.28402E+10	177.360	177.341	177.325	176.650
.31558E+10	176.459	176.444	176.430	175.864

.63115E+10	171.428	171.424	171.421	171.278
.94673E+10	166.865	166.864	166.862	166.797
.12623E+11	164.469	164.468	164.467	164.430
.15779E+11	162.932	162.931	162.931	162.908
.18935E+11	161.129	161.129	161.128	161.113
.22090E+11	158.966	158.966	158.966	158.954
.25246E+11	156.587	156.587	156.586	156.577
.28402E+11	154.285	154.285	154.285	154.276
.31558E+11	152.195	152.195	152.195	152.187

***** ROUTINE COMPLETED ***** CP = 35472.420

 End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glss21x2.db
 FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
 SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glss21x2.db
 FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
 NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
 NUMBER OF R/W OPERATIONS= 30529
 MAXIMUM RECORD NUMBER = 427
 RECORD SIZE (I*4 WORDS) = 16384
 PAGE FILE SIZE (MB) = 26.688

```

*-----*
|               ANSYS RUN COMPLETED               |
|-----|
|               REV. 5.0 A               HP 9000/7XX               |
|               CP TIME (sec) = 35497.330   TIME = 00:01:07         |
|               ELAPSED TIME (sec) = 62749.000   DATE = 11/06/95    |
|-----|
*-----*
    
```

WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glsw21x2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

***** NOTICE ***** THIS IS THE ANSYS GENERAL PURPOSE
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 ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glsw21x2.inp
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED)
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: wvygls1.dat
 16 /COM, * Initial Heat Load: 326 W/canister
 17 /COM, *
 18 /COM, * Surface Temp. file: c21x5a.parm

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19 /COM, *      100 MTU/acre (24.7 kgU/m^2) AML (High Thermal Loading) *
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 22.5 m *
22 /COM, *      WP c/c spacing = 16.165 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,parm,
35 /COM, Read in surface temps. from repository model
36 /COM, PARRES,CHANGE,c21x5a,parm,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 /COM, PI=3.141592654
64 /COM, SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 /COM, *SET,DFRAD,2.5,
73 /COM, *SET,INVRT,0.7,
74 /COM, *SET,WSPC,16.165,
75 /COM, *SET,OFFST,0.1833,
76 /COM, XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 /COM, YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLEN = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM, DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLN=3230.0/1000.0
95 DCLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLN-(2.0*DCLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM, Required ceramic and drum parameters:
102 /COM, CDRAD = glass radius (m)
103 /COM, CDHGT = glass height; height of fill (m)
104 /COM, DRMIR = SRP Canister inner rad. (m)
105 /COM, DRMOR = SRP Canister drum outer rad. (m)
106 /COM, DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM, DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM, DRLEN = SRP Canister outer length (m)
109 /COM, DRILN = SRP Canister inner length (m)
110 /COM, DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM, DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM, DRMOF = SRP Canister center line off set (m)
113 /COM, PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM, FVLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM, Define Extrude Distances as required:
130 /COM, Bottom of WP
131 MIDPT=DCLN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM, Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM, *****
146 /COM, Define calculated parameters
147 /COM, ASSY = assembly heat production (W) f(yrs)
148 /COM, FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM, *****
154 /COM, Define 45 degree point of reference:
155 /COM, TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM, TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM, HCI45 = x coord. WP Center Line side of center Glass at
158 /COM, HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM,          CCO45 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM,          SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM,          SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM,          MI45 = x coord. DCIRD at 45 deg.
163 /COM,          MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM,          DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TCO45=(DRMOF+DRMOR-DRMOR/SQT)
166 TCI45=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CCO45=(DRMOF+DRMOR)
170 SCO45=(DRMOF+DRMOR+DRMOR/SQT)
171 SCI45=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM,          *****
177 /COM,          Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM,          *****
194 /COM,          File props01.dat describes material properties
195 /COM,          and thier reference numbers
196 MPREAD,propsd1,dat,
197 /COM,          *****
198 /COM,          Define new material 15 for low thermal loading
199 /COM,          outer barrier of 70/30 Copper Nickel (C71500)
200 /COM,          Density:      DENS      (kg/m^3)
201 /COM,          Emissivity:   EMIS
202 /COM,          Conductivity: KXX      (W/m/K)
203 /COM,          Specific Heat: C      (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM,          Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM,          Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM,          Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM,          Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7,(5.0/9.0*(1112.0-32.0)),(5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM,          *****
223 /COM,          Read in single drum heat loads
224 /COM,          Calculate the volumetric heat generation
225 /COM,          (Assembly time is in years, FUEL is in seconds)
226 /INPUT,wvygls1,dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLU),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM,      Define LOCAL Coordinate system for canister orientation
234 /COM,      if use CSYS,0, the P. Cans are 2x2,
235 /COM,      if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM,      LOCAL,15,0,0.0,0.0,0.0,45.0,0.0,0.0,
238 /COM, *****
239 /COM,      Construct geometry for a single SRP Pour Canister
240 /COM,      (K's 1 - 10 )
241 /COM,      (L's 1 - 16 )
242 /COM,      (A's 1 - 8 )
243 K, 1,      0.0,      0.0,      0.0,
244 K, 2,      (DRMOF+DRMOR),      (DRMOF+DRMOR),      0.0,
245 K, 3,(DRMOF+DRMOR-DRMIR/SQT),(DRMOF+DRMOR-DRMIR/SQT),      0.0,
246 K, 4,(DRMOF+DRMOR-DRMIR/SQT),(DRMOF+DRMOR+DRMIR/SQT),      0.0,
247 K, 5,(DRMOF+DRMOR+DRMIR/SQT),(DRMOF+DRMOR+DRMIR/SQT),      0.0,
248 K, 6,(DRMOF+DRMOR+DRMIR/SQT),(DRMOF+DRMOR-DRMIR/SQT),      0.0,
249 K, 7,(DRMOF+DRMOR-DRMOR/SQT),(DRMOF+DRMOR-DRMOR/SQT),      0.0,
250 K, 8,(DRMOF+DRMOR-DRMOR/SQT),(DRMOF+DRMOR+DRMOR/SQT),      0.0,
251 K, 9,(DRMOF+DRMOR+DRMOR/SQT),(DRMOF+DRMOR+DRMOR/SQT),      0.0,
252 K,10,(DRMOF+DRMOR+DRMOR/SQT),(DRMOF+DRMOR-DRMOR/SQT),      0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L,10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9,10,2,DRMOR,
268 LARC,10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5,10,15,11,
274 AL, 8, 9,16,10,
275 AL, 7,12,13, 9,
276 AL, 6,11,14,12,
277 /COM, *****
278 /COM,      Interior and WP, Next
279 /COM,      (K's 11 - 19 )
280 /COM,      (L's 17 - 34 )
281 /COM,      (A's 9 - 16 )
282 K,11,      DCIRD,      0.0,      0.0,
283 K,12,      MI45,      0.0,
284 K,13,      0.0,      DCIRD,      0.0,
285 K,14,      (DCIRD+IWALL),      0.0,      0.0,
286 K,15,      MO45,      0.0,
287 K,16,      0.0,      (DCIRD+IWALL),      0.0,
288 K,17,      DCORD,      0.0,      0.0,
289 K,18,      DO45,      DO45,      0.0,
290 K,19,      0.0,      DCORD,      0.0,
291 /COM,
292 L, 1, 7,
293 L,10,11,
294 L, 9,12,
295 L, 8,13,
296 L, 1,13,
297 L, 1,11,
298 LARC,11,12,1,DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM, Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM, *****
388 /COM, Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM, GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM, Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM, Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM, Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM, Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM, Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM, Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM, *****
421 /COM, Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM, *****
425 /COM, Set up drift wall radiation matrix
426 /COM, (K's 32 - 34)
427 /COM, 1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM, Define extrude lines (will not use)
432 /COM, (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM, Extrude drift 8 elements with smallest
436 /COM, elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),    YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WPSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WPSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WPSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WPSPC/2.0),
466 K,44, (0.0-XXX),    YYY, -1*(WPSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WPSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WPSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WPSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WPSPC/2.0),
485 K,49, (0.0-XXX),    YYY, (WPSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,83,84,1,
614 LSEL,A,LINE,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,,
637 VDRAG, 9,10,11,12,,,35,36,,,,
638 VDRAG,13,14,,,,,35,36,,,,
639 VDRAG,15,16,,,,,35,36,,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,,
646 VDRAG,13,14,,,,,40,41,42,,,,
647 VDRAG,15,16,,,,,40,41,42,,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0.0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0.0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0.0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM,      *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM,      *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM,      *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obdrangap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobangap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobangap,

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1139 SE,ibrcangap,
1140 SE,obrdwgap,
1141 /COM, Delete radiation edge elements
1142 ESEL,S,TYPE,,6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM, *****
1151 /COM, Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM, *****
1156 /COM, Gaps in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM, DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM, This section used only if both rad. and He conducti
1159 /COM, is used in the model.
1160 /COM, He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM, Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM, He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM, Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM, He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,6,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TME0,TM10
1342 TIME,TM,
1343 VSEL,S,MAT,,5,
1344 ESLV,S,
1345 BFE,ALL,HGEN,,(FUEL(TM)),
1346 VSEL,ALL
1347 ESEL,ALL
1348 ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359 *ENDDO
1360 /COM,   NSUBST,15,30,10,ON
1361 /COM,   Apply loads and solve for 1 to 9 years
1362 *DO,TM,TME1,TME9,TM11
1363      TIME,TM,
1364      VSEL,S,MAT,,5,
1365      ESLV,S,
1366      BFE,ALL,HGEN,,(FUEL(TM)),
1367      VSEL,ALL
1368      ESEL,ALL
1369      ASEL,S,AREA,,17,26,1
1370      NSLA,S,1,
1371      DDELE,ALL,TEMP,
1372      ASEL,ALL,
1373      NSEL,ALL,
1374      ASEL,S,AREA,,17,26,1
1375      NSLA,S,1,
1376      D,ALL,TEMP,(DFSID(TM)),
1377      ASEL,ALL,
1378      NSEL,ALL,
1379      SOLVE
1380 *ENDDO
1381 /COM,   NSUBST,20,40,15,ON
1382 /COM,   Apply loads and solve for 10 to 90 years
1383 *DO,TM,TME10,TME90,TM110
1384      TIME,TM,
1385      VSEL,S,MAT,,5,
1386      ESLV,S,
1387      BFE,ALL,HGEN,,(FUEL(TM)),
1388      VSEL,ALL
1389      ESEL,ALL
1390      ASEL,S,AREA,,17,26,1
1391      NSLA,S,1,
1392      DDELE,ALL,TEMP,
1393      ASEL,ALL,
1394      NSEL,ALL,
1395      ASEL,S,AREA,,17,26,1
1396      NSLA,S,1,
1397      D,ALL,TEMP,(DFSID(TM)),
1398      ASEL,ALL,
1399      NSEL,ALL,
1400      SOLVE
1401 *ENDDO
1402 /COM,   NSUBST,25,60,20,ON
1403 /COM,   Apply loads and solve for 100 to 1000 years
1404 *DO,TM,TME100,TME1000,TM1100
1405      TIME,TM,
1406      VSEL,S,MAT,,5,
1407      ESLV,S,
1408      BFE,ALL,HGEN,,(FUEL(TM)),
1409      VSEL,ALL
1410      ESEL,ALL
1411      ASEL,S,AREA,,17,26,1
1412      NSLA,S,1,
1413      DDELE,ALL,TEMP,
1414      ASEL,ALL,
1415      NSEL,ALL,
1416      ASEL,S,AREA,,17,26,1
1417      NSLA,S,1,
1418      D,ALL,TEMP,(DFSID(TM)),

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1419      ASEL,ALL,
1420      NSEL,ALL,
1421      SOLVE
1422 *ENDDO
1423 FINISH
1424 /COM, *****
1425 /COM,      Create element contour plots of solution results
1426 /COM,
1427 /COM,      Sort through solution results for time of max temp.
1428 /POST26,
1429 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1430 STORE,NEW,
1431 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1432 FINISH
1433 /POST1,
1434 /COM,      Create temperature contour plots of WP at peak
1435 /RESET,
1436 /TYPE,,HIDP,
1437 /VIEW,1,1,1,1,
1438 /DIST,1,3,0,
1439 /NUM, 1,
1440 /GLINE,,-1,
1441 /TRIAD,OFF,
1442 /PNUM,MAT , 1,
1443 VSEL,S,MAT,,1,5,4
1444 CSYS,31,
1445 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1446 VSEL,U,LOC,Y,-45.0,135.0,
1447 CSYS,0,
1448 ESLV,S
1449 VSEL,S,MAT,,1,5,4
1450 CSYS,32,
1451 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1452 VSEL,U,LOC,Y,-45.0,45.0,
1453 CSYS,0,
1454 ESLV,A
1455 VSEL,S,LOC,X,-100.0,0.0,
1456 ESLV,A
1457 ASEL,S,AREA,,17,26,1
1458 ASEL,R,LOC,X,-100.0,0.0,
1459 ESLA,A
1460 SET,NEAR,,,,TMTMAX,
1461 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1462 /SHOW,solupk,grph,0,8,
1463 /CONTOUR,1,128,AUTO,
1464 PLNSOL,TEMP,
1465 /COM,      Create temperature contour plots at 5, 10, 50, and 100 yrs
1466 SET,NEAR,,,,(TM_START+(5*TM11)),
1467 /TITLE, DHLW WP at 5 years
1468 /SHOW,solu5,grph,0,8,
1469 /CONTOUR,1,128,USER,
1470 PLNSOL,TEMP,
1471 SET,NEAR,,,,TME10,
1472 /TITLE, DHLW WP at 10 years
1473 /SHOW,solu10,grph,0,8,
1474 /CONTOUR,1,128,USER,
1475 PLNSOL,TEMP,
1476 SET,NEAR,,,,TME50,
1477 /TITLE, DHLW WP at 50 years
1478 /SHOW,solu50,grph,0,8,
1479 /CONTOUR,1,128,USER,
1480 PLNSOL,TEMP,
1481 SET,NEAR,,,,TME100,
1482 /TITLE, DHLW WP at 100 years
1483 /SHOW,solu100,grph,0,8,
1484 /CONTOUR,1,128,USER,
1485 PLNSOL,TEMP,
1486 ESEL,ALL,
1487 FINISH
1488 /COM, *****

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1489 /COM,      Print time/temperature output at specific locations
1490 /COM,      Save profile from center to edge
1491 /COM,
1492 /COM,      Variable Legend: A01i000
1493 /COM,      t = structural stainless Canister near center line
1494 /COM,      c = center of Glass log
1495 /COM,      h = halfway between center and Canister
1496 /COM,      s = structural stainless Canister
1497 /COM,      i = inner barrier of DC
1498 /COM,      o = outer barrier of DC
1499 /COM,      ## = cartesian quadrant number of Canister
1500 /COM,      i = side of assembly toward center of WP
1501 /COM,      o = side of assembly toward edge of WP
1502 /COM,      045 = profile 45 deg down
1503 /COM,      135 = profile 45 deg up
1504 /POST26,
1505 NUMVAR,32,
1506 /COM,      *****
1507 /COM,      *Temperature Profile from center to lower right (45 deg.) z=2/3*
1508 /COM,      *****
1509 NSOL, 2,(NODE(TC045,      (-1.0*TC045),(-0.33*BTPT4))),TEMP,,t94i045,
1510 NSOL, 3,(NODE(TCI45,      (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1511 NSOL, 4,(NODE(HCI45,      (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1512 NSOL, 5,(NODE(CCO45,      (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1513 NSOL, 6,(NODE(HCO45,      (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1514 NSOL, 7,(NODE(SCI45,      (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1515 NSOL, 8,(NODE(SCO45,      (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1516 NSOL, 9,(NODE(MI45,      (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1517 NSOL,10,(NODE(MO45,      (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1518 NSOL,11,(NODE( DO45,      (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1519 PRVAR, 2, 3, 4, 5, 6, 7,
1520 PRVAR, 8, 9,10,11,
1521 /COM,      *****
1522 /COM,      * Temperature Profile from center to lower right (45 deg.) *
1523 /COM,      *****
1524 NSOL, 2,(NODE(      TC045,      (-1.0*TC045),0.0)),TEMP,,t04i045,
1525 NSOL, 3,(NODE(      TCI45,      (-1.0*TCI45),0.0)),TEMP,,t04o045,
1526 NSOL, 4,(NODE(      HCI45,      (-1.0*HCI45),0.0)),TEMP,,h04i045,
1527 NSOL, 5,(NODE(      CCO45,      (-1.0*CCO45),0.0)),TEMP,,c04i045,
1528 NSOL, 6,(NODE(      HCO45,      (-1.0*HCO45),0.0)),TEMP,,h04o045,
1529 NSOL, 7,(NODE(      SCI45,      (-1.0*SCI45),0.0)),TEMP,,s04i045,
1530 NSOL, 8,(NODE(      SCO45,      (-1.0*SCO45),0.0)),TEMP,,s04o045,
1531 NSOL, 9,(NODE(      MI45,      (-1.0*MI45),0.0)),TEMP,,i04i045,
1532 NSOL,10,(NODE(      MO45,      (-1.0*MO45),0.0)),TEMP,,i04o045,
1533 NSOL,11,(NODE(      DO45,      (-1.0*DO45),0.0)),TEMP,,o04o045,
1534 PRVAR, 2, 3, 4, 5, 6, 7,
1535 PRVAR, 8, 9,10,11,
1536 /COM,
1537 /COM,      *****
1538 /COM,      * Temperature Profile from center to upper right (135 deg.) *
1539 /COM,      *****
1540 NSOL, 2,(NODE(      TC045,      TC045,0.0)),TEMP,,t01i135,
1541 NSOL, 3,(NODE(      TCI45,      TCI45,0.0)),TEMP,,t01o135,
1542 NSOL, 4,(NODE(      HCI45,      HCI45,0.0)),TEMP,,h01i135,
1543 NSOL, 5,(NODE(      CCO45,      CCO45,0.0)),TEMP,,c01i135,
1544 NSOL, 6,(NODE(      HCO45,      HCO45,0.0)),TEMP,,h01o135,
1545 NSOL, 7,(NODE(      SCI45,      SCI45,0.0)),TEMP,,s01i135,
1546 NSOL, 8,(NODE(      SCO45,      SCO45,0.0)),TEMP,,s01o135,
1547 NSOL, 9,(NODE(      MI45,      MI45,0.0)),TEMP,,i01i135,
1548 NSOL,10,(NODE(      MO45,      MO45,0.0)),TEMP,,i01o135,
1549 NSOL,11,(NODE(      DO45,      DO45,0.0)),TEMP,,o01o135,
1550 PRVAR, 2, 3, 4, 5, 6, 7,
1551 PRVAR, 8, 9,10,11,
1552 /COM,
1553 /COM,      *****
1554 /COM,      * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1555 /COM,      *****
1556 NSOL, 2,(NODE(      TC045,      (-1.0*TC045),(-1*BTPT4))),TEMP,,tb4i045,
1557 NSOL, 3,(NODE(      TCI45,      (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1558 NSOL, 4,(NODE(      HCI45,      (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,

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1559 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), (-1*BTPT4))), TEMP, ,cb4i045,
1560 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), (-1*BTPT4))), TEMP, ,hb4o045,
1561 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), (-1*BTPT4))), TEMP, ,sb4i045,
1562 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, ,sb4o045,
1563 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, ,ib4i045,
1564 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, ,ib4o045,
1565 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, ,ob4o045,
1566 PRVAR, 2, 3, 4, 5, 6, 7,
1567 PRVAR, 8, 9, 10, 11,
1568 /COM,
1569 /COM,
1570 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1571 /COM,
1572 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, ,t01i135,
1573 NSOL, 3, (NODE(      TCI45,      TCI45, (-1*BTPT4))), TEMP, ,t01o135,
1574 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, ,h01i135,
1575 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, ,c01i135,
1576 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, ,h01o135,
1577 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, ,s01i135,
1578 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, ,s01o135,
1579 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, ,i01i135,
1580 NSOL, 10, (NODE(      MO45,      MO45, (-1*BTPT4))), TEMP, ,i01o135,
1581 NSOL, 11, (NODE(      DO45,      DO45, (-1*BTPT4))), TEMP, ,o01o135,
1582 PRVAR, 2, 3, 4, 5, 6, 7,
1583 PRVAR, 8, 9, 10, 11,
1584 /COM,
1585 /COM,
1586 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1587 /COM,
1588 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, ,tt4i045,
1589 NSOL, 3, (NODE(      TCI45,      (-1.0*TCI45), TPPT6)), TEMP, ,tt4o045,
1590 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, ,ht4i045,
1591 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, ,ct4i045,
1592 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, ,ht4o045,
1593 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, ,st4i045,
1594 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, ,st4o045,
1595 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, ,it4i045,
1596 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), TPPT6)), TEMP, ,it4o045,
1597 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), TPPT6)), TEMP, ,ot4o045,
1598 PRVAR, 2, 3, 4, 5, 6, 7,
1599 PRVAR, 8, 9, 10, 11,
1600 /COM,
1601 /COM,
1602 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1603 /COM,
1604 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, ,t01i135,
1605 NSOL, 3, (NODE(      TCI45,      TCI45, TPPT6)), TEMP, ,t01o135,
1606 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, ,h01i135,
1607 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, ,c01i135,
1608 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, ,h01o135,
1609 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, ,s01i135,
1610 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, ,s01o135,
1611 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, ,i01i135,
1612 NSOL, 10, (NODE(      MO45,      MO45, TPPT6)), TEMP, ,i01o135,
1613 NSOL, 11, (NODE(      DO45,      DO45, TPPT6)), TEMP, ,o01o135,
1614 PRVAR, 2, 3, 4, 5, 6, 7,
1615 PRVAR, 8, 9, 10, 11,
1616 /COM,
1617 /COM,
1618 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1619 /COM,
1620 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, ,ot1o135,
1621 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, ,ot1i135,
1622 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, ,it1o135,
1623 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, ,it1i135,
1624 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, ,st1o135,
1625 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, ,st1i135,
1626 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, ,ht1i135,
1627 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, ,gt1i135,
1628 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, ,c01i135,

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1629 NSOL,11,(NODE(    CC045,    CC045,    (-0.33*BTPT4))),TEMP,,gb1i135,
1630 NSOL,12,(NODE(    CC045,    CC045,    (-0.66*BTPT4))),TEMP,,gb1h135,
1631 NSOL,13,(NODE(    CC045,    CC045,    (-1.0*BTPT4))),TEMP,,sb1i135,
1632 NSOL,14,(NODE(    CC045,    CC045,    (-1.0*BTPT3))),TEMP,,sb1o135,
1633 NSOL,15,(NODE(    CC045,    CC045,    (-1.0*BTPT2))),TEMP,,ib1i135,
1634 NSOL,16,(NODE(    CC045,    CC045,    (-1.0*BTPT1))),TEMP,,ib1o135,
1635 NSOL,17,(NODE(    CC045,    CC045,    MIDPT)),TEMP,,ob1o135,
1636 PRVAR, 2, 3, 4, 5, 6, 7,
1637 PRVAR, 8, 9,10,11,12,13,
1638 PRVAR,14,15,16,17,
1639 /COM,
1640 /COM,
1641 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1642 /COM,
1643 NSOL, 2,(NODE(    CC045,(-1.0*CC045),    MIDPT)),TEMP,,ot4o045,
1644 NSOL, 3,(NODE(    CC045,(-1.0*CC045),    TPPT1)),TEMP,,ot4i045,
1645 NSOL, 4,(NODE(    CC045,(-1.0*CC045),    TPPT2)),TEMP,,it4o045,
1646 NSOL, 5,(NODE(    CC045,(-1.0*CC045),    TPPT3)),TEMP,,it4i045,
1647 NSOL, 6,(NODE(    CC045,(-1.0*CC045),    TPPT4)),TEMP,,st4o045,
1648 NSOL, 7,(NODE(    CC045,(-1.0*CC045),    TPPT5)),TEMP,,st4i045,
1649 NSOL, 8,(NODE(    CC045,(-1.0*CC045),    TPPT6)),TEMP,,ht4i045,
1650 NSOL, 9,(NODE(    CC045,(-1.0*CC045),    ( 0.5*TPPT6))),TEMP,,gt4i045,
1651 NSOL,10,(NODE(    CC045,(-1.0*CC045),    0.0)),TEMP,,c04i045,
1652 NSOL,11,(NODE(    CC045,(-1.0*CC045),    (-0.33*BTPT4))),TEMP,,gb4i045,
1653 NSOL,12,(NODE(    CC045,(-1.0*CC045),    (-0.66*BTPT4))),TEMP,,gb4h045,
1654 NSOL,13,(NODE(    CC045,(-1.0*CC045),    (-1.0*BTPT4))),TEMP,,sb4i045,
1655 NSOL,14,(NODE(    CC045,(-1.0*CC045),    (-1.0*BTPT3))),TEMP,,sb4o045,
1656 NSOL,15,(NODE(    CC045,(-1.0*CC045),    (-1.0*BTPT2))),TEMP,,ib4i045,
1657 NSOL,16,(NODE(    CC045,(-1.0*CC045),    (-1.0*BTPT1))),TEMP,,ib4o045,
1658 NSOL,17,(NODE(    CC045,(-1.0*CC045),    MIDPT)),TEMP,,ob4o045,
1659 PRVAR, 2, 3, 4, 5, 6, 7,
1660 PRVAR, 8, 9,10,11,12,13,
1661 PRVAR,14,15,16,17,
1662 /COM,
1663 /COM,
1664 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1665 /COM,
1666 NSOL, 2,(NODE(    TC045,    TC045,    MIDPT)),TEMP,,ot1oise,
1667 NSOL, 3,(NODE(    TC045,    TC045,    TPPT1)),TEMP,,ot1iise,
1668 NSOL, 4,(NODE(    TC045,    TC045,    TPPT2)),TEMP,,it1oise,
1669 NSOL, 5,(NODE(    TC045,    TC045,    TPPT3)),TEMP,,it1iise,
1670 NSOL, 6,(NODE(    TC045,    TC045,    TPPT4)),TEMP,,st1oise,
1671 NSOL, 7,(NODE(    TC045,    TC045,    TPPT5)),TEMP,,st1iise,
1672 NSOL, 8,(NODE(    TC045,    TC045,    TPPT6)),TEMP,,ht1iise,
1673 NSOL, 9,(NODE(    TC045,    TC045,    ( 0.5*TPPT6))),TEMP,,gt1iise,
1674 NSOL,10,(NODE(    TC045,    TC045,    0.0)),TEMP,,c01iise,
1675 NSOL,11,(NODE(    TC045,    TC045,    (-0.33*BTPT4))),TEMP,,gb1iise,
1676 NSOL,12,(NODE(    TC045,    TC045,    (-0.66*BTPT4))),TEMP,,gb1hise,
1677 NSOL,13,(NODE(    TC045,    TC045,    (-1.0*BTPT4))),TEMP,,sb1iise,
1678 NSOL,14,(NODE(    TC045,    TC045,    (-1.0*BTPT3))),TEMP,,sb1oise,
1679 NSOL,15,(NODE(    TC045,    TC045,    (-1.0*BTPT2))),TEMP,,ib1iise,
1680 NSOL,16,(NODE(    TC045,    TC045,    (-1.0*BTPT1))),TEMP,,ib1oise,
1681 NSOL,17,(NODE(    TC045,    TC045,    MIDPT)),TEMP,,ob1oise,
1682 PRVAR, 2, 3, 4, 5, 6, 7,
1683 PRVAR, 8, 9,10,11,12,13,
1684 PRVAR,14,15,16,17,
1685 /COM,
1686 /COM,
1687 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1688 /COM,
1689 NSOL, 2,(NODE(    SC045,    SC045,    MIDPT)),TEMP,,ot1oose,
1690 NSOL, 3,(NODE(    SC045,    SC045,    TPPT1)),TEMP,,ot1iise,
1691 NSOL, 4,(NODE(    SC045,    SC045,    TPPT2)),TEMP,,it1oose,
1692 NSOL, 5,(NODE(    SC045,    SC045,    TPPT3)),TEMP,,it1iise,
1693 NSOL, 6,(NODE(    SC045,    SC045,    TPPT4)),TEMP,,st1oose,
1694 NSOL, 7,(NODE(    SC045,    SC045,    TPPT5)),TEMP,,st1iise,
1695 NSOL, 8,(NODE(    SC045,    SC045,    TPPT6)),TEMP,,ht1iise,
1696 NSOL, 9,(NODE(    SC045,    SC045,    ( 0.5*TPPT6))),TEMP,,gt1iise,
1697 NSOL,10,(NODE(    SC045,    SC045,    0.0)),TEMP,,c01iise,
1698 NSOL,11,(NODE(    SC045,    SC045,    (-0.33*BTPT4))),TEMP,,gb1iise,

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1699 NSOL,12,(NODE( SC045, SC045, (-0.66*BTPT4))),TEMP,,gb1hose,
1700 NSOL,13,(NODE( SC045, SC045, (-1.0*BTPT4))),TEMP,,sb1iose,
1701 NSOL,14,(NODE( SC045, SC045, (-1.0*BTPT3))),TEMP,,sb1oose,
1702 NSOL,15,(NODE( SC045, SC045, (-1.0*BTPT2))),TEMP,,ib1iose,
1703 NSOL,16,(NODE( SC045, SC045, (-1.0*BTPT1))),TEMP,,ib1oose,
1704 NSOL,17,(NODE( SC045, SC045, MIDPT)),TEMP,,ob1oose,
1705 PRVAR, 2, 3, 4, 5, 6, 7,
1706 PRVAR, 8, 9,10,11,12,13,
1707 PRVAR,14,15,16,17,
1708 /COM,
1709 /COM, *****
1710 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1711 /COM, *****
1712 NSOL, 2,(NODE( TCO45,(-1.0*TCO45), MIDPT)),TEMP,,ot4oise,
1713 NSOL, 3,(NODE( TCO45,(-1.0*TCO45), TPPT1)),TEMP,,ot4iise,
1714 NSOL, 4,(NODE( TCO45,(-1.0*TCO45), TPPT2)),TEMP,,it4oise,
1715 NSOL, 5,(NODE( TCO45,(-1.0*TCO45), TPPT3)),TEMP,,it4iise,
1716 NSOL, 6,(NODE( TCO45,(-1.0*TCO45), TPPT4)),TEMP,,st4oise,
1717 NSOL, 7,(NODE( TCO45,(-1.0*TCO45), TPPT5)),TEMP,,st4iise,
1718 NSOL, 8,(NODE( TCO45,(-1.0*TCO45), TPPT6)),TEMP,,ht4iise,
1719 NSOL, 9,(NODE( TCO45,(-1.0*TCO45), ( 0.5*TPPT6))),TEMP,,gt4iise,
1720 NSOL,10,(NODE( TCO45,(-1.0*TCO45), 0.0)),TEMP,,c04iise,
1721 NSOL,11,(NODE( TCO45,(-1.0*TCO45), (-0.33*BTPT4))),TEMP,,gb4iise,
1722 NSOL,12,(NODE( TCO45,(-1.0*TCO45), (-0.66*BTPT4))),TEMP,,gb4hise,
1723 NSOL,13,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT4))),TEMP,,sb4iise,
1724 NSOL,14,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT3))),TEMP,,sb4oise,
1725 NSOL,15,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT2))),TEMP,,ib4iise,
1726 NSOL,16,(NODE( TCO45,(-1.0*TCO45), (-1.0*BTPT1))),TEMP,,ib4oise,
1727 NSOL,17,(NODE( TCO45,(-1.0*TCO45), MIDPT)),TEMP,,ob4oise,
1728 PRVAR, 2, 3, 4, 5, 6, 7,
1729 PRVAR, 8, 9,10,11,12,13,
1730 PRVAR,14,15,16,17,
1731 /COM,
1732 /COM, *****
1733 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1734 /COM, *****
1735 NSOL, 2,(NODE( SC045,(-1.0*SC045), MIDPT)),TEMP,,ot4oose,
1736 NSOL, 3,(NODE( SC045,(-1.0*SC045), TPPT1)),TEMP,,ot4ioise,
1737 NSOL, 4,(NODE( SC045,(-1.0*SC045), TPPT2)),TEMP,,it4oose,
1738 NSOL, 5,(NODE( SC045,(-1.0*SC045), TPPT3)),TEMP,,it4ioise,
1739 NSOL, 6,(NODE( SC045,(-1.0*SC045), TPPT4)),TEMP,,st4oose,
1740 NSOL, 7,(NODE( SC045,(-1.0*SC045), TPPT5)),TEMP,,st4ioise,
1741 NSOL, 8,(NODE( SC045,(-1.0*SC045), TPPT6)),TEMP,,ht4ioise,
1742 NSOL, 9,(NODE( SC045,(-1.0*SC045), ( 0.5*TPPT6))),TEMP,,gt4ioise,
1743 NSOL,10,(NODE( SC045,(-1.0*SC045), 0.0)),TEMP,,c04ioise,
1744 NSOL,11,(NODE( SC045,(-1.0*SC045), (-0.33*BTPT4))),TEMP,,gb4ioise,
1745 NSOL,12,(NODE( SC045,(-1.0*SC045), (-0.66*BTPT4))),TEMP,,gb4hose,
1746 NSOL,13,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT4))),TEMP,,sb4ioise,
1747 NSOL,14,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT3))),TEMP,,sb4oose,
1748 NSOL,15,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT2))),TEMP,,ib4ioise,
1749 NSOL,16,(NODE( SC045,(-1.0*SC045), (-1.0*BTPT1))),TEMP,,ib4oose,
1750 NSOL,17,(NODE( SC045,(-1.0*SC045), MIDPT)),TEMP,,ob4oose,
1751 PRVAR, 2, 3, 4, 5, 6, 7,
1752 PRVAR, 8, 9,10,11,12,13,
1753 PRVAR,14,15,16,17,
1754 /COM,
1755 /COM, *****
1756 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1757 /COM, *****
1758 NSOL, 2,(NODE( DCORD,0.0, MIDPT)),TEMP,,otwoose,
1759 NSOL, 3,(NODE( DCORD,0.0, TPPT1)),TEMP,,otwiise,
1760 NSOL, 4,(NODE( DCORD,0.0, TPPT2)),TEMP,,itwoose,
1761 NSOL, 5,(NODE( DCORD,0.0, TPPT3)),TEMP,,itwiise,
1762 NSOL, 6,(NODE( DCORD,0.0, TPPT4)),TEMP,,stwoose,
1763 NSOL, 7,(NODE( DCORD,0.0, TPPT5)),TEMP,,stwiise,
1764 NSOL, 8,(NODE( DCORD,0.0, TPPT6)),TEMP,,htwiise,
1765 NSOL, 9,(NODE( DCORD,0.0, ( 0.5*TPPT6))),TEMP,,gtwiise,
1766 NSOL,10,(NODE( DCORD,0.0, 0.0)),TEMP,,c0wiise,
1767 NSOL,11,(NODE( DCORD,0.0, (-0.33*BTPT4))),TEMP,,gbwiise,
1768 NSOL,12,(NODE( DCORD,0.0, (-0.66*BTPT4))),TEMP,,gbwoose,

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1769 NSOL,13,(NODE( DCORD,0.0, (-1.0*BTPT4))),TEMP,,sbwiose,
1770 NSOL,14,(NODE( DCORD,0.0, (-1.0*BTPT3))),TEMP,,sbwoose,
1771 NSOL,15,(NODE( DCORD,0.0, (-1.0*BTPT2))),TEMP,,ibwiose,
1772 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1773 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1774 PRVAR, 2, 3, 4, 5, 6, 7,
1775 PRVAR, 8, 9,10,11,12,13,
1776 PRVAR,14,15,16,17,
1777 FINISH
1778 /COM, *****
1779 /COM, End of batch input file
1780 /COM, *****
1781 SAVE,
1782 /EXIT,
1783 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP     /input,,inp,
ABBREVIATION= X3D     /show,3d,
ABBREVIATION= X11     /show,x11,
ABBREVIATION= VEC     /show,,,1,

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ABBREVIATION= RAS /show,,,0,
 ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

 ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

 * *
 * File name: glsw21x2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 * *
 * Material Property file: propsd1.dat *
 * *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 * *
 * *
 * SNF Heat Loads file: wvygls1.dat *
 * Initial Heat Load: 326 W/canister *
 * *
 * Surface Temp. file: c21x5a.parm *
 * 100 MTU/acre (24.7 kgU/m^2) AML (High Thermal Loading) *
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 22.5 m *
 * WP c/c spacing = 16.165 m *
 * *

 Increase the number of database pages from 16 (256) to 32 Mb
 DONT DO: /CONFIG,nvpag,512,
 Work space must also be increased (-m 87) For Radiation Matix

TITLE=

DHLW Glass Form Waste Package

SI UNITS SPECIFIED

LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT = AMPS

 Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE *** CP= .740 TIME= 09:26:47
Restore ANSYS parameters from file= c21x5a.parm.

/INPUT FILE= c21x5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WPSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WPSPC = 16.16500

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01
 PARAMETER IWALL = .2000000E-01
 PARAMETER DCORD = .8545000
 PARAMETER DCLN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass hieght; hieght of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000

PARAMETER BTPT4 = 1.495000
 Top of WP
 PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)

FUEL = volumetric heat production (W/m3) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TC045 = x coord. WP Center Line Outer Pour Can. at 45 de

TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de

HCI45 = x coord. WP Center Line side of center Glass at

HCO45 = x coord. WP Edge side of center Glass at 45 deg.

CC045 = x coord. Glass Center Line in Pour Can. at 45 de

SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.

SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.

MI45 = x coord. DCIRD at 45 deg.

MO45 = x coord. DCIRD+IWALL at 45 deg.

DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TC045 = .1094244

PARAMETER TCI45 = .1161419

PARAMETER HCI45 = .2205462

PARAMETER HCO45 = .4293549

PARAMETER CC045 = .3249505

PARAMETER SCO45 = .5404767

PARAMETER SCI45 = .5337592

PARAMETER MI45 = .5547253

PARAMETER MO45 = .5688674

PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 09:26:48 NOV 08, 1995 CP= 1.500

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **
** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSW2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **
** Emissivity EMIS **
** Conductivity: KXX (W/m/K) **
** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1

SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1
SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 21.11000 37.78000 65.56000
 93.33000 121.1100 148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 176.6700 204.4400 232.2200
 260.0000 287.7800 315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***
 SLOC= 13 343.3300 371.1100 398.8900
 426.6700 454.4400 482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***
 SLOC= 19 510.0000 537.7800 565.5600
 593.3300 621.1100 648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***
 SLOC= 25 676.6700 704.4400 732.2200
 760.0000 787.7800 815.5600

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 6
 SLOC= 1 13.33000 13.67000 14.19000 14.54000
 15.06000 15.58000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 12
 SLOC= 7 15.92000 16.44000 16.96000 17.31000
 17.83000 18.17000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 18
 SLOC= 13 18.52000 19.04000 19.38000 19.90000
 20.25000 20.77000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 24
 SLOC= 19 21.11000 21.46000 21.98000 22.33000
 22.67000 23.02000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 30
 SLOC= 25 23.54000 23.88000 24.23000 24.58000
 24.92000 25.27000

PROPERTY TABLE C MAT= 1 NUM. POINTS= 6
 SLOC= 1 481.6800 486.9200 498.0900 499.3800
 509.9800 520.2900

PROPERTY TABLE C MAT= 1 NUM. POINTS= 12
 SLOC= 7 521.0700 527.3800 536.9200 537.3400
 543.0200 543.3100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 18
 SLOC= 13 546.9100 552.1400 552.2600 557.2200
 557.2500 565.1100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 24
 SLOC= 19 565.0100 564.9100 572.3500 572.1400
 574.9200 574.6800

PROPERTY TABLE C MAT= 1 NUM. POINTS= 30
 SLOC= 25 581.6400 581.3000 583.8600 586.3600
 585.9600 588.3900

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 6
 SLOC= 1 40.84000 41.36000 41.88000 42.23000
 42.23000

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 12
 SLOC= 7 42.06000 41.88000 41.36000 41.02000
 40.50000 39.98000

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 18	
SLOC= 13	39.29000	38.77000	38.08000	37.56000
	36.69000	36.17000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 24	
SLOC= 19	35.48000	34.61000	33.92000	33.23000
	32.36000	31.50000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 30	
SLOC= 25	30.29000	28.90000	27.35000	26.48000
	26.13000	26.13000		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 6	
SLOC= 1	428.7200	444.9500	460.9400	476.8700
	486.0800	495.6600		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 12	
SLOC= 7	506.0900	517.0700	525.6400	536.9900
	543.6300	550.6200		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 18	
SLOC= 13	562.2100	577.3200	589.1000	600.5700
	611.3500	629.0900		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 24	
SLOC= 19	645.3200	665.1200	682.0700	694.5200
	724.0700	761.9500		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 30	
SLOC= 25	806.3100	888.6000	1095.040	1638.780
	808.6800	736.9000		

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 6 ***
SLOC= 1	93.33000 121.1100 148.8900
	176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 12 ***
SLOC= 7	260.0000 287.7800 315.5600
	343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 18 ***
SLOC= 13	426.6700 454.4400 482.2200
	510.0000 537.7800 565.5600

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 24 ***
SLOC= 19	593.3300 621.1100 648.8900
	676.6700 704.4400 732.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 27 ***
SLOC= 25	760.0000 787.7800 815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 6	
SLOC= 1	12.29000	12.63000	13.15000	13.67000
	14.02000	14.54000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 12	
SLOC= 7	14.88000	15.40000	15.75000	16.10000
	16.61000	16.96000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 18	
SLOC= 13	17.31000	17.65000	18.00000	18.52000
	18.86000	19.21000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 24	
SLOC= 19	19.73000	20.08000	20.42000	20.94000

21.46000 21.98000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 27
SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 93.33000 121.1100 148.8900
176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
SLOC= 7 260.0000 287.7800 315.5600
343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***
SLOC= 13 426.6700 454.4400 482.2200
510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6
SLOC= 1 460.6900 477.4200 501.0200 504.6500
498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12
SLOC= 7 536.8800 559.8500 576.8300 576.2100
581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17
SLOC= 13 619.5800 636.7600 654.2000 678.2500
696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***
SLOC= 1 25.00000 50.00000 94.00000
95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***
SLOC= 5 105.0000 114.0000 115.0000
155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***
SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4
SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8
SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11
SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, ~10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 -13.15000 6.850000 26.85000
76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
SLOC= 7 226.8500 276.8500 326.8500

376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***
SLOC= 13 526.8500 626.8500 726.8500

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6
SLOC= 1 .1875000 .1750000 .1625000 .1422000
.1219000 .1097000

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12
SLOC= 7 .9750000E-01 .9060000E-01 .8360000E-01 .7670000E-01
.6970000E-01 .6620000E-01

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15
SLOC= 13 .6270000E-01 .5580000E-01 .4880000E-01

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6
SLOC= 1 .1370000 .1450000 .1520000 .1700000
.1870000 .2040000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12
SLOC= 7 .2200000 .2360000 .2520000 .2640000
.2780000 .2910000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15
SLOC= 13 .3040000 .3300000 .3540000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6
SLOC= 1 1.348000 1.254700 1.161400 .9950000
.8711000 .7740000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12
SLOC= 7 .6964000 .6329000 .5804000 .5356000
.4975000 .4643000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15
SLOC= 13 .4354000 .3868000 .3482000

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6
SLOC= 1 .2300000E-01 .2500000E-01 .2600000E-01 .3000000E-01
.3400000E-01 .3700000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12
SLOC= 7 .4100000E-01 .4400000E-01 .4700000E-01 .5000000E-01
.5200000E-01 .5500000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15
SLOC= 13 .5700000E-01 .6200000E-01 .6700000E-01

PROPERTY TABLE C MAT= 8 NUM. POINTS= 6
SLOC= 1 1006.200 1006.600 1007.000 1009.000
1014.000 1021.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 12
SLOC= 7 1030.000 1040.000 1051.000 1063.000
1075.000 1087.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 15
SLOC= 13 1099.000 1121.000 1141.000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6
SLOC= 1 1.303700 1.213500 1.123300 .9625000
.8425000 .7485000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12
SLOC= 7 .6739000 .6124000 .5615000 .5214000
.4812000 .4512000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15

SLOC= 13 .4211000 .3743000 .3368000

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6
SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
.3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
.5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
SLOC= 1 1041.800 1041.400 1041.000 1042.000
1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
SLOC= 7 1056.000 1065.000 1075.000 1086.500
1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
.2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
.3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 -73.15000 26.85000 126.8500
326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
SLOC= 1 413.0000 401.0000 393.0000 379.0000
366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
SLOC= 1 356.0000 385.0000 397.0000 417.0000
433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
SLOC= 1 23.00000 50.00000 100.0000
150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
SLOC= 1 182.5600 190.1700 199.2200 202.9100
203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
SLOC= 1 868.0000 903.0000 946.0000 976.0000
998.0000

** End of Material Property List **

Define new material 15 for low thermal loading
outer barrier of 70/30 Copper Nickel (C71500)
Density: DENS (kg/m³)
Emissivity: EMIS
Conductivity: KXX (W/m/K)
Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .000000E+00
Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
Calculate the volumetric heat generation
(Assembly time is in years, FUEL is in seconds)

/INPUT FILE= wvygls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **

** Output Calculated by T. L. Lotz 5/08/95 for ORNL Report Data **

** **

** Executable File Name: MATHCAD.EXE **

** Output File Name: wvygls1.dat **

** Execution Date: 05/08/95 **

** Start Age (years): 0.0 **

** Decay Period (years): 10000 **

** Enrichment (kg Pu): N.A. **

** Burnup (MWD/MTHM): N.A. **

** Assembly Type: SR Pour Canisters **

** Pu Fract. (kg Pu/KG HM):N.A. **

**
 ** ASSY(#,1) is the Pour Cainsster heat in Watts.
 ** ASSY(#,0) is the time post emplacement in years.

PARAMETER ASSY(1,1) =	325.9300 325.6300	325.8600 325.5500	325.7800	325.7000
PARAMETER ASSY(7,1) =	325.4800 325.1700	325.4000 324.8000	325.3300	325.2500
PARAMETER ASSY(13,1) =	324.4200 322.9100	324.0400 322.5300	323.6600	323.2900
PARAMETER ASSY(19,1) =	322.1600 320.6600	321.7800 320.2900	321.4100	321.0300
PARAMETER ASSY(25,1) =	319.9100 318.4300	319.5400 314.7400	319.1700	318.8000
PARAMETER ASSY(31,1) =	311.1000 296.9700	307.5100 293.5400	303.9500	300.4400
PARAMETER ASSY(37,1) =	290.1500 277.0000	286.8000 273.8100	283.5000	280.2300
PARAMETER ASSY(43,1) =	270.6600 258.4200	267.5400 230.2700	264.4700	261.4200
PARAMETER ASSY(49,1) =	205.3100 130.5800	183.1600 116.8400	163.5000	146.0600
PARAMETER ASSY(55,1) =	104.6400 68.03000	93.80000 61.28000	84.18000	75.63000
PARAMETER ASSY(61,1) =	55.28000 37.21000	49.94000 16.13000	45.19000	40.97000
PARAMETER ASSY(67,1) =	9.190000 4.371000	6.641000 3.984000	5.502000	4.844000
PARAMETER ASSY(73,1) =	3.648000 2.620000	3.349000 2.423000	3.081000	2.839000
PARAMETER ASSY(79,1) =	2.244000 1.684000	2.082000 .9627000	1.936000	1.804000
PARAMETER ASSY(85,1) =	.6893000 .4727000	.5783000 .4526000	.5263000	.4956000
PARAMETER ASSY(91,1) =	.4335000 .3591000	.4148000 .3406000	.3962000	.3776000
PARAMETER ASSY(97,1) =	.3221000 .2480000	.3036000	.2851000	.2666000
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000

PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000
PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
INPUT MATRIX= ASSY(1,0)
INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
FUEL(1) = COPY ASSY(1)
SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
if use CSYS,0, the P. Cans are 2x2,
if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,45.0,0,0,0,0,

Construct geometry for a single SRP Pour Canister
(K's 1 - 10)

(L's 1 - 16)
(A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.= 1	KP1= 3	TAN1=	-.7071	-.7071	.0000
	KP2= 2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.= 2	KP1= 2	TAN1=	-.7071	.7071	.0000
	KP2= 6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.= 3	KP1= 4	TAN1=	-.7071	.7071	.0000
	KP2= 2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.= 4	KP1= 2	TAN1=	-.7071	-.7071	.0000
	KP2= 5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 5	KP1= 6	TAN1= -.7071
	KP2= 5	TAN2= -.7071
		.0000

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 6	KP1= 5	TAN1= .7071
	KP2= 4	TAN2= -.7071
		.0000

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 7	KP1= 4	TAN1= .7071
	KP2= 3	TAN2= .7071
		.0000

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 8	KP1= 3	TAN1= -.7071
	KP2= 6	TAN2= .7071
		.0000

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.= 9	KP1= 7	TAN1=	-.7071	-.7071	.0000
	KP2= 3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.= 10	KP1= 10	TAN1=	.7071	-.7071	.0000
	KP2= 6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.= 11	KP1= 9	TAN1=	.7071	.7071	.0000
	KP2= 5	TAN2=	-.7071	-.7071	.0000

```

LINE CONNECTS KEYPOINTS      8      4
LINE NO.= 12 KP1=      8 TAN1=  -.7071  .7071  .0000
                  KP2=      4 TAN2=  .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      7 AND      8 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 13 KP1=      7 TAN1=  .7071  -.7071  .0000
                  KP2=      8 TAN2=  .7071  .7071  .0000

ARC BETWEEN KEYPOINTS      8 AND      9 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 14 KP1=      8 TAN1=  -.7071  -.7071  .0000
                  KP2=      9 TAN2=  .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      9 AND     10 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 15 KP1=      9 TAN1=  -.7071  .7071  .0000
                  KP2=     10 TAN2=  -.7071  -.7071  .0000

ARC BETWEEN KEYPOINTS     10 AND      7 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 16 KP1=     10 TAN1=  .7071  .7071  .0000
                  KP2=      7 TAN2=  -.7071  .7071  .0000

```

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      2      4      5
(TRAVERSED IN SAME DIRECTION AS LINE      2)

```

AREA NUMBER = 1

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      2      8
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 2

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      3      7
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 3

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      3      4      6
(TRAVERSED IN SAME DIRECTION AS LINE      3)

```

AREA NUMBER = 4

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      5     10     15     11
(TRAVERSED IN SAME DIRECTION AS LINE      5)

```

AREA NUMBER = 5

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      8      9     16     10
(TRAVERSED IN SAME DIRECTION AS LINE      8)

```

AREA NUMBER = 6

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      7     12     13      9
(TRAVERSED IN SAME DIRECTION AS LINE      7)

```

AREA NUMBER = 7

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      6     11     14     12
(TRAVERSED IN SAME DIRECTION AS LINE      6)

```

AREA NUMBER = 8

Interior and WP, Next

(K's 11 - 19)

(L's 17 - 34)

(A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7
LINE NO.= 17	KP1= 1	TAN1= -.7071
	KP2= 7	TAN2= .7071
		.0000

LINE CONNECTS KEYPOINTS	10	11
LINE NO.= 18	KP1= 10	TAN1= -.9125
	KP2= 11	TAN2= .4092
		.0000

LINE CONNECTS KEYPOINTS	9	12
LINE NO.= 19	KP1= 9	TAN1= -.7071
	KP2= 12	TAN2= .7071
		.0000

LINE CONNECTS KEYPOINTS	8	13
LINE NO.= 20	KP1= 8	TAN1= .4092
	KP2= 13	TAN2= -.9125
		.0000

LINE CONNECTS KEYPOINTS	1	13
LINE NO.= 21	KP1= 1	TAN1= .0000
	KP2= 13	TAN2= -1.0000
		.0000

LINE CONNECTS KEYPOINTS	1	11
LINE NO.= 22	KP1= 1	TAN1= -1.0000
	KP2= 11	TAN2= .0000
		.0000

ARC BETWEEN KEYPOINTS	11 AND 12	ORIENTATION KEYPOINT= 1
RADIUS= .78450		
LINE NO.= 23	KP1= 11	TAN1= .0000
	KP2= 12	TAN2= -1.0000
		.0000

ARC BETWEEN KEYPOINTS	12 AND 13	ORIENTATION KEYPOINT= 1
RADIUS= .78450		
LINE NO.= 24	KP1= 12	TAN1= .7071
	KP2= 13	TAN2= -1.0000
		.0000

LINE CONNECTS KEYPOINTS	11	14
LINE NO.= 25	KP1= 11	TAN1= -1.0000
	KP2= 14	TAN2= .0000
		.0000

LINE CONNECTS KEYPOINTS	12	15
LINE NO.= 26	KP1= 12	TAN1= -.7071
	KP2= 15	TAN2= .7071
		.0000

LINE CONNECTS KEYPOINTS	16	13
-------------------------	----	----


```

LINE NO.= 27 KP1= 16 TAN1= .0000 1.0000 .0000
              KP2= 13 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
RADIUS= .80450
LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
              KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
RADIUS= .80450
LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
              KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17
LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
              KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18
LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
              KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16
LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
              KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
RADIUS= .85450
LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
              KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
RADIUS= .85450
LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
              KP2= 18 TAN2= .7071 -.7071 .0000

```

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 22 18 16 17
(TRAVERSED IN SAME DIRECTION AS LINE 22)

```

AREA NUMBER = 9

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 23 19 15 18
(TRAVERSED IN SAME DIRECTION AS LINE 23)

```

AREA NUMBER = 10

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 24 20 14 19
(TRAVERSED IN SAME DIRECTION AS LINE 24)

```

AREA NUMBER = 11

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 21 17 13 20
(TRAVERSED IN SAME DIRECTION AS LINE 21)

```

AREA NUMBER = 12

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 23 25 28 26
(TRAVERSED IN SAME DIRECTION AS LINE 23)

```

AREA NUMBER = 13

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 24 26 29 27
(TRAVERSED IN SAME DIRECTION AS LINE 24)

```

AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas
glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 3.130 TIME= 09:26:50
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.160 TIME= 09:26:50
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.160 TIME= 09:26:50
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.230 TIME= 09:26:50
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.250 TIME= 09:26:50
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE ***

CP= 3.250 TIME= 09:26:50

Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***

92 93 94 95 96

NUMBER OF AREAS MESHED = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces

(K's 20 - 31)

(L's 35 - 46)

Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 20
 LINE NO.= 35 KP1= 1 TAN1= .0000 .0000 1.0000
 KP2= 20 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 20 21
 LINE NO.= 36 KP1= 20 TAN1= .0000 .0000 1.0000
 KP2= 21 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 21 22
 LINE NO.= 37 KP1= 21 TAN1= .0000 .0000 1.0000
 KP2= 22 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 22 23
 LINE NO.= 38 KP1= 22 TAN1= .0000 .0000 1.0000
 KP2= 23 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 23 24
 LINE NO.= 39 KP1= 23 TAN1= .0000 .0000 1.0000
 KP2= 24 TAN2= .0000 .0000 -1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
----------	----	--------	-------------	-------------	---------	------------

KEYPOINT 26 X,Y,Z= .000000E+00 .000000E+00 1.21460 IN CSYS= 0
 KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 8.08250 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -8.08250 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000
KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000
KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000
KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000
KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000
KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000
 KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000
 Back Point

(K's 40 - 44)
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -8.08250 IN CSYS= 0

KEYPOINT 41 X,Y,Z= 2.50000 .183300 -8.08250 IN CSYS= 0

KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -8.08250 IN CSYS= 0

KEYPOINT 43 X,Y,Z= -2.50000 .183300 -8.08250 IN CSYS= 0

KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -8.08250 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT	45	X,Y,Z=	1.73494	-1.61670	8.08250	IN CSYS= 0
KEYPOINT	46	X,Y,Z=	2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	47	X,Y,Z=	.000000E+00	2.68330	8.08250	IN CSYS= 0
KEYPOINT	48	X,Y,Z=	-2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	49	X,Y,Z=	-1.73494	-1.61670	8.08250	IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 59 KP1= 45 TAN1= -.7200 -.6940 .0000
KP2= 46 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 60 KP1= 46 TAN1= .0000 -1.0000 .0000
KP2= 47 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 61 KP1= 47 TAN1= 1.0000 .0000 .0000
KP2= 48 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33
RADIUS= 2.5000
LINE NO.= 62 KP1= 48 TAN1= .0000 1.0000 .0000
KP2= 49 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 49 45
LINE NO.= 63 KP1= 49 TAN1= -1.0000 .0000 .0000
KP2= 45 TAN2= 1.0000 .0000 .0000
Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)
TO NDIV = 4, SPACING RATIO = 1.000
3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40
LINE NO.= 64 KP1= 35 TAN1= .0000 .0000 1.0000
KP2= 40 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 36 41
LINE NO.= 65 KP1= 36 TAN1= .0000 .0000 1.0000
KP2= 41 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66 KP1= 37 TAN1= .0000 .0000 1.0000
 KP2= 42 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(A's 17 - 26)

DEFINE AREA BY LIST OF LINES

LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.850 TIME= 09:26:50

Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES

LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.900 TIME= 09:26:50

Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES

LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.950 TIME= 09:26:51

Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES

LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.990 TIME= 09:26:51

Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES

LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 4.030 TIME= 09:26:51

Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES

LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 4.070 TIME= 09:26:51

Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES

LINE LIST = 61 72 51 71
(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 4.120 TIME= 09:26:51
Lines 61, 72, 51, and 71 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES
LINE LIST = 62 73 52 72
(TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 4.160 TIME= 09:26:51
Lines 62, 73, 52, and 72 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES
LINE LIST = 53 64 58 68
(TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES
LINE LIST = 63 69 53 73
(TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
MAXIMUM NODE NUMBER = 430
MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 481
MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
(K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50			
LINE NO.= 74	KP1= 27	TAN1=	-1.0000	.0000	.0000
	KP2= 50	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	27	51			
LINE NO.= 75	KP1= 27	TAN1=	.0000	-1.0000	.0000
	KP2= 51	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	50	52			
LINE NO.= 76	KP1= 50	TAN1=	-1.0000	.0000	.0000
	KP2= 52	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	51	53			
LINE NO.= 77	KP1= 51	TAN1=	.0000	-1.0000	.0000
	KP2= 53	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	52	54			
LINE NO.= 78	KP1= 52	TAN1=	-1.0000	.0000	.0000
	KP2= 54	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	53	55			
LINE NO.= 79	KP1= 53	TAN1=	.0000	-1.0000	.0000
	KP2= 55	TAN2=	.0000	1.0000	.0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS 50 AND 51 ORIENTATION KEYPOINT= 27
RADIUS= .78450

```

LINE NO.= 80 KP1= 50 TAN1= .0000 -1.0000 .0000
              KP2= 51 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
RADIUS= .80450
LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
              KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
RADIUS= .85450
LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
              KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    74 TO      75 STEP      1

      2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE    80 TO      82 STEP      1

      5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 8, SPACING RATIO = 1.000

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    76 TO      79 STEP      1

      4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      26 STEP      1

      26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      82 STEP      1

      82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT  FOR ITEM=KP COMPONENT=
IN RANGE    1 TO      55 STEP      1

      55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
      (A's 27 - 29 )

DEFINE AREA BY LIST OF LINES
LINE LIST = 74 75 80
      (TRAVERSED IN SAME DIRECTION AS LINE 74)

AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
LINE LIST = 80 76 81 77
      (TRAVERSED IN SAME DIRECTION AS LINE 80)

AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
LINE LIST = 81 78 82 79
      (TRAVERSED IN SAME DIRECTION AS LINE 81)

AREA NUMBER = 29
*****
Construct geometry for WP Bottom end

```

(K's 56 - 61)

KEYPOINT	56	X,Y,Z=	.784500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	57	X,Y,Z=	.000000E+00	.784500	-1.51000	IN CSYS= 0
KEYPOINT	58	X,Y,Z=	.804500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	59	X,Y,Z=	.000000E+00	.804500	-1.51000	IN CSYS= 0
KEYPOINT	60	X,Y,Z=	.854500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	61	X,Y,Z=	.000000E+00	.854500	-1.51000	IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS	21	56			
LINE NO.= 83	KP1= 21	TAN1=	-1.0000	.0000	.0000
	KP2= 56	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	21	57			
LINE NO.= 84	KP1= 21	TAN1=	.0000	-1.0000	.0000
	KP2= 57	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	56	58			
LINE NO.= 85	KP1= 56	TAN1=	-1.0000	.0000	.0000
	KP2= 58	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	57	59			
LINE NO.= 86	KP1= 57	TAN1=	.0000	-1.0000	.0000
	KP2= 59	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	58	60			
LINE NO.= 87	KP1= 58	TAN1=	-1.0000	.0000	.0000
	KP2= 60	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	59	61			
LINE NO.= 88	KP1= 59	TAN1=	.0000	-1.0000	.0000
	KP2= 61	TAN2=	.0000	1.0000	.0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS	56 AND	57	ORIENTATION KEYPOINT=	21
RADIUS=	.78450			
LINE NO.= 89	KP1= 56	TAN1=	.0000	-1.0000
	KP2= 57	TAN2=	-1.0000	.0000
ARC BETWEEN KEYPOINTS	58 AND	59	ORIENTATION KEYPOINT=	21
RADIUS=	.80450			
LINE NO.= 90	KP1= 58	TAN1=	.0000	-1.0000
	KP2= 59	TAN2=	-1.0000	.0000
ARC BETWEEN KEYPOINTS	60 AND	61	ORIENTATION KEYPOINT=	21
RADIUS=	.85450			
LINE NO.= 91	KP1= 60	TAN1=	.0000	-1.0000
	KP2= 61	TAN2=	-1.0000	.0000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES

```

    TO NDIV = 8, SPACING RATIO = 1.000

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    85 TO      88 STEP      1

    4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
    TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      29 STEP      1

    29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      91 STEP      1

    91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT  FOR ITEM=KP   COMPONENT=
IN RANGE    1 TO      61 STEP      1

    61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
    (A's 30 - 32 )

DEFINE AREA BY LIST OF LINES
    LINE LIST = 83 84 89
    (TRAVERSED IN SAME DIRECTION AS LINE 83)

    AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
    LINE LIST = 89 85 90 86
    (TRAVERSED IN SAME DIRECTION AS LINE 89)

    AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
    LINE LIST = 90 87 91 88
    (TRAVERSED IN SAME DIRECTION AS LINE 90)

    AREA NUMBER = 32
    Mesh areas
        Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
    PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
    IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6
MAXIMUM NODE NUMBER = 675
MAXIMUM ELEMENT NUMBER = 928
*****
    Extrude 2-D WP Interior into 3-D Space
    (V's 1 - 32)
        Bottom WP Area

DRAG AREAS
    1, 2, 3, 4,
    ALONG LINES
    35, 36,

DRAG AREAS

```


5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
9, 10, 11, 12,
ALONG LINES
35, 36,

DRAG AREAS
13, 14,
ALONG LINES
35, 36,

DRAG AREAS
15, 16,
ALONG LINES
35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 9.340 TIME= 09:26:57
Unmeshed line 178 is merged into meshed line 83.
LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 9.340 TIME= 09:26:57
Unmeshed line 196 is merged into meshed line 84.
LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 9.340 TIME= 09:26:57
Unmeshed line 218 is merged into meshed line 85.
LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 9.340 TIME= 09:26:57
Unmeshed line 221 is merged into meshed line 86.

LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 9.340 TIME= 09:26:57

Unmeshed line 244 is merged into meshed line 87.

LINE 88 USED FOR LINE(S) 247

*** WARNING *** CP= 9.350 TIME= 09:26:57

Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119

LINE 95 USED FOR LINE(S) 118

LINE 96 USED FOR LINE(S) 120

LINE 99 USED FOR LINE(S) 127

LINE 100 USED FOR LINE(S) 126

LINE 102 USED FOR LINE(S) 132

LINE 103 USED FOR LINE(S) 131

LINE 104 USED FOR LINE(S) 136

LINE 107 USED FOR LINE(S) 139

LINE 108 USED FOR LINE(S) 138

LINE 109 USED FOR LINE(S) 140

LINE 112 USED FOR LINE(S) 147

LINE 113 USED FOR LINE(S) 146

LINE 115 USED FOR LINE(S) 152

LINE 116 USED FOR LINE(S) 151

LINE 117 USED FOR LINE(S) 156

LINE 122 USED FOR LINE(S) 169

LINE 123 USED FOR LINE(S) 170

LINE 124 USED FOR LINE(S) 162

LINE 128 USED FOR LINE(S) 163

LINE 129 USED FOR LINE(S) 164

LINE 133 USED FOR LINE(S) 177

LINE 134 USED FOR LINE(S) 174

LINE 137 USED FOR LINE(S) 175

LINE 142 USED FOR LINE(S) 189

LINE 143 USED FOR LINE(S) 190

LINE 144 USED FOR LINE(S) 182

LINE 148 USED FOR LINE(S) 183

LINE 149 USED FOR LINE(S) 184

LINE 153 USED FOR LINE(S) 197

LINE 154 USED FOR LINE(S) 194

LINE 157 USED FOR LINE(S) 195

LINE 160 USED FOR LINE(S) 199

LINE 166 USED FOR LINE(S) 198

LINE 167 USED FOR LINE(S) 200

LINE 171 USED FOR LINE(S) 206

LINE 172 USED FOR LINE(S) 207

LINE 180 USED FOR LINE(S) 212

LINE 186 USED FOR LINE(S) 211

LINE 187 USED FOR LINE(S) 213

LINE 191 USED FOR LINE(S) 219

LINE 192 USED FOR LINE(S) 220

LINE 202 USED FOR LINE(S) 226

LINE 203 USED FOR LINE(S) 224

LINE 204 USED FOR LINE(S) 225

LINE 209 USED FOR LINE(S) 233

LINE 210 USED FOR LINE(S) 232

LINE 215 USED FOR LINE(S) 239

LINE 216 USED FOR LINE(S) 237

LINE 217 USED FOR LINE(S) 238

LINE 222 USED FOR LINE(S) 246

LINE 223 USED FOR LINE(S) 245

AREA 34 USED FOR AREA(S) 57

AREA 38 USED FOR AREA(S) 62

AREA 41 USED FOR AREA(S) 66

AREA 43 USED FOR AREA(S) 70

AREA 46 USED FOR AREA(S) 73

AREA 50 USED FOR AREA(S) 78

AREA 53 USED FOR AREA(S) 82

AREA 55 USED FOR AREA(S) 86

AREA 59 USED FOR AREA(S) 96

AREA 63 USED FOR AREA(S) 91

AREA 67 USED FOR AREA(S) 103
 AREA 71 USED FOR AREA(S) 100
 AREA 75 USED FOR AREA(S) 112
 AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153

(V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 25 USED FOR KEYPOINT(S) 131
 KEYPOINT 26 USED FOR KEYPOINT(S) 139
 KEYPOINT 27 USED FOR KEYPOINT(S) 147
 KEYPOINT 50 USED FOR KEYPOINT(S) 148 167
 KEYPOINT 51 USED FOR KEYPOINT(S) 153 171
 KEYPOINT 52 USED FOR KEYPOINT(S) 170 185
 KEYPOINT 53 USED FOR KEYPOINT(S) 172 189
 KEYPOINT 54 USED FOR KEYPOINT(S) 188
 KEYPOINT 55 USED FOR KEYPOINT(S) 190
 KEYPOINT 73 USED FOR KEYPOINT(S) 98
 KEYPOINT 76 USED FOR KEYPOINT(S) 99
 KEYPOINT 78 USED FOR KEYPOINT(S) 103
 KEYPOINT 80 USED FOR KEYPOINT(S) 105
 KEYPOINT 84 USED FOR KEYPOINT(S) 110
 KEYPOINT 86 USED FOR KEYPOINT(S) 111
 KEYPOINT 88 USED FOR KEYPOINT(S) 115
 KEYPOINT 90 USED FOR KEYPOINT(S) 117
 KEYPOINT 93 USED FOR KEYPOINT(S) 122
 KEYPOINT 95 USED FOR KEYPOINT(S) 123
 KEYPOINT 96 USED FOR KEYPOINT(S) 127
 KEYPOINT 97 USED FOR KEYPOINT(S) 129
 KEYPOINT 101 USED FOR KEYPOINT(S) 136
 KEYPOINT 102 USED FOR KEYPOINT(S) 133
 KEYPOINT 104 USED FOR KEYPOINT(S) 134
 KEYPOINT 108 USED FOR KEYPOINT(S) 138
 KEYPOINT 113 USED FOR KEYPOINT(S) 144
 KEYPOINT 114 USED FOR KEYPOINT(S) 141

KEYPOINT 116 USED FOR KEYPOINT(S) 142
 KEYPOINT 120 USED FOR KEYPOINT(S) 146
 KEYPOINT 125 USED FOR KEYPOINT(S) 152
 KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 13.550 TIME= 09:27:01
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 13.550 TIME= 09:27:01
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 13.550 TIME= 09:27:01
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 13.550 TIME= 09:27:01
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 13.560 TIME= 09:27:01
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 13.560 TIME= 09:27:01
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282

LINE	200	USED FOR LINE(S)	287
LINE	213	USED FOR LINE(S)	300
LINE	218	USED FOR LINE(S)	301
LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231

AREA 183 USED FOR AREA(S) 228
 AREA 187 USED FOR AREA(S) 240
 AREA 191 USED FOR AREA(S) 235
 AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)

Bottom WP Area

DRAG AREAS

30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310

(V's 90 - 101)

Top WP Area

DRAG AREAS

27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846

MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS
IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 960
MAXIMUM ELEMENT NUMBER = 1168
SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1017
MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 18.280 TIME= 09:27:06
Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 18.280 TIME= 09:27:06
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 18.320 TIME= 09:27:06
Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 18.320 TIME= 09:27:06
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 18.430 TIME= 09:27:06
Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 18.430 TIME= 09:27:06
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 18.530 TIME= 09:27:06
Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 18.530 TIME= 09:27:06
Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
MAXIMUM NODE NUMBER = 1081
MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1195
MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 20.050 TIME= 09:27:08
Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.050 TIME= 09:27:08
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 20.090 TIME= 09:27:08
Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.090 TIME= 09:27:08
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 20.170 TIME= 09:27:08
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.170 TIME= 09:27:08
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 20.260 TIME= 09:27:08
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.260 TIME= 09:27:08
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 20.410 TIME= 09:27:08
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.410 TIME= 09:27:08
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 20.450 TIME= 09:27:08
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.460 TIME= 09:27:08
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 20.560 TIME= 09:27:08
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.560 TIME= 09:27:08
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 20.660 TIME= 09:27:08
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 20.660 TIME= 09:27:08
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 21.300 TIME= 09:27:09
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 21.300 TIME= 09:27:09
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 21.350 TIME= 09:27:09
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 21.350 TIME= 09:27:09
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 21.480 TIME= 09:27:09
Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 21.480 TIME= 09:27:09
Worst aspect ratio is 49.833333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 22.150 TIME= 09:27:10
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.150 TIME= 09:27:10
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 22.200 TIME= 09:27:10
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.200 TIME= 09:27:10
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 22.300 TIME= 09:27:10
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.300 TIME= 09:27:10
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 22.440 TIME= 09:27:10
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.450 TIME= 09:27:10
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 22.490 TIME= 09:27:10
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.490 TIME= 09:27:10
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 22.600 TIME= 09:27:10
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 22.600 TIME= 09:27:10
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
 MAXIMUM NODE NUMBER = 1867
 MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
 IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
 MAXIMUM NODE NUMBER = 2077
 MAXIMUM ELEMENT NUMBER = 1888

Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 2145
 MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
 IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
 MAXIMUM NODE NUMBER = 2231
 MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
 IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
 MAXIMUM NODE NUMBER = 2267
 MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
 IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 2497
 MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
 IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
 MAXIMUM NODE NUMBER = 2587
 MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
 IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 2905
 MAXIMUM ELEMENT NUMBER = 2528

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
 AND NO RADIATION TRANSFER IN THESE SPACES
 He/Air in Pour Can.

ESHAPE,2,
 MAT, 7,
 TYPE,2,
 VMESH, 37, 40,1

He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
 MAT, 7,

TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 29.450 TIME= 09:27:17
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.460 TIME= 09:27:17
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.460 TIME= 09:27:17
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.470 TIME= 09:27:17
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.470 TIME= 09:27:17
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.480 TIME= 09:27:17
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.480 TIME= 09:27:17
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.480 TIME= 09:27:17
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.500 TIME= 09:27:17
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.500 TIME= 09:27:17
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.510 TIME= 09:27:17
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.510 TIME= 09:27:17
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.540 TIME= 09:27:18
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.550 TIME= 09:27:18
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only elements are deleted.

*** NOTE *** CP= 29.570 TIME= 09:27:18
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only elements are deleted.

elements are deleted.

*** NOTE *** CP= 29.580 TIME= 09:27:18
Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373

NODE 557 USED FOR NODES 1507
 NODE 654 USED FOR NODES 1378
 NODE 549 USED FOR NODES 1506
 NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.980 TIME= 09:27:19
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

 Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
SET IS FROM 1 TO 101 IN STEPS OF 1
DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 3488	USED FOR NODES	5848
NODE 4099	USED FOR NODES	6471
NODE 4100	USED FOR NODES	6472
NODE 4539	USED FOR NODES	6911
NODE 4540	USED FOR NODES	6912
NODE 4037	USED FOR NODES	6397
NODE 5238	USED FOR NODES	7610
NODE 5239	USED FOR NODES	7611
NODE 4011	USED FOR NODES	6363
NODE 4012	USED FOR NODES	6364
NODE 3446	USED FOR NODES	5782
NODE 4920	USED FOR NODES	7292
NODE 4656	USED FOR NODES	7030
NODE 4657	USED FOR NODES	7031
NODE 4974	USED FOR NODES	7346
NODE 4345	USED FOR NODES	6717
NODE 4346	USED FOR NODES	6718
NODE 3448	USED FOR NODES	5786
NODE 3449	USED FOR NODES	5787
NODE 3450	USED FOR NODES	5788
NODE 4658	USED FOR NODES	7032
NODE 3975	USED FOR NODES	6327
NODE 3976	USED FOR NODES	6328
NODE 4921	USED FOR NODES	7293
NODE 4975	USED FOR NODES	7347
NODE 4660	USED FOR NODES	7055
NODE 3453	USED FOR NODES	5801
NODE 3452	USED FOR NODES	5800
NODE 4102	USED FOR NODES	6488
NODE 4014	USED FOR NODES	6372
NODE 4923	USED FOR NODES	7309
NODE 3978	USED FOR NODES	6336
NODE 4348	USED FOR NODES	6734
NODE 4541	USED FOR NODES	6927
NODE 4013	USED FOR NODES	6371
NODE 5240	USED FOR NODES	7626
NODE 3447	USED FOR NODES	5798
NODE 4038	USED FOR NODES	6401
NODE 4976	USED FOR NODES	7362
NODE 4659	USED FOR NODES	7054
NODE 4347	USED FOR NODES	6733
NODE 3489	USED FOR NODES	5852
NODE 3451	USED FOR NODES	5799
NODE 3977	USED FOR NODES	6335
NODE 4977	USED FOR NODES	7363
NODE 4101	USED FOR NODES	6487
NODE 4922	USED FOR NODES	7308
NODE 4661	USED FOR NODES	7056
NODE 5241	USED FOR NODES	7627
NODE 4542	USED FOR NODES	6928
NODE 3350	USED FOR NODES	5672
NODE 4603	USED FOR NODES	6977
NODE 5195	USED FOR NODES	7567
NODE 3398	USED FOR NODES	5754
NODE 4064	USED FOR NODES	6436
NODE 4884	USED FOR NODES	7256

NODE	3947	USED	FOR	NODES	6303
NODE	4885	USED	FOR	NODES	7257
NODE	3347	USED	FOR	NODES	5667
NODE	3858	USED	FOR	NODES	6202
NODE	4503	USED	FOR	NODES	6875
NODE	4504	USED	FOR	NODES	6876
NODE	4063	USED	FOR	NODES	6435
NODE	4958	USED	FOR	NODES	7324
NODE	4966	USED	FOR	NODES	7325
NODE	3859	USED	FOR	NODES	6203
NODE	4602	USED	FOR	NODES	6976
NODE	4309	USED	FOR	NODES	6681
NODE	4310	USED	FOR	NODES	6682
NODE	3349	USED	FOR	NODES	5671
NODE	5194	USED	FOR	NODES	7566
NODE	3912	USED	FOR	NODES	6256
NODE	3913	USED	FOR	NODES	6257
NODE	3351	USED	FOR	NODES	5673
NODE	4604	USED	FOR	NODES	6978
NODE	3354	USED	FOR	NODES	5686
NODE	4606	USED	FOR	NODES	7001
NODE	3861	USED	FOR	NODES	6211
NODE	4312	USED	FOR	NODES	6698
NODE	4887	USED	FOR	NODES	7273
NODE	4066	USED	FOR	NODES	6452
NODE	3353	USED	FOR	NODES	5685
NODE	5197	USED	FOR	NODES	7584
NODE	5196	USED	FOR	NODES	7583
NODE	4505	USED	FOR	NODES	6891
NODE	3860	USED	FOR	NODES	6210
NODE	3948	USED	FOR	NODES	6307
NODE	4886	USED	FOR	NODES	7272
NODE	3399	USED	FOR	NODES	5758
NODE	4506	USED	FOR	NODES	6892
NODE	3348	USED	FOR	NODES	5683
NODE	4311	USED	FOR	NODES	6697
NODE	4605	USED	FOR	NODES	7000
NODE	4065	USED	FOR	NODES	6451
NODE	4607	USED	FOR	NODES	7002
NODE	3914	USED	FOR	NODES	6264
NODE	3352	USED	FOR	NODES	5684
NODE	5193	USED	FOR	NODES	7582
NODE	3915	USED	FOR	NODES	6265
NODE	4045	USED	FOR	NODES	6415
NODE	3943	USED	FOR	NODES	6297
NODE	4736	USED	FOR	NODES	7086
NODE	4737	USED	FOR	NODES	7087
NODE	4400	USED	FOR	NODES	6750
NODE	4575	USED	FOR	NODES	6946
NODE	4576	USED	FOR	NODES	6954
NODE	4577	USED	FOR	NODES	6955
NODE	4161	USED	FOR	NODES	6511
NODE	4399	USED	FOR	NODES	6749
NODE	4046	USED	FOR	NODES	6423
NODE	3331	USED	FOR	NODES	5639
NODE	3394	USED	FOR	NODES	5748
NODE	4162	USED	FOR	NODES	6512
NODE	3850	USED	FOR	NODES	6190
NODE	3335	USED	FOR	NODES	5647
NODE	3851	USED	FOR	NODES	6194
NODE	3336	USED	FOR	NODES	5651
NODE	5037	USED	FOR	NODES	7379
NODE	3337	USED	FOR	NODES	5652
NODE	3904	USED	FOR	NODES	6244
NODE	5045	USED	FOR	NODES	7387
NODE	5046	USED	FOR	NODES	7388
NODE	3905	USED	FOR	NODES	6248
NODE	5075	USED	FOR	NODES	7404
NODE	4752	USED	FOR	NODES	7085
NODE	4759	USED	FOR	NODES	7095

NODE	4184	USED FOR NODES	6520
NODE	4415	USED FOR NODES	6758
NODE	5068	USED FOR NODES	7396
NODE	4177	USED FOR NODES	6510
NODE	4422	USED FOR NODES	6766
NODE	5061	USED FOR NODES	7386
NODE	4766	USED FOR NODES	7103
NODE	4191	USED FOR NODES	6528
NODE	5069	USED FOR NODES	7395
NODE	4416	USED FOR NODES	6757
NODE	4753	USED FOR NODES	7084
NODE	4185	USED FOR NODES	6519
NODE	4178	USED FOR NODES	6509
NODE	4760	USED FOR NODES	7094
NODE	5062	USED FOR NODES	7385
NODE	4767	USED FOR NODES	7102
NODE	5076	USED FOR NODES	7403
NODE	4423	USED FOR NODES	6765
NODE	4192	USED FOR NODES	6527
NODE	4193	USED FOR NODES	6526
NODE	4768	USED FOR NODES	7101
NODE	4761	USED FOR NODES	7093
NODE	5070	USED FOR NODES	7394
NODE	4417	USED FOR NODES	6756
NODE	4186	USED FOR NODES	6518
NODE	5063	USED FOR NODES	7384
NODE	4179	USED FOR NODES	6508
NODE	4754	USED FOR NODES	7083
NODE	5077	USED FOR NODES	7402
NODE	4424	USED FOR NODES	6764
NODE	5078	USED FOR NODES	7401
NODE	4755	USED FOR NODES	7082
NODE	4180	USED FOR NODES	6507
NODE	4187	USED FOR NODES	6517
NODE	4194	USED FOR NODES	6525
NODE	4418	USED FOR NODES	6755
NODE	4762	USED FOR NODES	7092
NODE	5064	USED FOR NODES	7383
NODE	4425	USED FOR NODES	6763
NODE	4769	USED FOR NODES	7100
NODE	5071	USED FOR NODES	7393
NODE	4756	USED FOR NODES	7081
NODE	4763	USED FOR NODES	7091
NODE	5065	USED FOR NODES	7382
NODE	5072	USED FOR NODES	7392
NODE	4181	USED FOR NODES	6506
NODE	4188	USED FOR NODES	6516
NODE	4419	USED FOR NODES	6754
NODE	5079	USED FOR NODES	7400
NODE	4770	USED FOR NODES	7099
NODE	4195	USED FOR NODES	6524
NODE	4426	USED FOR NODES	6762
NODE	4189	USED FOR NODES	6515
NODE	4764	USED FOR NODES	7090
NODE	4757	USED FOR NODES	7080
NODE	4420	USED FOR NODES	6753
NODE	4182	USED FOR NODES	6505
NODE	5073	USED FOR NODES	7391
NODE	5066	USED FOR NODES	7381
NODE	5080	USED FOR NODES	7399
NODE	4196	USED FOR NODES	6523
NODE	4771	USED FOR NODES	7098
NODE	4427	USED FOR NODES	6761
NODE	4421	USED FOR NODES	6752
NODE	4758	USED FOR NODES	7079
NODE	4190	USED FOR NODES	6514
NODE	5074	USED FOR NODES	7390
NODE	5067	USED FOR NODES	7380
NODE	4197	USED FOR NODES	6522
NODE	4765	USED FOR NODES	7089

NODE	5081	USED FOR NODES	7398
NODE	4183	USED FOR NODES	6504
NODE	4772	USED FOR NODES	7097
NODE	4428	USED FOR NODES	6760
NODE	6379	USED FOR NODES	8731
NODE	7342	USED FOR NODES	9714
NODE	7343	USED FOR NODES	9715
NODE	6468	USED FOR NODES	8840
NODE	6908	USED FOR NODES	9280
NODE	6343	USED FOR NODES	8695
NODE	6344	USED FOR NODES	8696
NODE	6380	USED FOR NODES	8732
NODE	5817	USED FOR NODES	8155
NODE	6467	USED FOR NODES	8839
NODE	5814	USED FOR NODES	8150
NODE	5818	USED FOR NODES	8156
NODE	5816	USED FOR NODES	8154
NODE	6713	USED FOR NODES	9085
NODE	6714	USED FOR NODES	9086
NODE	7024	USED FOR NODES	9398
NODE	5856	USED FOR NODES	8216
NODE	7606	USED FOR NODES	9978
NODE	7607	USED FOR NODES	9979
NODE	6907	USED FOR NODES	9279
NODE	6405	USED FOR NODES	8765
NODE	7025	USED FOR NODES	9399
NODE	7026	USED FOR NODES	9400
NODE	7288	USED FOR NODES	9660
NODE	7289	USED FOR NODES	9661
NODE	5821	USED FOR NODES	8169
NODE	5820	USED FOR NODES	8168
NODE	7028	USED FOR NODES	9423
NODE	6470	USED FOR NODES	8856
NODE	6346	USED FOR NODES	8704
NODE	6382	USED FOR NODES	8740
NODE	6716	USED FOR NODES	9102
NODE	7291	USED FOR NODES	9677
NODE	7608	USED FOR NODES	9994
NODE	6715	USED FOR NODES	9101
NODE	6909	USED FOR NODES	9295
NODE	5819	USED FOR NODES	8167
NODE	7290	USED FOR NODES	9676
NODE	5857	USED FOR NODES	8220
NODE	6469	USED FOR NODES	8855
NODE	6381	USED FOR NODES	8739
NODE	6406	USED FOR NODES	8769
NODE	7344	USED FOR NODES	9730
NODE	6345	USED FOR NODES	8703
NODE	7027	USED FOR NODES	9422
NODE	5815	USED FOR NODES	8166
NODE	7345	USED FOR NODES	9731
NODE	7029	USED FOR NODES	9424
NODE	7609	USED FOR NODES	9995
NODE	6910	USED FOR NODES	9296
NODE	5718	USED FOR NODES	8040
NODE	6971	USED FOR NODES	9345
NODE	6677	USED FOR NODES	9049
NODE	7252	USED FOR NODES	9624
NODE	5719	USED FOR NODES	8041
NODE	6678	USED FOR NODES	9050
NODE	6970	USED FOR NODES	9344
NODE	7334	USED FOR NODES	9693
NODE	6281	USED FOR NODES	8625
NODE	6972	USED FOR NODES	9346
NODE	7253	USED FOR NODES	9625
NODE	7562	USED FOR NODES	9934
NODE	5715	USED FOR NODES	8035
NODE	5766	USED FOR NODES	8122
NODE	6315	USED FOR NODES	8671
NODE	6432	USED FOR NODES	8804

NODE	6226	USED FOR NODES	8570
NODE	6227	USED FOR NODES	8571
NODE	6871	USED FOR NODES	9243
NODE	7326	USED FOR NODES	9692
NODE	6872	USED FOR NODES	9244
NODE	7563	USED FOR NODES	9935
NODE	6431	USED FOR NODES	8803
NODE	5717	USED FOR NODES	8039
NODE	6280	USED FOR NODES	8624
NODE	6974	USED FOR NODES	9369
NODE	5722	USED FOR NODES	8054
NODE	5720	USED FOR NODES	8052
NODE	7565	USED FOR NODES	9952
NODE	6679	USED FOR NODES	9065
NODE	6282	USED FOR NODES	8632
NODE	7564	USED FOR NODES	9951
NODE	7254	USED FOR NODES	9640
NODE	6873	USED FOR NODES	9259
NODE	6973	USED FOR NODES	9368
NODE	6433	USED FOR NODES	8819
NODE	6316	USED FOR NODES	8675
NODE	6434	USED FOR NODES	8820
NODE	6229	USED FOR NODES	8579
NODE	5767	USED FOR NODES	8126
NODE	6228	USED FOR NODES	8578
NODE	6874	USED FOR NODES	9260
NODE	7561	USED FOR NODES	9950
NODE	5721	USED FOR NODES	8053
NODE	6975	USED FOR NODES	9370
NODE	7255	USED FOR NODES	9641
NODE	5716	USED FOR NODES	8051
NODE	6680	USED FOR NODES	9066
NODE	6283	USED FOR NODES	8633
NODE	5762	USED FOR NODES	8116
NODE	6413	USED FOR NODES	8783
NODE	6530	USED FOR NODES	8880
NODE	6944	USED FOR NODES	9322
NODE	7104	USED FOR NODES	9454
NODE	5704	USED FOR NODES	8019
NODE	6945	USED FOR NODES	9323
NODE	7105	USED FOR NODES	9455
NODE	6272	USED FOR NODES	8612
NODE	5699	USED FOR NODES	8007
NODE	5703	USED FOR NODES	8015
NODE	6529	USED FOR NODES	8879
NODE	6414	USED FOR NODES	8791
NODE	7405	USED FOR NODES	9747
NODE	7414	USED FOR NODES	9756
NODE	6311	USED FOR NODES	8665
NODE	6767	USED FOR NODES	9117
NODE	6768	USED FOR NODES	9118
NODE	5705	USED FOR NODES	8020
NODE	7413	USED FOR NODES	9755
NODE	6943	USED FOR NODES	9314
NODE	6273	USED FOR NODES	8616
NODE	6218	USED FOR NODES	8558
NODE	6219	USED FOR NODES	8562
NODE	6783	USED FOR NODES	9126
NODE	6545	USED FOR NODES	8878
NODE	7443	USED FOR NODES	9772
NODE	7429	USED FOR NODES	9754
NODE	6552	USED FOR NODES	8888
NODE	7127	USED FOR NODES	9463
NODE	6790	USED FOR NODES	9134
NODE	7120	USED FOR NODES	9453
NODE	7436	USED FOR NODES	9764
NODE	7134	USED FOR NODES	9471
NODE	6559	USED FOR NODES	8896
NODE	7430	USED FOR NODES	9753
NODE	7121	USED FOR NODES	9452

NODE	7128	USED	FOR	NODES	9462
NODE	6546	USED	FOR	NODES	8877
NODE	6553	USED	FOR	NODES	8887
NODE	7437	USED	FOR	NODES	9763
NODE	6784	USED	FOR	NODES	9125
NODE	7444	USED	FOR	NODES	9771
NODE	6560	USED	FOR	NODES	8895
NODE	7135	USED	FOR	NODES	9470
NODE	6791	USED	FOR	NODES	9133
NODE	6554	USED	FOR	NODES	8886
NODE	7122	USED	FOR	NODES	9451
NODE	7438	USED	FOR	NODES	9762
NODE	6561	USED	FOR	NODES	8894
NODE	6785	USED	FOR	NODES	9124
NODE	7129	USED	FOR	NODES	9461
NODE	7431	USED	FOR	NODES	9752
NODE	7136	USED	FOR	NODES	9469
NODE	6547	USED	FOR	NODES	8876
NODE	7445	USED	FOR	NODES	9770
NODE	6792	USED	FOR	NODES	9132
NODE	6555	USED	FOR	NODES	8885
NODE	6793	USED	FOR	NODES	9131
NODE	7123	USED	FOR	NODES	9450
NODE	7432	USED	FOR	NODES	9751
NODE	6562	USED	FOR	NODES	8893
NODE	6548	USED	FOR	NODES	8875
NODE	7446	USED	FOR	NODES	9769
NODE	7137	USED	FOR	NODES	9468
NODE	7439	USED	FOR	NODES	9761
NODE	6786	USED	FOR	NODES	9123
NODE	7130	USED	FOR	NODES	9460
NODE	2109	USED	FOR	NODES	3419
NODE	2166	USED	FOR	NODES	3959
NODE	2498	USED	FOR	NODES	4662
NODE	2268	USED	FOR	NODES	4349
NODE	2499	USED	FOR	NODES	4663
NODE	2607	USED	FOR	NODES	4979
NODE	2110	USED	FOR	NODES	3420
NODE	2870	USED	FOR	NODES	5242
NODE	2871	USED	FOR	NODES	5243
NODE	2552	USED	FOR	NODES	4924
NODE	2167	USED	FOR	NODES	3960
NODE	2269	USED	FOR	NODES	4350
NODE	2232	USED	FOR	NODES	4103
NODE	2500	USED	FOR	NODES	4664
NODE	2553	USED	FOR	NODES	4925
NODE	2462	USED	FOR	NODES	4543
NODE	2463	USED	FOR	NODES	4544
NODE	2233	USED	FOR	NODES	4104
NODE	2202	USED	FOR	NODES	3995
NODE	2203	USED	FOR	NODES	3996
NODE	2108	USED	FOR	NODES	3418
NODE	2606	USED	FOR	NODES	4978
NODE	2609	USED	FOR	NODES	4995
NODE	2501	USED	FOR	NODES	4686
NODE	2234	USED	FOR	NODES	4119
NODE	2872	USED	FOR	NODES	5258
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NODE	2270	USED	FOR	NODES	4365
NODE	2113	USED	FOR	NODES	3433
NODE	2554	USED	FOR	NODES	4940
NODE	2503	USED	FOR	NODES	4688
NODE	2608	USED	FOR	NODES	4994
NODE	2502	USED	FOR	NODES	4687
NODE	2464	USED	FOR	NODES	4559
NODE	2111	USED	FOR	NODES	3431
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NODE	2555	USED	FOR	NODES	4941
NODE	2873	USED	FOR	NODES	5259

NODE	2235	USED	FOR	NODES	4120
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NODE	2205	USED	FOR	NODES	4004
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NODE	1816	USED	FOR	NODES	4610
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NODE	2042	USED	FOR	NODES	4888
NODE	2826	USED	FOR	NODES	5198
NODE	2827	USED	FOR	NODES	5199
NODE	1432	USED	FOR	NODES	3834
NODE	1433	USED	FOR	NODES	3835
NODE	2590	USED	FOR	NODES	4956
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NODE	2043	USED	FOR	NODES	4889
NODE	2598	USED	FOR	NODES	4957
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NODE	1541	USED	FOR	NODES	4067
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NODE	2426	USED	FOR	NODES	4507
NODE	1353	USED	FOR	NODES	3317
NODE	1435	USED	FOR	NODES	3843
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NODE	1489	USED	FOR	NODES	3897
NODE	2044	USED	FOR	NODES	4904
NODE	1488	USED	FOR	NODES	3896
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NODE	1818	USED	FOR	NODES	4633
NODE	1819	USED	FOR	NODES	4634
NODE	1434	USED	FOR	NODES	3842
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NODE	1544	USED	FOR	NODES	4084
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NODE	1352	USED	FOR	NODES	3316
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NODE	2323	USED	FOR	NODES	4382
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NODE	7440	USED FOR NODES	9760
NODE	6794	USED FOR NODES	9130
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NODE	7138	USED FOR NODES	9467
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NODE	2340	USED FOR NODES	4388
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NODE	7125	USED FOR NODES	9448
NODE	7132	USED FOR NODES	9458
NODE	6795	USED FOR NODES	9129
NODE	7434	USED FOR NODES	9749
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NODE	6788	USED FOR NODES	9121
NODE	7139	USED FOR NODES	9466
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NODE	2341	USED FOR NODES	4387
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NODE	2342	USED FOR NODES	4386

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NODE	2699	USED FOR NODES	5012		
NODE	1639	USED FOR NODES	4154		
NODE	2713	USED FOR NODES	5030		
NODE	1930	USED FOR NODES	4729		
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NODE	2653	USED FOR NODES	5021	7389	9757
NODE	117	USED FOR NODES	3315		
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NODE	1878	USED FOR NODES	4720	7088	9456
NODE	1886	USED FOR NODES	4728	7096	9464
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NODE	588	USED FOR NODES	3380		
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NODE	2642	USED FOR NODES	5010	7378	9746
NODE	2661	USED FOR NODES	5029	7397	9765
NODE	491	USED FOR NODES	3929		
NODE	134	USED FOR NODES	3414		
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NODE	1587	USED FOR NODES	4145	6513	8881
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NODE	135	USED FOR NODES	3430		
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NODE	562	USED FOR NODES	4033		
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NODE	92	USED FOR NODES	3271		
NODE	641	USED FOR NODES	3390		
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NODE	2644	USED FOR NODES	9803		
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NODE	1578	USED FOR NODES	8919		

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NODE	1579	USED	FOR	NODES	8918
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NODE	1870	USED	FOR	NODES	9493
NODE	1589	USED	FOR	NODES	8925
NODE	2308	USED	FOR	NODES	9156
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NODE	2646	USED	FOR	NODES	9801
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NODE	2317	USED	FOR	NODES	9162
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NODE	1580	USED	FOR	NODES	8917
NODE	1598	USED	FOR	NODES	8931
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NODE	2657	USED	FOR	NODES	9807
NODE	2665	USED	FOR	NODES	9814
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NODE	1591	USED	FOR	NODES	8923
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NODE	1599	USED	FOR	NODES	8930
NODE	1890	USED	FOR	NODES	9505
NODE	2310	USED	FOR	NODES	9154
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NODE	2319	USED	FOR	NODES	9160
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NODE	1891	USED	FOR	NODES	9504
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NODE	1884	USED	FOR	NODES	9496
NODE	2649	USED	FOR	NODES	9798
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NODE	1892	USED	FOR	NODES	9503
NODE	1601	USED	FOR	NODES	8928
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NODE	1583	USED	FOR	NODES	8914
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NODE	1874	USED	FOR	NODES	9489
NODE	1893	USED	FOR	NODES	9502
NODE	1602	USED	FOR	NODES	8927
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NODE	2313	USED	FOR	NODES	9151
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NODE	1584	USED	FOR	NODES	8913
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NODE	1594	USED	FOR	NODES	8920
NODE	2321	USED	FOR	NODES	9158

NODE	2650	USED	FOR	NODES	9797
NODE	2660	USED	FOR	NODES	9804
NODE	1295	USED	FOR	NODES	8071
NODE	1450	USED	FOR	NODES	8640
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NODE	1586	USED	FOR	NODES	8898
NODE	1299	USED	FOR	NODES	8072
NODE	1877	USED	FOR	NODES	9473
NODE	1300	USED	FOR	NODES	8073
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NODE	1798	USED	FOR	NODES	9312
NODE	1799	USED	FOR	NODES	9313
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NODE	1533	USED	FOR	NODES	8782
NODE	2305	USED	FOR	NODES	9136
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NODE	1846	USED	FOR	NODES	9343
NODE	1417	USED	FOR	NODES	8597
NODE	1845	USED	FOR	NODES	9342
NODE	2063	USED	FOR	NODES	9623
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NODE	650	USED	FOR	NODES	8135
NODE	1416	USED	FOR	NODES	8596
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NODE	1470	USED	FOR	NODES	8650
NODE	1325	USED	FOR	NODES	8088
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NODE	2062	USED	FOR	NODES	9622
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NODE	2447	USED	FOR	NODES	9242
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NODE	1327	USED	FOR	NODES	8090
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NODE	545	USED	FOR	NODES	8683
NODE	1546	USED	FOR	NODES	8800
NODE	642	USED	FOR	NODES	8134
NODE	1313	USED	FOR	NODES	8085
NODE	2046	USED	FOR	NODES	9620
NODE	2047	USED	FOR	NODES	9621
NODE	1408	USED	FOR	NODES	8594
NODE	1409	USED	FOR	NODES	8595
NODE	1462	USED	FOR	NODES	8648
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NODE	2588	USED	FOR	NODES	9694
NODE	2431	USED	FOR	NODES	9240
NODE	2830	USED	FOR	NODES	9930
NODE	1315	USED	FOR	NODES	8087
NODE	1756	USED	FOR	NODES	9046
NODE	1820	USED	FOR	NODES	9338
NODE	1822	USED	FOR	NODES	9340

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NODE	2530	USED FOR NODES	9397
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NODE	2483	USED FOR NODES	9278
NODE	2891	USED FOR NODES	9977
NODE	2098	USED FOR NODES	8189
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NODE	2159	USED FOR NODES	8714
NODE	2253	USED FOR NODES	8838
NODE	2572	USED FOR NODES	9658
NODE	2158	USED FOR NODES	8713
NODE	2626	USED FOR NODES	9712
NODE	668	USED FOR NODES	8225
NODE	2096	USED FOR NODES	8187
NODE	2890	USED FOR NODES	9976
NODE	571	USED FOR NODES	8774
NODE	130	USED FOR NODES	8183
NODE	2482	USED FOR NODES	9277
NODE	2252	USED FOR NODES	8837
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NODE	2528	USED FOR NODES	9395
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NODE	2097	USED FOR NODES	8188
NODE	2086	USED FOR NODES	8186
NODE	2151	USED FOR NODES	8712
NODE	2187	USED FOR NODES	8748
NODE	2150	USED FOR NODES	8711
NODE	2084	USED FOR NODES	8184
NODE	2186	USED FOR NODES	8747
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NODE	2467	USED FOR NODES	9276
NODE	2504	USED FOR NODES	9392
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NODE	2272	USED FOR NODES	9081
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NODE	126	USED FOR NODES	8182
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NODE	2611	USED FOR NODES	9711
NODE	2506	USED FOR NODES	9394
NODE	2556	USED FOR NODES	9656

*** WARNING ***

CP= 63.700 TIME= 09:27:52

Same node numbers associated with more than one solid model entity.

Future mesh clearing operations could produce unexpected results.

NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	1	USED FOR KEYPOINT(S)	209	372	535
KEYPOINT	11	USED FOR KEYPOINT(S)	541		
KEYPOINT	13	USED FOR KEYPOINT(S)	210		
KEYPOINT	14	USED FOR KEYPOINT(S)	551		
KEYPOINT	16	USED FOR KEYPOINT(S)	223		
KEYPOINT	17	USED FOR KEYPOINT(S)	560		
KEYPOINT	19	USED FOR KEYPOINT(S)	232		
KEYPOINT	20	USED FOR KEYPOINT(S)	212	375	538

KEYPOINT	21 USED FOR KEYPOINT(S)	218	381	544
KEYPOINT	22 USED FOR KEYPOINT(S)	297	460	623
KEYPOINT	23 USED FOR KEYPOINT(S)	304	467	630
KEYPOINT	24 USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25 USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26 USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27 USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28 USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29 USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30 USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31 USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50 USED FOR KEYPOINT(S)	603		
KEYPOINT	51 USED FOR KEYPOINT(S)	274		
KEYPOINT	52 USED FOR KEYPOINT(S)	612		
KEYPOINT	53 USED FOR KEYPOINT(S)	285		
KEYPOINT	54 USED FOR KEYPOINT(S)	621		
KEYPOINT	55 USED FOR KEYPOINT(S)	294		
KEYPOINT	56 USED FOR KEYPOINT(S)	546		
KEYPOINT	57 USED FOR KEYPOINT(S)	217		
KEYPOINT	58 USED FOR KEYPOINT(S)	555		
KEYPOINT	59 USED FOR KEYPOINT(S)	228		
KEYPOINT	60 USED FOR KEYPOINT(S)	564		
KEYPOINT	61 USED FOR KEYPOINT(S)	237		
KEYPOINT	89 USED FOR KEYPOINT(S)	542		
KEYPOINT	94 USED FOR KEYPOINT(S)	211		
KEYPOINT	99 USED FOR KEYPOINT(S)	624		
KEYPOINT	103 USED FOR KEYPOINT(S)	296		
KEYPOINT	105 USED FOR KEYPOINT(S)	300		
KEYPOINT	107 USED FOR KEYPOINT(S)	552		
KEYPOINT	109 USED FOR KEYPOINT(S)	224		
KEYPOINT	110 USED FOR KEYPOINT(S)	625		
KEYPOINT	111 USED FOR KEYPOINT(S)	302		
KEYPOINT	115 USED FOR KEYPOINT(S)	627		
KEYPOINT	117 USED FOR KEYPOINT(S)	645		
KEYPOINT	119 USED FOR KEYPOINT(S)	561		
KEYPOINT	121 USED FOR KEYPOINT(S)	233		
KEYPOINT	122 USED FOR KEYPOINT(S)	631		
KEYPOINT	123 USED FOR KEYPOINT(S)	303		
KEYPOINT	127 USED FOR KEYPOINT(S)	307		
KEYPOINT	129 USED FOR KEYPOINT(S)	632		
KEYPOINT	131 USED FOR KEYPOINT(S)	309		
KEYPOINT	132 USED FOR KEYPOINT(S)	595		
KEYPOINT	133 USED FOR KEYPOINT(S)	634		
KEYPOINT	134 USED FOR KEYPOINT(S)	317		
KEYPOINT	136 USED FOR KEYPOINT(S)	638		
KEYPOINT	137 USED FOR KEYPOINT(S)	266		
KEYPOINT	138 USED FOR KEYPOINT(S)	310		
KEYPOINT	139 USED FOR KEYPOINT(S)	314		
KEYPOINT	140 USED FOR KEYPOINT(S)	599		
KEYPOINT	141 USED FOR KEYPOINT(S)	639		
KEYPOINT	142 USED FOR KEYPOINT(S)	316		
KEYPOINT	144 USED FOR KEYPOINT(S)	641		
KEYPOINT	145 USED FOR KEYPOINT(S)	270		
KEYPOINT	146 USED FOR KEYPOINT(S)	321		
KEYPOINT	147 USED FOR KEYPOINT(S)	646		
KEYPOINT	148 USED FOR KEYPOINT(S)	323		
KEYPOINT	149 USED FOR KEYPOINT(S)	648		
KEYPOINT	152 USED FOR KEYPOINT(S)	652		
KEYPOINT	153 USED FOR KEYPOINT(S)	324		
KEYPOINT	154 USED FOR KEYPOINT(S)	328		
KEYPOINT	155 USED FOR KEYPOINT(S)	653		
KEYPOINT	156 USED FOR KEYPOINT(S)	330		
KEYPOINT	158 USED FOR KEYPOINT(S)	606		
KEYPOINT	159 USED FOR KEYPOINT(S)	655		
KEYPOINT	160 USED FOR KEYPOINT(S)	279		
KEYPOINT	162 USED FOR KEYPOINT(S)	659		
KEYPOINT	164 USED FOR KEYPOINT(S)	609		
KEYPOINT	165 USED FOR KEYPOINT(S)	331		
KEYPOINT	166 USED FOR KEYPOINT(S)	282		
KEYPOINT	167 USED FOR KEYPOINT(S)	335		

KEYPOINT	168	USED FOR KEYPOINT(S)	660
KEYPOINT	170	USED FOR KEYPOINT(S)	337
KEYPOINT	171	USED FOR KEYPOINT(S)	662
KEYPOINT	173	USED FOR KEYPOINT(S)	666
KEYPOINT	174	USED FOR KEYPOINT(S)	338
KEYPOINT	176	USED FOR KEYPOINT(S)	615
KEYPOINT	177	USED FOR KEYPOINT(S)	342
KEYPOINT	178	USED FOR KEYPOINT(S)	288
KEYPOINT	179	USED FOR KEYPOINT(S)	667
KEYPOINT	180	USED FOR KEYPOINT(S)	344
KEYPOINT	182	USED FOR KEYPOINT(S)	618
KEYPOINT	183	USED FOR KEYPOINT(S)	669
KEYPOINT	184	USED FOR KEYPOINT(S)	291
KEYPOINT	215	USED FOR KEYPOINT(S)	373
KEYPOINT	216	USED FOR KEYPOINT(S)	374
KEYPOINT	220	USED FOR KEYPOINT(S)	380
KEYPOINT	225	USED FOR KEYPOINT(S)	386
KEYPOINT	226	USED FOR KEYPOINT(S)	387
KEYPOINT	229	USED FOR KEYPOINT(S)	391
KEYPOINT	234	USED FOR KEYPOINT(S)	395
KEYPOINT	235	USED FOR KEYPOINT(S)	396
KEYPOINT	238	USED FOR KEYPOINT(S)	400
KEYPOINT	269	USED FOR KEYPOINT(S)	429
KEYPOINT	273	USED FOR KEYPOINT(S)	433
KEYPOINT	277	USED FOR KEYPOINT(S)	437
KEYPOINT	280	USED FOR KEYPOINT(S)	442
KEYPOINT	283	USED FOR KEYPOINT(S)	445
KEYPOINT	286	USED FOR KEYPOINT(S)	448
KEYPOINT	289	USED FOR KEYPOINT(S)	451
KEYPOINT	292	USED FOR KEYPOINT(S)	454
KEYPOINT	295	USED FOR KEYPOINT(S)	457
KEYPOINT	298	USED FOR KEYPOINT(S)	459
KEYPOINT	299	USED FOR KEYPOINT(S)	463
KEYPOINT	301	USED FOR KEYPOINT(S)	465
KEYPOINT	305	USED FOR KEYPOINT(S)	466
KEYPOINT	306	USED FOR KEYPOINT(S)	470
KEYPOINT	308	USED FOR KEYPOINT(S)	472
KEYPOINT	312	USED FOR KEYPOINT(S)	473
KEYPOINT	313	USED FOR KEYPOINT(S)	477
KEYPOINT	315	USED FOR KEYPOINT(S)	479
KEYPOINT	319	USED FOR KEYPOINT(S)	480
KEYPOINT	320	USED FOR KEYPOINT(S)	484
KEYPOINT	322	USED FOR KEYPOINT(S)	486
KEYPOINT	326	USED FOR KEYPOINT(S)	487
KEYPOINT	327	USED FOR KEYPOINT(S)	491
KEYPOINT	329	USED FOR KEYPOINT(S)	493
KEYPOINT	333	USED FOR KEYPOINT(S)	494
KEYPOINT	334	USED FOR KEYPOINT(S)	498
KEYPOINT	336	USED FOR KEYPOINT(S)	500
KEYPOINT	340	USED FOR KEYPOINT(S)	501
KEYPOINT	341	USED FOR KEYPOINT(S)	505
KEYPOINT	343	USED FOR KEYPOINT(S)	507
KEYPOINT	378	USED FOR KEYPOINT(S)	536
KEYPOINT	379	USED FOR KEYPOINT(S)	537
KEYPOINT	383	USED FOR KEYPOINT(S)	543
KEYPOINT	388	USED FOR KEYPOINT(S)	549
KEYPOINT	389	USED FOR KEYPOINT(S)	550
KEYPOINT	392	USED FOR KEYPOINT(S)	554
KEYPOINT	397	USED FOR KEYPOINT(S)	558
KEYPOINT	398	USED FOR KEYPOINT(S)	559
KEYPOINT	401	USED FOR KEYPOINT(S)	563
KEYPOINT	432	USED FOR KEYPOINT(S)	592
KEYPOINT	436	USED FOR KEYPOINT(S)	596
KEYPOINT	440	USED FOR KEYPOINT(S)	600
KEYPOINT	443	USED FOR KEYPOINT(S)	605
KEYPOINT	446	USED FOR KEYPOINT(S)	608
KEYPOINT	449	USED FOR KEYPOINT(S)	611
KEYPOINT	452	USED FOR KEYPOINT(S)	614
KEYPOINT	455	USED FOR KEYPOINT(S)	617
KEYPOINT	458	USED FOR KEYPOINT(S)	620

KEYPOINT	461	USED FOR KEYPOINT(S)	622
KEYPOINT	462	USED FOR KEYPOINT(S)	626
KEYPOINT	464	USED FOR KEYPOINT(S)	628
KEYPOINT	468	USED FOR KEYPOINT(S)	629
KEYPOINT	469	USED FOR KEYPOINT(S)	633
KEYPOINT	471	USED FOR KEYPOINT(S)	635
KEYPOINT	475	USED FOR KEYPOINT(S)	636
KEYPOINT	476	USED FOR KEYPOINT(S)	640
KEYPOINT	478	USED FOR KEYPOINT(S)	642
KEYPOINT	482	USED FOR KEYPOINT(S)	643
KEYPOINT	483	USED FOR KEYPOINT(S)	647
KEYPOINT	485	USED FOR KEYPOINT(S)	649
KEYPOINT	489	USED FOR KEYPOINT(S)	650
KEYPOINT	490	USED FOR KEYPOINT(S)	654
KEYPOINT	492	USED FOR KEYPOINT(S)	656
KEYPOINT	496	USED FOR KEYPOINT(S)	657
KEYPOINT	497	USED FOR KEYPOINT(S)	661
KEYPOINT	499	USED FOR KEYPOINT(S)	663
KEYPOINT	503	USED FOR KEYPOINT(S)	664
KEYPOINT	504	USED FOR KEYPOINT(S)	668
KEYPOINT	506	USED FOR KEYPOINT(S)	670
LINE	21	USED FOR LINE(S)	511
LINE	22	USED FOR LINE(S)	1363
LINE	25	USED FOR LINE(S)	1385
LINE	27	USED FOR LINE(S)	549
LINE	30	USED FOR LINE(S)	1406
LINE	32	USED FOR LINE(S)	570
LINE	35	USED FOR LINE(S)	514 931 1348
LINE	36	USED FOR LINE(S)	533 950 1367
LINE	37	USED FOR LINE(S)	746 1163 1580
LINE	38	USED FOR LINE(S)	765 1182 1599
LINE	39	USED FOR LINE(S)	781 1198 1615
LINE	40	USED FOR LINE(S)	662 1079 1496
LINE	41	USED FOR LINE(S)	674 1091 1508
LINE	42	USED FOR LINE(S)	686 1103 1520
LINE	43	USED FOR LINE(S)	797 1214 1631
LINE	44	USED FOR LINE(S)	816 1233 1650
LINE	45	USED FOR LINE(S)	832 1249 1666
LINE	46	USED FOR LINE(S)	848 1265 1682
LINE	74	USED FOR LINE(S)	1529
LINE	75	USED FOR LINE(S)	685
LINE	76	USED FOR LINE(S)	1552
LINE	77	USED FOR LINE(S)	716
LINE	78	USED FOR LINE(S)	1576
LINE	79	USED FOR LINE(S)	740
LINE	83	USED FOR LINE(S)	1376
LINE	84	USED FOR LINE(S)	532
LINE	85	USED FOR LINE(S)	1396
LINE	86	USED FOR LINE(S)	560
LINE	87	USED FOR LINE(S)	1417
LINE	88	USED FOR LINE(S)	581
LINE	158	USED FOR LINE(S)	1364
LINE	160	USED FOR LINE(S)	1359
LINE	172	USED FOR LINE(S)	512
LINE	176	USED FOR LINE(S)	513
LINE	180	USED FOR LINE(S)	1373
LINE	192	USED FOR LINE(S)	531
LINE	204	USED FOR LINE(S)	1386
LINE	205	USED FOR LINE(S)	1387
LINE	206	USED FOR LINE(S)	1584
LINE	207	USED FOR LINE(S)	1635
LINE	208	USED FOR LINE(S)	550
LINE	209	USED FOR LINE(S)	547
LINE	211	USED FOR LINE(S)	1582
LINE	217	USED FOR LINE(S)	1395
LINE	222	USED FOR LINE(S)	558
LINE	224	USED FOR LINE(S)	744
LINE	230	USED FOR LINE(S)	1407
LINE	231	USED FOR LINE(S)	1408
LINE	233	USED FOR LINE(S)	745

LINE	234	USED FOR LINE(S)	571
LINE	235	USED FOR LINE(S)	568
LINE	237	USED FOR LINE(S)	756
LINE	243	USED FOR LINE(S)	1416
LINE	245	USED FOR LINE(S)	754
LINE	248	USED FOR LINE(S)	579
LINE	250	USED FOR LINE(S)	1585
LINE	251	USED FOR LINE(S)	1586
LINE	257	USED FOR LINE(S)	762
LINE	258	USED FOR LINE(S)	760
LINE	263	USED FOR LINE(S)	1591
LINE	267	USED FOR LINE(S)	1592
LINE	269	USED FOR LINE(S)	1602
LINE	271	USED FOR LINE(S)	1600
LINE	278	USED FOR LINE(S)	763
LINE	282	USED FOR LINE(S)	764
LINE	283	USED FOR LINE(S)	773
LINE	287	USED FOR LINE(S)	771
LINE	289	USED FOR LINE(S)	1505
LINE	291	USED FOR LINE(S)	1502
LINE	293	USED FOR LINE(S)	1603
LINE	294	USED FOR LINE(S)	1604
LINE	295	USED FOR LINE(S)	778
LINE	300	USED FOR LINE(S)	776
LINE	303	USED FOR LINE(S)	660
LINE	305	USED FOR LINE(S)	1608
LINE	306	USED FOR LINE(S)	1609
LINE	307	USED FOR LINE(S)	661
LINE	308	USED FOR LINE(S)	1618
LINE	309	USED FOR LINE(S)	1517
LINE	310	USED FOR LINE(S)	1633
LINE	311	USED FOR LINE(S)	1514
LINE	313	USED FOR LINE(S)	1616
LINE	315	USED FOR LINE(S)	779
LINE	320	USED FOR LINE(S)	780
LINE	321	USED FOR LINE(S)	789
LINE	323	USED FOR LINE(S)	672
LINE	325	USED FOR LINE(S)	787
LINE	327	USED FOR LINE(S)	673
LINE	328	USED FOR LINE(S)	1619
LINE	329	USED FOR LINE(S)	1620
LINE	330	USED FOR LINE(S)	794
LINE	331	USED FOR LINE(S)	1526
LINE	333	USED FOR LINE(S)	792
LINE	335	USED FOR LINE(S)	1624
LINE	340	USED FOR LINE(S)	1625
LINE	343	USED FOR LINE(S)	684
LINE	345	USED FOR LINE(S)	795
LINE	346	USED FOR LINE(S)	796
LINE	347	USED FOR LINE(S)	807
LINE	348	USED FOR LINE(S)	805
LINE	350	USED FOR LINE(S)	1636
LINE	351	USED FOR LINE(S)	1637
LINE	355	USED FOR LINE(S)	1535
LINE	356	USED FOR LINE(S)	1536
LINE	357	USED FOR LINE(S)	813
LINE	358	USED FOR LINE(S)	811
LINE	359	USED FOR LINE(S)	700
LINE	360	USED FOR LINE(S)	698
LINE	363	USED FOR LINE(S)	1642
LINE	364	USED FOR LINE(S)	1643
LINE	368	USED FOR LINE(S)	1543
LINE	369	USED FOR LINE(S)	1544
LINE	370	USED FOR LINE(S)	1653
LINE	372	USED FOR LINE(S)	708
LINE	373	USED FOR LINE(S)	706
LINE	375	USED FOR LINE(S)	1651
LINE	377	USED FOR LINE(S)	814
LINE	381	USED FOR LINE(S)	1551
LINE	382	USED FOR LINE(S)	815

LINE	383	USED FOR LINE(S)	824
LINE	384	USED FOR LINE(S)	822
LINE	386	USED FOR LINE(S)	714
LINE	388	USED FOR LINE(S)	1654
LINE	389	USED FOR LINE(S)	1655
LINE	390	USED FOR LINE(S)	829
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LINE	395	USED FOR LINE(S)	1560
LINE	396	USED FOR LINE(S)	827
LINE	398	USED FOR LINE(S)	724
LINE	399	USED FOR LINE(S)	722
LINE	401	USED FOR LINE(S)	1659
LINE	402	USED FOR LINE(S)	1660
LINE	403	USED FOR LINE(S)	1669
LINE	407	USED FOR LINE(S)	1567
LINE	408	USED FOR LINE(S)	1568
LINE	410	USED FOR LINE(S)	1667
LINE	411	USED FOR LINE(S)	732
LINE	412	USED FOR LINE(S)	730
LINE	415	USED FOR LINE(S)	830
LINE	416	USED FOR LINE(S)	831
LINE	420	USED FOR LINE(S)	1575
LINE	421	USED FOR LINE(S)	840
LINE	422	USED FOR LINE(S)	838
LINE	424	USED FOR LINE(S)	1670
LINE	425	USED FOR LINE(S)	738
LINE	427	USED FOR LINE(S)	1671
LINE	428	USED FOR LINE(S)	845
LINE	429	USED FOR LINE(S)	843
LINE	431	USED FOR LINE(S)	1675
LINE	432	USED FOR LINE(S)	1676
LINE	433	USED FOR LINE(S)	1685
LINE	435	USED FOR LINE(S)	1683
LINE	437	USED FOR LINE(S)	846
LINE	438	USED FOR LINE(S)	847
LINE	439	USED FOR LINE(S)	856
LINE	440	USED FOR LINE(S)	854
LINE	442	USED FOR LINE(S)	1686
LINE	443	USED FOR LINE(S)	1687
LINE	444	USED FOR LINE(S)	861
LINE	445	USED FOR LINE(S)	859
LINE	447	USED FOR LINE(S)	1691
LINE	448	USED FOR LINE(S)	1692
LINE	525	USED FOR LINE(S)	929
LINE	529	USED FOR LINE(S)	928
LINE	530	USED FOR LINE(S)	930
LINE	539	USED FOR LINE(S)	948
LINE	542	USED FOR LINE(S)	949
LINE	551	USED FOR LINE(S)	966
LINE	552	USED FOR LINE(S)	964
LINE	553	USED FOR LINE(S)	967
LINE	561	USED FOR LINE(S)	975
LINE	562	USED FOR LINE(S)	977
LINE	572	USED FOR LINE(S)	987
LINE	573	USED FOR LINE(S)	985
LINE	574	USED FOR LINE(S)	988
LINE	582	USED FOR LINE(S)	996
LINE	583	USED FOR LINE(S)	998
LINE	668	USED FOR LINE(S)	1077
LINE	671	USED FOR LINE(S)	1078
LINE	680	USED FOR LINE(S)	1089
LINE	683	USED FOR LINE(S)	1090
LINE	692	USED FOR LINE(S)	1101
LINE	695	USED FOR LINE(S)	1102
LINE	701	USED FOR LINE(S)	1115
LINE	702	USED FOR LINE(S)	1117
LINE	709	USED FOR LINE(S)	1123
LINE	710	USED FOR LINE(S)	1125
LINE	717	USED FOR LINE(S)	1131
LINE	718	USED FOR LINE(S)	1133

LINE	725	USED FOR LINE(S)	1139
LINE	726	USED FOR LINE(S)	1141
LINE	733	USED FOR LINE(S)	1147
LINE	734	USED FOR LINE(S)	1149
LINE	741	USED FOR LINE(S)	1155
LINE	742	USED FOR LINE(S)	1157
LINE	748	USED FOR LINE(S)	1161
LINE	750	USED FOR LINE(S)	1162
LINE	751	USED FOR LINE(S)	1171
LINE	752	USED FOR LINE(S)	1173
LINE	757	USED FOR LINE(S)	1177
LINE	758	USED FOR LINE(S)	1179
LINE	766	USED FOR LINE(S)	1180
LINE	768	USED FOR LINE(S)	1181
LINE	769	USED FOR LINE(S)	1188
LINE	770	USED FOR LINE(S)	1190
LINE	774	USED FOR LINE(S)	1193
LINE	775	USED FOR LINE(S)	1195
LINE	782	USED FOR LINE(S)	1196
LINE	784	USED FOR LINE(S)	1197
LINE	785	USED FOR LINE(S)	1204
LINE	786	USED FOR LINE(S)	1206
LINE	790	USED FOR LINE(S)	1209
LINE	791	USED FOR LINE(S)	1211
LINE	799	USED FOR LINE(S)	1212
LINE	801	USED FOR LINE(S)	1213
LINE	802	USED FOR LINE(S)	1222
LINE	803	USED FOR LINE(S)	1224
LINE	808	USED FOR LINE(S)	1228
LINE	809	USED FOR LINE(S)	1230
LINE	817	USED FOR LINE(S)	1231
LINE	819	USED FOR LINE(S)	1232
LINE	820	USED FOR LINE(S)	1239
LINE	821	USED FOR LINE(S)	1241
LINE	825	USED FOR LINE(S)	1244
LINE	826	USED FOR LINE(S)	1246
LINE	833	USED FOR LINE(S)	1247
LINE	835	USED FOR LINE(S)	1248
LINE	836	USED FOR LINE(S)	1255
LINE	837	USED FOR LINE(S)	1257
LINE	841	USED FOR LINE(S)	1260
LINE	842	USED FOR LINE(S)	1262
LINE	849	USED FOR LINE(S)	1263
LINE	851	USED FOR LINE(S)	1264
LINE	852	USED FOR LINE(S)	1271
LINE	853	USED FOR LINE(S)	1273
LINE	857	USED FOR LINE(S)	1276
LINE	858	USED FOR LINE(S)	1278
LINE	942	USED FOR LINE(S)	1346
LINE	946	USED FOR LINE(S)	1345
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LINE	956	USED FOR LINE(S)	1365
LINE	959	USED FOR LINE(S)	1366
LINE	968	USED FOR LINE(S)	1383
LINE	969	USED FOR LINE(S)	1381
LINE	970	USED FOR LINE(S)	1384
LINE	978	USED FOR LINE(S)	1392
LINE	979	USED FOR LINE(S)	1394
LINE	989	USED FOR LINE(S)	1404
LINE	990	USED FOR LINE(S)	1402
LINE	991	USED FOR LINE(S)	1405
LINE	999	USED FOR LINE(S)	1413
LINE	1000	USED FOR LINE(S)	1415
LINE	1085	USED FOR LINE(S)	1494
LINE	1088	USED FOR LINE(S)	1495
LINE	1097	USED FOR LINE(S)	1506
LINE	1100	USED FOR LINE(S)	1507
LINE	1109	USED FOR LINE(S)	1518
LINE	1112	USED FOR LINE(S)	1519
LINE	1118	USED FOR LINE(S)	1532

LINE	1119	USED FOR LINE(S)	1534
LINE	1126	USED FOR LINE(S)	1540
LINE	1127	USED FOR LINE(S)	1542
LINE	1134	USED FOR LINE(S)	1548
LINE	1135	USED FOR LINE(S)	1550
LINE	1142	USED FOR LINE(S)	1556
LINE	1143	USED FOR LINE(S)	1558
LINE	1150	USED FOR LINE(S)	1564
LINE	1151	USED FOR LINE(S)	1566
LINE	1158	USED FOR LINE(S)	1572
LINE	1159	USED FOR LINE(S)	1574
LINE	1165	USED FOR LINE(S)	1578
LINE	1167	USED FOR LINE(S)	1579
LINE	1168	USED FOR LINE(S)	1588
LINE	1169	USED FOR LINE(S)	1590
LINE	1174	USED FOR LINE(S)	1594
LINE	1175	USED FOR LINE(S)	1596
LINE	1183	USED FOR LINE(S)	1597
LINE	1185	USED FOR LINE(S)	1598
LINE	1186	USED FOR LINE(S)	1605
LINE	1187	USED FOR LINE(S)	1607
LINE	1191	USED FOR LINE(S)	1610
LINE	1192	USED FOR LINE(S)	1612
LINE	1199	USED FOR LINE(S)	1613
LINE	1201	USED FOR LINE(S)	1614
LINE	1202	USED FOR LINE(S)	1621
LINE	1203	USED FOR LINE(S)	1623
LINE	1207	USED FOR LINE(S)	1626
LINE	1208	USED FOR LINE(S)	1628
LINE	1216	USED FOR LINE(S)	1629
LINE	1218	USED FOR LINE(S)	1630
LINE	1219	USED FOR LINE(S)	1639
LINE	1220	USED FOR LINE(S)	1641
LINE	1225	USED FOR LINE(S)	1645
LINE	1226	USED FOR LINE(S)	1647
LINE	1234	USED FOR LINE(S)	1648
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LINE	1237	USED FOR LINE(S)	1656
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LINE	1242	USED FOR LINE(S)	1661
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LINE	1268	USED FOR LINE(S)	1681
LINE	1269	USED FOR LINE(S)	1688
LINE	1270	USED FOR LINE(S)	1690
LINE	1274	USED FOR LINE(S)	1693
LINE	1275	USED FOR LINE(S)	1695
AREA	89	USED FOR AREA(S)	1148
AREA	102	USED FOR AREA(S)	423
AREA	105	USED FOR AREA(S)	1161
AREA	118	USED FOR AREA(S)	439
AREA	124	USED FOR AREA(S)	1168
AREA	127	USED FOR AREA(S)	453
AREA	133	USED FOR AREA(S)	1176
AREA	136	USED FOR AREA(S)	462
AREA	142	USED FOR AREA(S)	1184
AREA	145	USED FOR AREA(S)	469
AREA	151	USED FOR AREA(S)	1192
AREA	154	USED FOR AREA(S)	478
AREA	169	USED FOR AREA(S)	1347
AREA	178	USED FOR AREA(S)	633
AREA	185	USED FOR AREA(S)	640
AREA	194	USED FOR AREA(S)	1350
AREA	201	USED FOR AREA(S)	645

AREA	210	USED	FOR	AREA(S)	1355
AREA	217	USED	FOR	AREA(S)	1277
AREA	219	USED	FOR	AREA(S)	1362
AREA	228	USED	FOR	AREA(S)	648
AREA	230	USED	FOR	AREA(S)	555
AREA	233	USED	FOR	AREA(S)	1289
AREA	235	USED	FOR	AREA(S)	654
AREA	244	USED	FOR	AREA(S)	1364
AREA	246	USED	FOR	AREA(S)	567
AREA	249	USED	FOR	AREA(S)	1301
AREA	251	USED	FOR	AREA(S)	658
AREA	260	USED	FOR	AREA(S)	1368
AREA	262	USED	FOR	AREA(S)	579
AREA	265	USED	FOR	AREA(S)	1374
AREA	268	USED	FOR	AREA(S)	1307
AREA	271	USED	FOR	AREA(S)	593
AREA	274	USED	FOR	AREA(S)	660
AREA	277	USED	FOR	AREA(S)	1314
AREA	280	USED	FOR	AREA(S)	600
AREA	283	USED	FOR	AREA(S)	666
AREA	286	USED	FOR	AREA(S)	1321
AREA	289	USED	FOR	AREA(S)	607
AREA	292	USED	FOR	AREA(S)	1376
AREA	295	USED	FOR	AREA(S)	1328
AREA	298	USED	FOR	AREA(S)	614
AREA	301	USED	FOR	AREA(S)	670
AREA	304	USED	FOR	AREA(S)	1335
AREA	307	USED	FOR	AREA(S)	621
AREA	310	USED	FOR	AREA(S)	1380
AREA	313	USED	FOR	AREA(S)	1342
AREA	316	USED	FOR	AREA(S)	628
AREA	319	USED	FOR	AREA(S)	1386
AREA	321	USED	FOR	AREA(S)	672
AREA	323	USED	FOR	AREA(S)	679
AREA	325	USED	FOR	AREA(S)	1389
AREA	327	USED	FOR	AREA(S)	684
AREA	329	USED	FOR	AREA(S)	1394
AREA	331	USED	FOR	AREA(S)	1401
AREA	333	USED	FOR	AREA(S)	687
AREA	335	USED	FOR	AREA(S)	693
AREA	337	USED	FOR	AREA(S)	1403
AREA	339	USED	FOR	AREA(S)	697
AREA	341	USED	FOR	AREA(S)	1407
AREA	343	USED	FOR	AREA(S)	1413
AREA	345	USED	FOR	AREA(S)	699
AREA	347	USED	FOR	AREA(S)	705
AREA	349	USED	FOR	AREA(S)	1415
AREA	351	USED	FOR	AREA(S)	709
AREA	353	USED	FOR	AREA(S)	1419
AREA	355	USED	FOR	AREA(S)	1425
AREA	357	USED	FOR	AREA(S)	711
AREA	359	USED	FOR	AREA(S)	717
AREA	361	USED	FOR	AREA(S)	1427
AREA	363	USED	FOR	AREA(S)	721
AREA	365	USED	FOR	AREA(S)	1431
AREA	436	USED	FOR	AREA(S)	779
AREA	449	USED	FOR	AREA(S)	795
AREA	456	USED	FOR	AREA(S)	809
AREA	464	USED	FOR	AREA(S)	818
AREA	472	USED	FOR	AREA(S)	825
AREA	480	USED	FOR	AREA(S)	834
AREA	565	USED	FOR	AREA(S)	911
AREA	577	USED	FOR	AREA(S)	923
AREA	589	USED	FOR	AREA(S)	935
AREA	595	USED	FOR	AREA(S)	949
AREA	602	USED	FOR	AREA(S)	956
AREA	609	USED	FOR	AREA(S)	963
AREA	616	USED	FOR	AREA(S)	970
AREA	623	USED	FOR	AREA(S)	977
AREA	630	USED	FOR	AREA(S)	984

AREA 635 USED FOR AREA(S) 989
 AREA 638 USED FOR AREA(S) 996
 AREA 643 USED FOR AREA(S) 1001
 AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,

CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #3

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),

ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #3

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,33,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #4

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,34,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation - Between Can and IB

Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
 KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=

IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Sides Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00

KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE ***
Page file used.

CP= 77.520 TIME= 09:28:07

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.
GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26
SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.
SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)
UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.
GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360

KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation

In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation

Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140

KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 98.720

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsw21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:28:40 NOV 08, 1995 CP= 109.050
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 109.480 TIME= 09:28:40
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5941.820

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:07:46 NOV 08, 1995 CP= 5941.820
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5942.450 TIME= 11:07:47
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7947.710

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH


```
/COM,  
/AUX12,  
ESEL,S,TYPE,,6,  
NSLE,S,  
STEF,5.67E-8,  
GEOM,0,  
VTYPE,0,100,  
WRITE,glscangap,
```

```
ALL SELECT FOR ITEM=ELEM COMPONENT=  
IN RANGE 1 TO 10656 STEP 1
```

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

```
ALL SELECT FOR ITEM=NODE COMPONENT=  
IN RANGE 1 TO 10009 STEP 1
```

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

```
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****  
38303 VERSION=HP 9000/7XX 11:42:13 NOV 08, 1995 CP= 7947.790  
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844
```

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

```
ELEMENT TYPE SET TO 18  
SE,glscangap,  
SE,iobargap,
```

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

```
CURRENT NODAL DOF SET IS TEMP  
THREE-DIMENSIONAL MODEL
```

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

```
CURRENT NODAL DOF SET IS TEMP  
THREE-DIMENSIONAL MODEL
```

```
STORE NODES OF SUPERELEMENT 10658  
Delete radiation edge elements
```

```
SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 6 TO 6 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 16 TO 16 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 26 TO 26 STEP 1
```

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 36 TO 36 STEP 1
```

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7950.640

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsw21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....

DONT MESH; Either Assume its VOID or its meshed earlier
This section used only if both rad. and He conducti
is used in the model.
He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,

VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:42:31 NOV 08, 1995 CP= 7960.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7970.020

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7970.030 TIME= 11:42:42
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1379438 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=

IN RANGE 1 TO 1434 STEP 1
1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
552.103435 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7972.380 TIME= 11:42:44
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:42:44 NOV 08, 1995 CP= 7972.380
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7973.850 TIME= 11:42:46
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7974.300 TIME= 11:42:46
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19821.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.47040E-12	IXX = .2730E+05	IXX = .2701E+05
YC = -.10514E-01	IYY = .2709E+05	IYY = .2680E+05
ZC = -.12014	IZZ = 9810.	IZZ = 9808.
	IXY = .8715E-08	IXY = .8813E-08
	IYZ = .4597E-10	IYZ = 25.04
	IZX = -.2955E-08	IZX = -.1835E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	129.199

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 8013.480 TIME= 11:44:32
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	22.660	.004
11	320	SHELL57	.810	.003
18	2	MATRIX50	5.570	2.785

Time at end of element matrix formulation CP= 8013.48.
HT FLOW CONVERGENCE VALUE= 124.9 CRITERION= .1249

Estimated number of active DOF= 8639.

Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 9114.9.
 Equation solver maximum pivot= 45.7732646 at node 8097 TEMP.
 Equation solver minimum pivot= 0.217830495 at node 3498 TEMP.
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 89.29
 HT FLOW CONVERGENCE VALUE= 79.99 CRITERION= .3729E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -16.29
 HT FLOW CONVERGENCE VALUE= 5.068 CRITERION= .3729E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.254
 HT FLOW CONVERGENCE VALUE= .4535 CRITERION= .3729E-01
 EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6609E-01
 HT FLOW CONVERGENCE VALUE= .1914E-01 CRITERION= .3729E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.670	.002
11	320	SHELL57	.450	.001
18	2	MATRIX50	8.980	4.490

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.160	.000
11	320	SHELL57	.060	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 4
 *** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS
 ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
 R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS
 BUFFER SIZE USED= 4096
 57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsw21x2.emat
 5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsw21x2.esav
 58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsw21x2.tri
 .047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsw21x2.dsub
 5.297 MB WRITTEN ON RESULTS FILE: glsw21x2.rth

Solve steady-state for initial conditions
 with WP surface temperatures from repository
 steady-state solution.
 Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1
 10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
 RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

```
ALL SELECT  FOR ITEM=NODE COMPONENT=
IN RANGE    1 TO    10009 STEP      1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT      FOR ITEM=AREA COMPONENT=
IN RANGE    17 TO    26 STEP      1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES      1 TO 10009 BY      1
REAL= 26.1383000      IMAG= .000000000E+00

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO    1434 STEP      1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=NODE COMPONENT=
IN RANGE    1 TO    10009 STEP      1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
      Apply Heat Generation BC to glass

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    5 TO     5 STEP      1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION      1
552.103435      .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT  FOR ITEM=VOLU COMPONENT=
IN RANGE    1 TO    404 STEP      1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT  FOR ITEM=NODE COMPONENT=
IN RANGE    1 TO    10009 STEP      1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT  FOR ITEM=ELEM COMPONENT=
IN RANGE    1 TO    10658 STEP      1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
      Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE      COMMAND *****
```

*** WARNING *** CP= 12586.390 TIME= 13:16:20
This load step will be a static (steady-state) step.

*** NOTE *** CP= 12586.830 TIME= 13:16:20
The step data was checked and warning messages were found.
Please review output or errors file (glsw21x2.err) for these warning messages.

*** NOTE *** CP= 12586.830 TIME= 13:16:20
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:16:20 NOV 08, 1995 CP= 12586.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .1928E-01 CRITERION= .3729E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5641E-02
HT FLOW CONVERGENCE VALUE= .1887E-02 CRITERION= .3729E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 5
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsw21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP
Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,6,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07

TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM

32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
552.103435 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1383000 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 12883.550 TIME= 13:27:29
This load step will be a static (steady-state) step.

*** NOTE *** CP= 12883.990 TIME= 13:27:30
The step data was checked and warning messages were found.
Please review output or errors file (glsw21x2.err) for these warning messages.

*** NOTE *** CP= 12883.990 TIME= 13:27:30
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:27:30 NOV 08, 1995 CP= 12883.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .1887E-02 CRITERION= .3729E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3039E-03
HT FLOW CONVERGENCE VALUE= .8521E-04 CRITERION= .3729E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 13164.070 TIME= 13:38:24
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:38:24 NOV 08, 1995 CP= 13164.520
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 128.5 CRITERION= .1338
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 20.28
HT FLOW CONVERGENCE VALUE= 10.19 CRITERION= .3720E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.292
HT FLOW CONVERGENCE VALUE= .6572 CRITERION= .3720E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6542E-01
HT FLOW CONVERGENCE VALUE= .1610E-01 CRITERION= .3720E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 9
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 13836.210 TIME= 14:03:37
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:03:38 NOV 08, 1995 CP= 13836.650
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 67.62 CRITERION= .7714E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 8.872
HT FLOW CONVERGENCE VALUE= 4.446 CRITERION= .3712E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9410
HT FLOW CONVERGENCE VALUE= .2668 CRITERION= .3712E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2345E-01
HT FLOW CONVERGENCE VALUE= .5604E-02 CRITERION= .3712E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 12
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14493.670 TIME= 14:27:25
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:27:26 NOV 08, 1995 CP= 14494.110
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 49.96 CRITERION= .6219E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.064
HT FLOW CONVERGENCE VALUE= 2.992 CRITERION= .3703E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6138
HT FLOW CONVERGENCE VALUE= .1704 CRITERION= .3703E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1422E-01
HT FLOW CONVERGENCE VALUE= .3329E-02 CRITERION= .3703E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15151.130 TIME= 14:51:11
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:51:11 NOV 08, 1995 CP= 15151.590
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.82 CRITERION= .5505E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.702
HT FLOW CONVERGENCE VALUE= 2.289 CRITERION= .3694E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4600
HT FLOW CONVERGENCE VALUE= .1251 CRITERION= .3694E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1008E-01
HT FLOW CONVERGENCE VALUE= .2324E-02 CRITERION= .3694E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15807.650 TIME= 15:14:58
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:14:59 NOV 08, 1995 CP= 15808.090
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 34.91 CRITERION= .5077E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.864
HT FLOW CONVERGENCE VALUE= 1.858 CRITERION= .3686E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3673
HT FLOW CONVERGENCE VALUE= .9827E-01 CRITERION= .3686E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7704E-02
HT FLOW CONVERGENCE VALUE= .1754E-02 CRITERION= .3686E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16464.910 TIME= 15:38:44
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:38:44 NOV 08, 1995 CP= 16465.360
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 30.73 CRITERION= .4792E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.293
HT FLOW CONVERGENCE VALUE= 1.564 CRITERION= .3677E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3053
HT FLOW CONVERGENCE VALUE= .8055E-01 CRITERION= .3677E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6176E-02
HT FLOW CONVERGENCE VALUE= .1389E-02 CRITERION= .3677E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17122.530 TIME= 16:02:30
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:02:30 NOV 08, 1995 CP= 17122.970
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 27.65 CRITERION= .4594E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.882
HT FLOW CONVERGENCE VALUE= 1.349 CRITERION= .3669E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2612
HT FLOW CONVERGENCE VALUE= .6818E-01 CRITERION= .3669E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5121E-02
HT FLOW CONVERGENCE VALUE= .1137E-02 CRITERION= .3669E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 27

*** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17781.030 TIME= 16:26:15
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:26:16 NOV 08, 1995 CP= 17781.470
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.00 CRITERION= .4432E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.545
HT FLOW CONVERGENCE VALUE= 1.175 CRITERION= .3660E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2259
HT FLOW CONVERGENCE VALUE= .5836E-01 CRITERION= .3660E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4311E-02
HT FLOW CONVERGENCE VALUE= .9454E-03 CRITERION= .3660E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 30
*** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18454.820 TIME= 16:51:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:51:41 NOV 08, 1995 CP= 18455.270
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.96 CRITERION= .4313E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.289
HT FLOW CONVERGENCE VALUE= 1.048 CRITERION= .3652E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1994
HT FLOW CONVERGENCE VALUE= .5101E-01 CRITERION= .3652E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3716E-02
HT FLOW CONVERGENCE VALUE= .8059E-03 CRITERION= .3652E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 33
*** TIME = .284019E+08 TIME INC = .315576E+07

NSUBST,15,30,10,ON

Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08

TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION
539.398928 .000000000E+00 .000000000E+00 .000000000E+00

1

ALL SELECT FOR ITEM=VOLU COMPONENT=

IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 83.0314775 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19118.910 TIME= 17:15:32
This load step will be a static (steady-state) step.

*** NOTE *** CP= 19119.350 TIME= 17:15:33
The step data was checked and warning messages were found.
Please review output or errors file (glsw21x2.err) for these warning
messages.

*** NOTE *** CP= 19119.350 TIME= 17:15:33

Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 17:15:33 NOV 08, 1995 CP= 19119.350
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
 TIME AT END OF THE LOAD STEP.31558E+08
 AUTOMATIC TIME STEPPING ON
 INITIAL NUMBER OF SUBSTEPS 0
 MAXIMUM NUMBER OF SUBSTEPS 0
 MINIMUM NUMBER OF SUBSTEPS 1
 MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
 STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 21.45 CRITERION= .4228E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.099
 HT FLOW CONVERGENCE VALUE= .9534 CRITERION= .3643E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1796
 HT FLOW CONVERGENCE VALUE= .4551E-01 CRITERION= .3643E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3276E-02
 HT FLOW CONVERGENCE VALUE= .7034E-03 CRITERION= .3643E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 36
 *** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19783.180 TIME= 17:39:26
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 17:39:26 NOV 08, 1995 CP= 19783.630
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 153.7 CRITERION= .1578
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 14.79
 HT FLOW CONVERGENCE VALUE= 5.318 CRITERION= .3559E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.087
 HT FLOW CONVERGENCE VALUE= .2306 CRITERION= .3559E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1693E-01
 HT FLOW CONVERGENCE VALUE= .3761E-02 CRITERION= .3559E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 39
 *** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20444.910 TIME= 18:03:16
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:03:17 NOV 08, 1995 CP= 20445.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 110.0 CRITERION= .1153
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.406
HT FLOW CONVERGENCE VALUE= 2.746 CRITERION= .3477E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6383
HT FLOW CONVERGENCE VALUE= .1290 CRITERION= .3477E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8687E-02
HT FLOW CONVERGENCE VALUE= .1893E-02 CRITERION= .3477E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 42
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21112.810 TIME= 18:27:13
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:27:14 NOV 08, 1995 CP= 21113.250
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 92.67 CRITERION= .9870E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 7.372
HT FLOW CONVERGENCE VALUE= 2.063 CRITERION= .3398E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4649
HT FLOW CONVERGENCE VALUE= .8965E-01 CRITERION= .3398E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5732E-02
HT FLOW CONVERGENCE VALUE= .1209E-02 CRITERION= .3398E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21773.930 TIME= 18:51:03
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:51:04 NOV 08, 1995 CP= 21774.370
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 84.14 CRITERION= .9045E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.331
HT FLOW CONVERGENCE VALUE= 1.583 CRITERION= .3320E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3743
HT FLOW CONVERGENCE VALUE= .6513E-01 CRITERION= .3320E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4245E-02
HT FLOW CONVERGENCE VALUE= .8917E-03 CRITERION= .3320E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22442.010 TIME= 19:15:00
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:15:00 NOV 08, 1995 CP= 22442.450
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 74.02 CRITERION= .8081E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.314
HT FLOW CONVERGENCE VALUE= 1.262 CRITERION= .3243E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2963
HT FLOW CONVERGENCE VALUE= .4955E-01 CRITERION= .3243E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3127E-02
HT FLOW CONVERGENCE VALUE= .6360E-03 CRITERION= .3243E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 51
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23110.540 TIME= 19:38:57
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:38:58 NOV 08, 1995 CP= 23111.000
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 63.68 CRITERION= .7113E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.397
HT FLOW CONVERGENCE VALUE= 1.007 CRITERION= .3169E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2321
HT FLOW CONVERGENCE VALUE= .3748E-01 CRITERION= .3169E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2304E-02
HT FLOW CONVERGENCE VALUE= .4538E-03 CRITERION= .3169E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23779.340 TIME= 20:03:41
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:03:42 NOV 08, 1995 CP= 23779.780
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 58.30 CRITERION= .6601E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.899
HT FLOW CONVERGENCE VALUE= .8648 CRITERION= .3097E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1952
HT FLOW CONVERGENCE VALUE= .3049E-01 CRITERION= .3097E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 56
*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24240.540 TIME= 20:20:30
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:20:31 NOV 08, 1995 CP= 24240.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 45.59 CRITERION= .5472E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.965
HT FLOW CONVERGENCE VALUE= .6372 CRITERION= .3026E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1413
HT FLOW CONVERGENCE VALUE= .2141E-01 CRITERION= .3026E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 58
*** TIME = .284018E+09 TIME INC = .315576E+08
NSUBST,20,40,15,ON
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
437.746039 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 139.973714 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24706.710 TIME= 20:37:24
This load step will be a static (steady-state) step.

*** NOTE *** CP= 24707.160 TIME= 20:37:24
The step data was checked and warning messages were found.
Please review output or errors file (glsw21x2.err) for these warning
messages.

*** NOTE *** CP= 24707.160 TIME= 20:37:24
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:37:24 NOV 08, 1995 CP= 24707.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 22
TIME AT END OF THE LOAD STEP.31558E+09
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 38.81 CRITERION= .4879E-01

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.472
HT FLOW CONVERGENCE VALUE= .5185 CRITERION= .2957E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1128
HT FLOW CONVERGENCE VALUE= .1654E-01 CRITERION= .2957E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 60
*** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25167.120 TIME= 20:54:11
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:54:12 NOV 08, 1995 CP= 25167.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 284.5 CRITERION= .2854
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 17.80
HT FLOW CONVERGENCE VALUE= 1.722 CRITERION= .2349E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4540
HT FLOW CONVERGENCE VALUE= .4814E-01 CRITERION= .2349E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2813E-02
HT FLOW CONVERGENCE VALUE= .3599E-03 CRITERION= .2349E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 63
*** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25819.560 TIME= 21:17:30
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:17:30 NOV 08, 1995 CP= 25820.000
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 207.0 CRITERION= .2078
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 11.46
HT FLOW CONVERGENCE VALUE= .8977 CRITERION= .1871E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2220
HT FLOW CONVERGENCE VALUE= .1829E-01 CRITERION= .1871E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 65
*** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26285.260 TIME= 21:34:23
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:34:24 NOV 08, 1995 CP= 26285.700
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 99.08 CRITERION= .1001

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.080
 HT FLOW CONVERGENCE VALUE= .3168 CRITERION= .1494E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7897E-01
 HT FLOW CONVERGENCE VALUE= .5295E-02 CRITERION= .1494E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 67
 *** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26751.040 TIME= 21:51:17
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 21:51:18 NOV 08, 1995 CP= 26751.490
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.41 CRITERION= .4881E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.349
 HT FLOW CONVERGENCE VALUE= .1220 CRITERION= .1197E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2936E-01
 HT FLOW CONVERGENCE VALUE= .1737E-02 CRITERION= .1197E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 69
 *** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27212.420 TIME= 22:08:06
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 22:08:06 NOV 08, 1995 CP= 27212.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.35 CRITERION= .2330E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.038
 HT FLOW CONVERGENCE VALUE= .4832E-01 CRITERION= .9631E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1059E-01
 HT FLOW CONVERGENCE VALUE= .5385E-03 CRITERION= .9631E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 71
 *** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27678.520 TIME= 22:25:01
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 22:25:01 NOV 08, 1995 CP= 27678.960
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 3.695 CRITERION= .8415E-02
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.069
 HT FLOW CONVERGENCE VALUE= .2439E-01 CRITERION= .7783E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2732E-02
 HT FLOW CONVERGENCE VALUE= .9923E-04 CRITERION= .7783E-02 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 73
 *** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28139.030 TIME= 22:41:48
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 22:41:49 NOV 08, 1995 CP= 28139.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.12 CRITERION= .1541E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.645
 HT FLOW CONVERGENCE VALUE= .3485E-01 CRITERION= .6324E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4627E-02
 HT FLOW CONVERGENCE VALUE= .1131E-03 CRITERION= .6324E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 75
 *** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28604.680 TIME= 22:58:41
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 22:58:42 NOV 08, 1995 CP= 28605.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.97 CRITERION= .1580E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.493
 HT FLOW CONVERGENCE VALUE= .2774E-01 CRITERION= .5170E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4122E-02
 HT FLOW CONVERGENCE VALUE= .8561E-04 CRITERION= .5170E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 77
 *** TIME = .284018E+10 TIME INC = .315576E+09
 NSUBST,25,60,20,ON

Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10
 TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
 63.0312293 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
 IN RANGE 1 TO 404 STEP 1

```
404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 175.696156 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29069.320 TIME= 23:15:34
This load step will be a static (steady-state) step.

*** NOTE *** CP= 29069.770 TIME= 23:15:34
The step data was checked and warning messages were found.
Please review output or errors file ( glsw21x2.err ) for these warning
messages.

*** NOTE *** CP= 29069.770 TIME= 23:15:34
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.
```

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:15:34 NOV 08, 1995 CP= 29069.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
 TIME AT END OF THE LOAD STEP.31558E+10
 AUTOMATIC TIME STEPPING ON
 INITIAL NUMBER OF SUBSTEPS 0
 MAXIMUM NUMBER OF SUBSTEPS 0
 MINIMUM NUMBER OF SUBSTEPS 1
 MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
 STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 15.36 CRITERION= .1592E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.359
 HT FLOW CONVERGENCE VALUE= .2045E-01 CRITERION= .4257E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3579E-02
 HT FLOW CONVERGENCE VALUE= .6078E-04 CRITERION= .4257E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 79
 *** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29536.160 TIME= 23:32:28
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:32:29 NOV 08, 1995 CP= 29536.600
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 90.43 CRITERION= .9038E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.591
 HT FLOW CONVERGENCE VALUE= .1366 CRITERION= .1051E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1685E-01
 HT FLOW CONVERGENCE VALUE= .7500E-04 CRITERION= .1051E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 81
 *** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29997.430 TIME= 23:49:16
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:49:16 NOV 08, 1995 CP= 29997.870
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 87.56 CRITERION= .8757E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.741
HT FLOW CONVERGENCE VALUE= .4860E-02 CRITERION= .6295E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1484E-02
HT FLOW CONVERGENCE VALUE= .4000E-05 CRITERION= .6295E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 83
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30462.810 TIME= 00:06:09
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:06:09 NOV 09, 1995 CP= 30463.260
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 44.93 CRITERION= .4493E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.446
HT FLOW CONVERGENCE VALUE= .5667E-02 CRITERION= .5001E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1321E-02
HT FLOW CONVERGENCE VALUE= .2936E-05 CRITERION= .5001E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 85
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30923.720 TIME= 00:22:56
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:22:57 NOV 09, 1995 CP= 30924.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.47 CRITERION= .2847E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.575
HT FLOW CONVERGENCE VALUE= .3462E-02 CRITERION= .4174E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7718E-03
HT FLOW CONVERGENCE VALUE= .1442E-05 CRITERION= .4174E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 87
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31389.720 TIME= 00:39:49
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:39:49 NOV 09, 1995 CP= 31390.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.26 CRITERION= .3326E-01

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.837
HT FLOW CONVERGENCE VALUE= .3564E-02 CRITERION= .3525E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7927E-03
HT FLOW CONVERGENCE VALUE= .1262E-05 CRITERION= .3525E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 89
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31855.380 TIME= 00:56:41

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:56:41 NOV 09, 1995 CP= 31855.820
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 39.54 CRITERION= .3954E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.194
HT FLOW CONVERGENCE VALUE= .3728E-02 CRITERION= .2997E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8318E-03
HT FLOW CONVERGENCE VALUE= .1138E-05 CRITERION= .2997E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 91
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32322.300 TIME= 01:13:34

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:13:34 NOV 09, 1995 CP= 32322.740
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.90 CRITERION= .4290E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.406
HT FLOW CONVERGENCE VALUE= .3598E-02 CRITERION= .2567E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8059E-03
HT FLOW CONVERGENCE VALUE= .9539E-06 CRITERION= .2567E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 93
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32783.470 TIME= 01:30:21

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:30:22 NOV 09, 1995 CP= 32783.920
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.85 CRITERION= .4085E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.325
HT FLOW CONVERGENCE VALUE= .3072E-02 CRITERION= .2215E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6906E-03
HT FLOW CONVERGENCE VALUE= .7119E-06 CRITERION= .2215E-03 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 95
*** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33250.530 TIME= 01:47:14
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:47:15 NOV 09, 1995 CP= 33250.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.50 CRITERION= .3650E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.109
HT FLOW CONVERGENCE VALUE= .2482E-02 CRITERION= .1927E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5595E-03
HT FLOW CONVERGENCE VALUE= .5059E-06 CRITERION= .1927E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 97
*** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 33709.160

Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:03:59 NOV 09, 1995 CP= 33709.170
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME
2 NSOL 7655 TEMP peakgls 69.88 .1000E-05 184.4 .1578E+10

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= .157788003E+10

***** ROUTINE COMPLETED ***** CP = 33709.570

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:04:02 NOV 09, 1995 CP= 33709.620
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+10

SET COMMAND GOT LOAD STEP= 26 SUBSTEP= 1 CUMULATIVE ITERATION= 69
TIME/FREQUENCY= .15779E+10

TITLE=
DHLW WP at Time of Peak Temp. (50.000001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (50.000001 years)

*** WARNING *** CP= 33749.300 TIME= 02:04:59
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 33749.340 TIME= 02:04:59
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 48
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 176.73 BY .62387E-01 TO 184.65

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.

DISPLAY TITLE=

DHLW WP at 5 years

*** WARNING *** CP= 33796.920 TIME= 02:05:53

The selected element set contains mixed materials.

This could invalidate error estimation.

*** WARNING *** CP= 33796.950 TIME= 02:05:53

The selected element set contains mixed element stiffness types.

This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0

USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 60

TIME/FREQUENCY= .31558E+09

TITLE=

DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.

- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 176.73 BY .62387E-01 TO 184.65

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.

DISPLAY TITLE=

DHLW WP at 10 years

*** WARNING *** CP= 33843.610 TIME= 02:06:49

The selected element set contains mixed materials.

This could invalidate error estimation.

*** WARNING *** CP= 33843.640 TIME= 02:06:49

The selected element set contains mixed element stiffness types.

This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0

USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 4

TIME/FREQUENCY= .10000E-05

TITLE=

DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.

- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 176.73 BY .62387E-01 TO 184.65

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.

DISPLAY TITLE=

DHLW WP at 50 years

*** WARNING *** CP= 33862.450 TIME= 02:07:10
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 33862.490 TIME= 02:07:10
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 79
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 176.73 BY .62387E-01 TO 184.65

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 33909.460 TIME= 02:08:03
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 33909.500 TIME= 02:08:03
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 33918.000

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 02:08:13 NOV 09, 1995 CP= 33918.000
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2 NSOL	7952 TEMP	t94i045	69.80	.1000E-05	183.1	.1578E+10
3 NSOL	7726 TEMP	t94o045	69.82	.1000E-05	183.1	.1578E+10
4 NSOL	7730 TEMP	h94i045	72.78	.1000E-05	184.5	.1578E+10
5 NSOL	7654 TEMP	c94i045	71.08	.1000E-05	184.4	.1578E+10
6 NSOL	7686 TEMP	h94o045	64.61	.1000E-05	182.7	.1578E+10
7 NSOL	7667 TEMP	s94i045	53.76	.1000E-05	180.0	.1893E+10
8 NSOL	7929 TEMP	s94o045	53.69	.1000E-05	180.0	.1893E+10
9 NSOL	8013 TEMP	i94i045	38.74	.1000E-05	178.8	.1893E+10
10 NSOL	8030 TEMP	i94o045	38.61	.1000E-05	178.7	.1893E+10
11 NSOL	8145 TEMP	o94o045	38.48	.1000E-05	178.7	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 02:08:17 NOV 09, 1995 CP= 33920.230
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	69.7962	69.8171	72.7821	71.0783	64.6131	53.7572
.20000E-05	69.8003	69.8213	72.7866	71.0830	64.6180	53.7621
31.558	69.8000	69.8209	72.7863	71.0828	64.6177	53.7619
.31558E+07	85.0006	85.0223	88.1577	86.6347	80.3529	69.6729

.63116E+07	91.8603	91.8823	95.0898	93.6489	87.4558	76.8664
.94673E+07	96.6014	96.6235	99.8786	98.4952	92.3677	81.8484
.12623E+08	100.303	100.325	103.616	102.279	96.2052	85.7453
.15779E+08	103.359	103.381	106.700	105.401	99.3749	88.9682
.18935E+08	105.971	105.993	109.336	108.070	102.086	91.7279
.22090E+08	108.262	108.284	111.646	110.410	104.464	94.1523
.25246E+08	110.288	110.310	113.688	112.478	106.568	96.2991
.28402E+08	112.113	112.135	115.526	114.340	108.464	98.2356
.31558E+08	113.788	113.810	117.214	116.049	110.204	100.015
.63115E+08	125.596	125.618	129.077	128.071	122.482	112.634
.94673E+08	133.076	133.098	136.560	135.657	130.272	120.716
.12623E+09	138.928	138.950	142.395	141.574	136.369	127.081
.15779E+09	143.961	143.983	147.400	146.650	141.611	132.577
.18935E+09	148.166	148.187	151.569	150.877	145.992	137.198
.22090E+09	151.608	151.629	154.967	154.324	149.581	141.015
.25246E+09	154.646	154.667	157.957	157.358	152.750	144.402
.28402E+09	156.881	156.901	160.137	159.571	155.087	146.946
.31558E+09	158.695	158.715	161.892	161.355	156.988	149.046
.63115E+09	171.508	171.524	174.138	173.800	170.412	164.172
.94673E+09	179.642	179.654	181.782	181.557	178.900	173.965
.12623E+10	182.461	182.472	184.184	184.018	181.908	177.977
.15779E+10	183.142	183.150	184.525	184.395	182.708	179.561
.18935E+10	182.902	182.908	184.015	183.910	182.553	180.022
.22090E+10	182.066	182.071	182.964	182.878	181.780	179.734
.25246E+10	180.612	180.617	181.340	181.268	180.374	178.710
.28402E+10	179.270	179.274	179.863	179.802	179.070	177.709
.31558E+10	178.030	178.033	178.516	178.465	177.861	176.739
.63115E+10	171.826	171.827	171.945	171.930	171.780	171.502
.94673E+10	167.139	167.139	167.209	167.200	167.109	166.942
.12623E+11	164.710	164.710	164.765	164.758	164.685	164.552
.15779E+11	163.145	163.146	163.191	163.185	163.124	163.013
.18935E+11	161.317	161.317	161.355	161.350	161.298	161.204
.22090E+11	159.130	159.130	159.162	159.157	159.114	159.033
.25246E+11	156.729	156.730	156.757	156.753	156.715	156.646
.28402E+11	154.409	154.409	154.433	154.429	154.396	154.337
.31558E+11	152.304	152.304	152.324	152.321	152.292	152.241

***** ANSYS - ENGINEERING ANALYSIS SYSTEM, REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:17 NOV 09, 1995 CP= 33920.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP. at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP	8013 TEMP	8030 TEMP	8145 TEMP
	s94o045	i94i045	i94o045	o94o045
.10000E-05	53.6879	38.7443	38.6147	38.4784
.20000E-05	53.6928	38.7480	38.6184	38.4821
31.558	53.6926	38.7480	38.6184	38.4821
.31558E+07	69.6060	56.9968	56.8686	56.7326
.63116E+07	76.8005	65.0967	64.9693	64.8336
.94673E+07	81.7831	70.6652	70.5385	70.4031
.12623E+08	85.6807	74.9996	74.8733	74.7383
.15779E+08	88.9041	78.5716	78.4459	78.3112
.18935E+08	91.6641	81.6219	81.4967	81.3624
.22090E+08	94.0889	84.2958	84.1710	84.0370
.25246E+08	96.2362	86.6596	86.5352	86.4016
.28402E+08	98.1731	88.7885	88.6645	88.5312
.31558E+08	99.9532	90.7426	90.6190	90.4860
.63115E+08	112.575	104.545	104.426	104.297
.94673E+08	120.659	113.349	113.234	113.110
.12623E+09	127.026	120.264	120.153	120.034
.15779E+09	132.524	126.216	126.109	125.994
.18935E+09	137.147	131.215	131.112	131.000
.22090E+09	140.965	135.349	135.248	135.140
.25246E+09	144.354	139.017	138.919	138.814

.28402E+09	146.899	141.790	141.695	141.593
.31558E+09	149.000	144.092	144.000	143.901
.63115E+09	164.136	160.676	160.605	160.529
.94673E+09	173.937	171.382	171.326	171.266
.12623E+10	177.955	175.976	175.931	175.884
.15779E+10	179.543	177.977	177.942	177.904
.18935E+10	180.008	178.753	178.725	178.694
.22090E+10	179.723	178.707	178.684	178.660
.25246E+10	178.700	177.869	177.851	177.831
.28402E+10	177.701	177.017	177.002	176.985
.31558E+10	176.733	176.166	176.154	176.140
.63115E+10	171.500	171.355	171.352	171.348
.94673E+10	166.941	166.851	166.849	166.847
.12623E+11	164.551	164.479	164.477	164.476
.15779E+11	163.012	162.951	162.950	162.948
.18935E+11	161.204	161.151	161.150	161.149
.22090E+11	159.033	158.988	158.987	158.986
.25246E+11	156.646	156.606	156.605	156.605
.28402E+11	154.337	154.302	154.301	154.300
.31558E+11	152.240	152.209	152.209	152.208

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 33920.450 TIME= 02:08:18
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7947 TEMP	t04i045	69.08	.1000E-05	183.1	.1578E+10
3	NSOL	7718 TEMP	t04o045	69.10	.1000E-05	183.1	.1578E+10
4	NSOL	7720 TEMP	h04i045	72.10	.1000E-05	184.5	.1578E+10
5	NSOL	7642 TEMP	c04i045	70.30	.1000E-05	184.4	.1578E+10
6	NSOL	7679 TEMP	h04o045	63.89	.1000E-05	182.7	.1578E+10
7	NSOL	7662 TEMP	s04i045	52.97	.1000E-05	180.0	.1893E+10
8	NSOL	7927 TEMP	s04o045	52.90	.1000E-05	180.0	.1893E+10
9	NSOL	8008 TEMP	i04i045	38.25	.1000E-05	178.7	.1893E+10
10	NSOL	8027 TEMP	i04o045	38.12	.1000E-05	178.7	.1893E+10
11	NSOL	8142 TEMP	o04o045	37.98	.1000E-05	178.7	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:20 NOV 09, 1995 CP= 33922.370
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	69.0823	69.1044	72.1020	70.2951	63.8929	52.9658
.20000E-05	69.0864	69.1084	72.1062	70.2996	63.8975	52.9704
31.558	69.0861	69.1081	72.1060	70.2993	63.8973	52.9702
.31558E+07	84.4292	84.4522	87.6325	86.0115	79.7857	69.0285
.63116E+07	91.3436	91.3670	94.6245	93.0877	86.9476	76.2784
.94673E+07	96.1198	96.1435	99.4519	97.9741	91.8975	81.2966
.12623E+08	99.8471	99.8709	103.218	101.787	95.7631	85.2204
.15779E+08	102.923	102.947	106.325	104.934	98.9550	88.4645
.18935E+08	105.552	105.576	108.979	107.622	101.684	91.2416
.22090E+08	107.858	107.882	111.305	109.978	104.079	93.6810
.25246E+08	109.896	109.920	113.360	112.060	106.196	95.8407
.28402E+08	111.731	111.755	115.211	113.935	108.103	97.7885
.31558E+08	113.416	113.440	116.908	115.656	109.854	99.5785
.63115E+08	125.287	125.311	128.841	127.752	122.202	112.265
.94673E+08	132.803	132.827	136.363	135.381	130.031	120.385
.12623E+09	138.682	138.706	142.226	141.329	136.157	126.780
.15779E+09	143.736	143.759	147.254	146.430	141.422	132.299
.18935E+09	147.958	147.981	151.440	150.677	145.822	136.939
.22090E+09	151.414	151.437	154.852	154.140	149.425	140.771
.25246E+09	154.464	154.487	157.854	157.188	152.606	144.172
.28402E+09	156.709	156.730	160.042	159.411	154.953	146.727
.31558E+09	158.531	158.552	161.805	161.205	156.862	148.837
.63115E+09	171.398	171.416	174.095	173.708	170.337	164.028
.94673E+09	179.563	179.577	181.759	181.496	178.852	173.861
.12623E+10	182.401	182.412	184.169	183.973	181.873	177.897
.15779E+10	183.094	183.103	184.514	184.360	182.681	179.498
.18935E+10	182.863	182.871	184.006	183.882	182.532	179.972
.22090E+10	182.035	182.041	182.957	182.856	181.763	179.693
.25246E+10	180.587	180.591	181.333	181.249	180.359	178.676
.28402E+10	179.249	179.253	179.857	179.787	179.058	177.681
.31558E+10	178.012	178.015	178.511	178.452	177.851	176.716
.63115E+10	171.822	171.822	171.943	171.927	171.777	171.496
.94673E+10	167.136	167.136	167.208	167.197	167.107	166.938
.12623E+11	164.708	164.708	164.764	164.756	164.684	164.549
.15779E+11	163.143	163.144	163.191	163.183	163.123	163.010
.18935E+11	161.315	161.315	161.355	161.348	161.297	161.202
.22090E+11	159.128	159.128	159.162	159.156	159.112	159.031
.25246E+11	156.728	156.728	156.757	156.752	156.714	156.645
.28402E+11	154.408	154.408	154.433	154.428	154.396	154.336
.31558E+11	152.303	152.303	152.324	152.320	152.292	152.239

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:20 NOV 09, 1995 CP= 33922.380
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	52.8982	38.2493	38.1170	37.9838
.20000E-05	52.9028	38.2528	38.1205	37.9873
31.558	52.9026	38.2528	38.1205	37.9873
.31558E+07	68.9631	56.6176	56.4869	56.3536
.63116E+07	76.2140	64.7599	64.6301	64.4970
.94673E+07	81.2328	70.3551	70.2260	70.0932
.12623E+08	85.1571	74.7089	74.5803	74.4478
.15779E+08	88.4017	78.2961	78.1680	78.0358

.18935E+08	91.1793	81.3588	81.2312	81.0993
.22090E+08	93.6190	84.0431	83.9161	83.7845
.25246E+08	95.7792	86.4159	86.2893	86.1580
.28402E+08	97.7274	88.5526	88.4264	88.2954
.31558E+08	99.5177	90.5137	90.3879	90.2572
.63115E+08	112.207	104.360	104.240	104.113
.94673E+08	120.329	113.188	113.072	112.950
.12623E+09	126.726	120.120	120.008	119.890
.15779E+09	132.247	126.086	125.977	125.864
.18935E+09	136.888	131.096	130.991	130.881
.22090E+09	140.722	135.238	135.136	135.029
.25246E+09	144.125	138.913	138.814	138.711
.28402E+09	146.681	141.692	141.596	141.496
.31558E+09	148.792	144.000	143.906	143.808
.63115E+09	163.993	160.617	160.544	160.469
.94673E+09	173.834	171.340	171.284	171.224
.12623E+10	177.876	175.944	175.899	175.853
.15779E+10	179.481	177.952	177.917	177.879
.18935E+10	179.958	178.733	178.705	178.675
.22090E+10	179.682	178.691	178.668	178.644
.25246E+10	178.667	177.856	177.838	177.818
.28402E+10	177.673	177.006	176.991	176.975
.31558E+10	176.710	176.157	176.145	176.131
.63115E+10	171.494	171.352	171.349	171.346
.94673E+10	166.937	166.849	166.847	166.845
.12623E+11	164.548	164.477	164.476	164.474
.15779E+11	163.010	162.950	162.949	162.947
.18935E+11	161.201	161.150	161.149	161.148
.22090E+11	159.031	158.987	158.986	158.985
.25246E+11	156.644	156.606	156.605	156.604
.28402E+11	154.335	154.301	154.301	154.300
.31558E+11	152.239	152.209	152.208	152.208

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 33922.590 TIME= 02:08:20
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	63 TEMP	t01i135	69.08	.1000E-05	183.1	.1578E+10
3 NSOL	20 TEMP	t01o135	69.10	.1000E-05	183.1	.1578E+10
4 NSOL	22 TEMP	h01i135	72.09	.1000E-05	184.5	.1578E+10
5 NSOL	1 TEMP	c01i135	70.28	.1000E-05	184.4	.1578E+10

6 NSOL	11 TEMP	h01o135	63.87	.1000E-05	182.7	.1578E+10
7 NSOL	6 TEMP	s01i135	52.94	.1000E-05	180.0	.1893E+10
8 NSOL	58 TEMP	s01o135	52.87	.1000E-05	180.0	.1893E+10
9 NSOL	84 TEMP	i01i135	38.21	.1000E-05	178.7	.1893E+10
10 NSOL	106 TEMP	i01o135	38.08	.1000E-05	178.7	.1893E+10
11 NSOL	124 TEMP	o01o135	37.95	.1000E-05	178.7	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:22 NOV 09, 1995 CP= 33924.520
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	69.0777	69.0998	72.0918	70.2799	63.8729	52.9411
.20000E-05	69.0818	69.1038	72.0961	70.2843	63.8774	52.9456
31.558	69.0815	69.1035	72.0958	70.2841	63.8772	52.9454
.31558E+07	84.4253	84.4483	87.6232	85.9974	79.7670	69.0053
.63116E+07	91.3400	91.3634	94.6157	93.0741	86.9295	76.2559
.94673E+07	96.1164	96.1400	99.4433	97.9608	91.8798	81.2746
.12623E+08	99.8439	99.8676	103.210	101.774	95.7457	85.1988
.15779E+08	102.920	102.944	106.317	104.921	98.9380	88.4433
.18935E+08	105.549	105.573	108.971	107.609	101.667	91.2207
.22090E+08	107.855	107.879	111.297	109.966	104.062	93.6603
.25246E+08	109.893	109.917	113.352	112.048	106.179	95.8204
.28402E+08	111.728	111.753	115.203	113.923	108.087	97.7684
.31558E+08	113.413	113.438	116.901	115.644	109.838	99.5586
.63115E+08	125.284	125.308	128.834	127.741	122.187	112.247
.94673E+08	132.801	132.825	136.356	135.371	130.018	120.368
.12623E+09	138.680	138.704	142.220	141.320	136.144	126.763
.15779E+09	143.734	143.758	147.248	146.421	141.410	132.284
.18935E+09	147.956	147.979	151.435	150.668	145.810	136.924
.22090E+09	151.413	151.435	154.847	154.132	149.414	140.757
.25246E+09	154.463	154.485	157.849	157.180	152.595	144.158
.28402E+09	156.707	156.729	160.037	159.404	154.942	146.714
.31558E+09	158.529	158.550	161.800	161.197	156.852	148.824
.63115E+09	171.397	171.415	174.091	173.702	170.330	164.019
.94673E+09	179.563	179.577	181.756	181.492	178.846	173.854
.12623E+10	182.401	182.412	184.167	183.970	181.868	177.892
.15779E+10	183.094	183.103	184.512	184.358	182.677	179.494
.18935E+10	182.863	182.870	184.004	183.880	182.529	179.968
.22090E+10	182.035	182.041	182.955	182.854	181.761	179.691
.25246E+10	180.586	180.591	181.332	181.248	180.357	178.674
.28402E+10	179.249	179.252	179.856	179.785	179.056	177.679
.31558E+10	178.012	178.015	178.511	178.451	177.850	176.715
.63115E+10	171.822	171.822	171.943	171.927	171.777	171.495
.94673E+10	167.136	167.136	167.208	167.197	167.107	166.938
.12623E+11	164.708	164.708	164.764	164.756	164.683	164.549
.15779E+11	163.143	163.144	163.191	163.183	163.123	163.010
.18935E+11	161.315	161.315	161.354	161.348	161.297	161.202
.22090E+11	159.128	159.128	159.162	159.156	159.112	159.031
.25246E+11	156.728	156.728	156.757	156.751	156.714	156.644
.28402E+11	154.408	154.408	154.432	154.428	154.395	154.335
.31558E+11	152.303	152.303	152.324	152.320	152.291	152.239

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:22 NOV 09, 1995 CP= 33924.530
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	52.8734	38.2139	38.0815	37.9479
.20000E-05	52.8780	38.2174	38.0849	37.9513
.31.558	52.8778	38.2174	38.0850	37.9513
.31558E+07	68.9399	56.5860	56.4552	56.3215
.63116E+07	76.1914	64.7300	64.6000	64.4666
.94673E+07	81.2108	70.3263	70.1970	70.0638
.12623E+08	85.1355	74.6808	74.5521	74.4192
.15779E+08	88.3805	78.2687	78.1405	78.0079
.18935E+08	91.1584	81.3320	81.2043	81.0720
.22090E+08	93.5984	84.0168	83.8897	83.7576
.25246E+08	95.7588	86.3900	86.2633	86.1316
.28402E+08	97.7072	88.5271	88.4009	88.2694
.31558E+08	99.4977	90.4886	90.3627	90.2316
.63115E+08	112.189	104.338	104.217	104.090
.94673E+08	120.312	113.167	113.051	112.929
.12623E+09	126.710	120.101	119.988	119.870
.15779E+09	132.231	126.068	125.959	125.845
.18935E+09	136.874	131.079	130.973	130.863
.22090E+09	140.708	135.221	135.119	135.012
.25246E+09	144.111	138.898	138.798	138.695
.28402E+09	146.667	141.677	141.581	141.480
.31558E+09	148.779	143.985	143.892	143.793
.63115E+09	163.984	160.606	160.534	160.458
.94673E+09	173.827	171.332	171.276	171.216
.12623E+10	177.870	175.938	175.893	175.846
.15779E+10	179.476	177.947	177.912	177.874
.18935E+10	179.954	178.729	178.701	178.671
.22090E+10	179.679	178.688	178.665	178.641
.25246E+10	178.665	177.854	177.835	177.815
.28402E+10	177.671	177.004	176.989	176.973
.31558E+10	176.709	176.156	176.143	176.129
.63115E+10	171.494	171.352	171.349	171.346
.94673E+10	166.937	166.849	166.847	166.845
.12623E+11	164.548	164.477	164.476	164.474
.15779E+11	163.010	162.950	162.949	162.947
.18935E+11	161.201	161.150	161.149	161.148
.22090E+11	159.031	158.987	158.986	158.985
.25246E+11	156.644	156.605	156.605	156.604
.28402E+11	154.335	154.301	154.300	154.300
.31558E+11	152.239	152.209	152.208	152.208

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 33924.740 TIME= 02:08:22
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045

VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045

VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045

VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045

VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045

VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7951 TEMP	tb4i045	57.17	.1000E-05	181.1	.1893E+10
3	NSOL	7722 TEMP	tb4o045	57.15	.1000E-05	181.1	.1893E+10
4	NSOL	7724 TEMP	hb4i045	54.86	.1000E-05	180.5	.1893E+10
5	NSOL	7650 TEMP	cb4i045	52.89	.1000E-05	180.2	.1893E+10
6	NSOL	7682 TEMP	hb4o045	50.50	.1000E-05	179.8	.1893E+10
7	NSOL	7666 TEMP	sb4i045	47.80	.1000E-05	179.4	.1893E+10
8	NSOL	7928 TEMP	sb4o045	47.77	.1000E-05	179.4	.1893E+10
9	NSOL	8012 TEMP	ib4i045	37.15	.1000E-05	178.5	.1893E+10
10	NSOL	8029 TEMP	ib4o045	37.04	.1000E-05	178.5	.1893E+10
11	NSOL	8144 TEMP	ob4o045	36.93	.1000E-05	178.5	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:24 NOV 09, 1995 CP= 33926.670
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	57.1716	57.1451	54.8649	52.8855	50.4993	47.7968
.20000E-05	57.1773	57.1507	54.8701	52.8905	50.5040	47.8014
31.558	57.1771	57.1506	54.8700	52.8903	50.5039	47.8013
.31558E+07	73.3356	73.3081	71.0364	69.1542	66.9118	64.3618
.63116E+07	80.6175	80.5896	78.3259	76.4884	74.3095	71.8250
.94673E+07	85.6499	85.6219	83.3664	81.5611	79.4270	76.9885
.12623E+08	89.5801	89.5519	87.3045	85.5251	83.4266	81.0247
.15779E+08	92.8260	92.7978	90.5583	88.8010	86.7323	84.3611
.18935E+08	95.6015	95.5733	93.3421	91.6042	89.5614	87.2171
.22090E+08	98.0366	98.0084	95.7856	94.0656	92.0459	89.7254
.25246E+08	100.191	100.162	97.9477	96.2438	94.2455	91.9465
.28402E+08	102.132	102.104	99.8967	98.2076	96.2286	93.9499
.31558E+08	103.914	103.886	101.687	100.012	98.0508	95.7911
.63115E+08	116.507	116.479	114.351	112.783	110.960	108.846
.94673E+08	124.523	124.496	122.431	120.943	119.219	117.210
.12623E+09	130.813	130.786	128.781	127.360	125.718	123.799
.15779E+09	136.229	136.202	134.254	132.893	131.324	129.484
.18935E+09	140.767	140.741	138.846	137.539	136.035	134.266
.22090E+09	144.501	144.476	142.632	141.373	139.926	138.220
.25246E+09	147.808	147.783	145.988	144.773	143.379	141.731
.28402E+09	150.272	150.248	148.499	147.322	145.974	144.378
.31558E+09	152.295	152.271	150.566	149.425	148.119	146.571
.63115E+09	166.738	166.719	165.386	164.529	163.553	162.382
.94673E+09	175.996	175.981	174.931	174.274	173.526	172.623
.12623E+10	179.593	179.581	178.747	178.230	177.642	176.931
.15779E+10	180.853	180.844	180.178	179.766	179.297	178.731
.18935E+10	181.061	181.053	180.518	180.187	179.811	179.356
.22090E+10	180.574	180.568	180.135	179.867	179.563	179.195
.25246E+10	179.393	179.388	179.035	178.817	178.569	178.269
.28402E+10	178.267	178.263	177.975	177.796	177.592	177.346
.31558E+10	177.200	177.196	176.959	176.811	176.642	176.439
.63115E+10	171.616	171.615	171.556	171.519	171.476	171.425
.94673E+10	167.010	167.010	166.974	166.951	166.925	166.894
.12623E+11	164.607	164.606	164.578	164.560	164.539	164.514
.15779E+11	163.058	163.058	163.035	163.019	163.002	162.981
.18935E+11	161.243	161.242	161.222	161.209	161.194	161.177

.22090E+11	159.066	159.066	159.049	159.038	159.025	159.010
.25246E+11	156.674	156.674	156.659	156.650	156.639	156.626
.28402E+11	154.361	154.361	154.348	154.340	154.330	154.319
.31558E+11	152.262	152.261	152.250	152.243	152.235	152.225

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:24 NOV 09, 1995 CP= 33926.680
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP sb4o045	8012 TEMP ib4i045	8029 TEMP ib4o045	8144 TEMP ob4o045
.10000E-05	47.7669	37.1479	37.0416	36.9319
.20000E-05	47.7715	37.1511	37.0448	36.9351
.31558E+07	47.7714	37.1512	37.0449	36.9352
.63115E+07	64.3339	55.5043	55.3991	55.2907
.94673E+07	71.7979	63.6545	63.5498	63.4422
.12623E+08	76.9620	69.2591	69.1549	69.0479
.15779E+08	80.9986	73.6222	73.5184	73.4120
.18935E+08	84.3355	77.2184	77.1151	77.0091
.22090E+08	87.1917	80.2898	80.1868	80.0812
.25246E+08	89.7003	82.9824	82.8798	82.7746
.28402E+08	91.9216	85.3631	85.2608	85.1560
.31558E+08	93.9253	87.5073	87.4053	87.3010
.63115E+08	95.7667	89.4757	89.3740	89.2700
.94673E+08	108.823	103.388	103.290	103.190
.12623E+09	117.189	112.271	112.176	112.080
.15779E+09	123.778	119.249	119.158	119.065
.18935E+09	129.465	125.256	125.168	125.079
.22090E+09	134.247	130.302	130.217	130.131
.25246E+09	138.202	134.476	134.394	134.310
.28402E+09	141.714	138.181	138.101	138.020
.31558E+09	144.361	140.985	140.907	140.829
.63115E+09	146.554	143.316	143.240	143.164
.94673E+09	162.370	160.112	160.053	159.995
.12623E+10	172.614	170.957	170.911	170.865
.15779E+10	176.923	175.644	175.608	175.572
.18935E+10	178.725	177.714	177.685	177.656
.22090E+10	179.351	178.542	178.519	178.496
.25246E+10	179.191	178.537	178.518	178.500
.28402E+10	178.266	177.730	177.715	177.700
.31558E+10	177.343	176.903	176.890	176.878
.63115E+10	176.437	176.072	176.062	176.051
.94673E+10	171.425	171.331	171.328	171.326
.12623E+11	166.894	166.836	166.835	166.833
.15779E+11	164.514	164.467	164.466	164.464
.18935E+11	162.981	162.941	162.940	162.939
.22090E+11	161.177	161.143	161.142	161.141
.25246E+11	159.010	158.980	158.979	158.979
.28402E+11	156.626	156.600	156.599	156.599
.31558E+11	154.319	154.296	154.296	154.295
	152.225	152.205	152.204	152.204

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 33926.890 TIME= 02:08:24
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1033 TEMP	t01i135	57.16	.1000E-05	181.1	.1893E+10
3	NSOL	733 TEMP	t01o135	57.14	.1000E-05	181.1	.1893E+10
4	NSOL	735 TEMP	h01i135	54.85	.1000E-05	180.5	.1893E+10
5	NSOL	679 TEMP	c01i135	52.87	.1000E-05	180.2	.1893E+10
6	NSOL	704 TEMP	h01o135	50.48	.1000E-05	179.8	.1893E+10
7	NSOL	691 TEMP	s01i135	47.77	.1000E-05	179.4	.1893E+10
8	NSOL	1018 TEMP	s01o135	47.74	.1000E-05	179.3	.1893E+10
9	NSOL	1292 TEMP	i01i135	37.11	.1000E-05	178.5	.1893E+10
10	NSOL	1307 TEMP	i01o135	37.01	.1000E-05	178.5	.1893E+10
11	NSOL	2078 TEMP	o01o135	36.90	.1000E-05	178.5	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:26 NOV 09, 1995 CP= 33928.820
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	57.1647	57.1381	54.8531	52.8695	50.4795	47.7734
.20000E-05	57.1703	57.1437	54.8584	52.8745	50.4842	47.7779
31.558	57.1702	57.1436	54.8582	52.8743	50.4840	47.7778
.31558E+07	73.3295	73.3020	71.0257	69.1394	66.8934	64.3399
.63116E+07	80.6118	80.5839	78.3156	76.4742	74.2918	71.8039
.94673E+07	85.6445	85.6164	83.3563	81.5472	79.4097	76.9679
.12623E+08	89.5748	89.5466	87.2947	85.5116	83.4096	81.0045
.15779E+08	92.8210	92.7927	90.5487	88.7877	86.7157	84.3413
.18935E+08	95.5966	95.5683	93.3326	91.5911	89.5451	87.1975
.22090E+08	98.0318	98.0035	95.7764	94.0527	92.0298	89.7061
.25246E+08	100.186	100.158	97.9386	96.2311	94.2295	91.9274
.28402E+08	102.127	102.099	99.8877	98.1950	96.2129	93.9311
.31558E+08	103.910	103.882	101.678	99.9992	98.0352	95.7725
.63115E+08	116.503	116.475	114.343	112.772	110.946	108.829
.94673E+08	124.519	124.492	122.423	120.932	119.205	117.194
.12623E+09	130.810	130.783	128.774	127.350	125.706	123.784
.15779E+09	136.225	136.199	134.247	132.883	131.313	129.470
.18935E+09	140.764	140.738	138.840	137.530	136.024	134.252
.22090E+09	144.499	144.473	142.626	141.364	139.916	138.207
.25246E+09	147.805	147.781	145.982	144.765	143.368	141.718
.28402E+09	150.270	150.245	148.493	147.314	145.964	144.366
.31558E+09	152.293	152.269	150.560	149.417	148.109	146.559
.63115E+09	166.736	166.717	165.382	164.524	163.545	162.374

.94673E+09	175.995	175.979	174.928	174.269	173.520	172.617
.12623E+10	179.592	179.580	178.745	178.227	177.638	176.926
.15779E+10	180.853	180.843	180.176	179.763	179.294	178.727
.18935E+10	181.060	181.053	180.516	180.185	179.808	179.353
.22090E+10	180.574	180.567	180.134	179.866	179.561	179.193
.25246E+10	179.392	179.387	179.034	178.816	178.567	178.267
.28402E+10	178.267	178.263	177.974	177.795	177.591	177.344
.31558E+10	177.200	177.196	176.958	176.810	176.641	176.438
.63115E+10	171.616	171.615	171.556	171.518	171.476	171.425
.94673E+10	167.010	167.010	166.974	166.951	166.925	166.894
.12623E+11	164.607	164.606	164.578	164.560	164.539	164.514
.15779E+11	163.058	163.058	163.034	163.019	163.002	162.981
.18935E+11	161.243	161.242	161.222	161.209	161.194	161.177
.22090E+11	159.066	159.066	159.049	159.038	159.025	159.010
.25246E+11	156.674	156.674	156.659	156.650	156.639	156.626
.28402E+11	154.361	154.361	154.348	154.340	154.330	154.319
.31558E+11	152.262	152.261	152.250	152.243	152.235	152.225

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:26 NOV 09, 1995 CP= 33928.830
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	47.7434	37.1150	37.0086	36.8988
.20000E-05	47.7480	37.1182	37.0119	36.9020
31.558	47.7479	37.1183	37.0119	36.9021
.31558E+07	64.3120	55.4749	55.3696	55.2611
.63116E+07	71.7768	63.6265	63.5218	63.4141
.94673E+07	76.9414	69.2320	69.1278	69.0207
.12623E+08	80.9784	73.5959	73.4921	73.3855
.15779E+08	84.3156	77.1927	77.0893	76.9833
.18935E+08	87.1721	80.2646	80.1616	80.0560
.22090E+08	89.6810	82.9577	82.8550	82.7498
.25246E+08	91.9026	85.3388	85.2364	85.1316
.28402E+08	93.9065	87.4833	87.3813	87.2769
.31558E+08	95.7481	89.4520	89.3504	89.2463
.63115E+08	108.806	103.366	103.268	103.168
.94673E+08	117.173	112.251	112.157	112.061
.12623E+09	123.763	119.231	119.139	119.047
.15779E+09	129.451	125.239	125.150	125.061
.18935E+09	134.234	130.286	130.201	130.115
.22090E+09	138.189	134.461	134.378	134.295
.25246E+09	141.701	138.166	138.086	138.005
.28402E+09	144.349	140.971	140.893	140.815
.31558E+09	146.543	143.302	143.226	143.150
.63115E+09	162.361	160.102	160.043	159.985
.94673E+09	172.607	170.949	170.903	170.858
.12623E+10	176.918	175.638	175.602	175.566
.15779E+10	178.721	177.709	177.680	177.652
.18935E+10	179.348	178.539	178.515	178.492
.22090E+10	179.189	178.534	178.515	178.497
.25246E+10	178.263	177.728	177.713	177.698
.28402E+10	177.342	176.901	176.888	176.876
.31558E+10	176.436	176.070	176.060	176.050
.63115E+10	171.424	171.330	171.328	171.325
.94673E+10	166.894	166.836	166.834	166.833
.12623E+11	164.514	164.467	164.465	164.464
.15779E+11	162.981	162.941	162.940	162.939
.18935E+11	161.176	161.142	161.142	161.141
.22090E+11	159.010	158.980	158.979	158.979
.25246E+11	156.626	156.600	156.599	156.599
.28402E+11	154.319	154.296	154.296	154.295

.31558E+11 152.225 152.205 152.204 152.204

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 33929.040 TIME= 02:08:26
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	8470 TEMP	tt4i045	57.51	.1000E-05	181.3	.1893E+10
3	NSOL	8270 TEMP	tt4o045	57.53	.1000E-05	181.3	.1893E+10
4	NSOL	8272 TEMP	ht4i045	63.85	.1000E-05	183.2	.1578E+10
5	NSOL	8234 TEMP	ct4i045	63.38	.1000E-05	183.4	.1578E+10
6	NSOL	8251 TEMP	ht4o045	56.80	.1000E-05	181.8	.1893E+10
7	NSOL	8242 TEMP	st4i045	43.92	.1000E-05	179.1	.1893E+10
8	NSOL	8460 TEMP	st4o045	43.88	.1000E-05	179.1	.1893E+10
9	NSOL	8556 TEMP	it4i045	34.73	.1000E-05	178.4	.2209E+10
10	NSOL	8566 TEMP	it4o045	34.65	.1000E-05	178.4	.2209E+10
11	NSOL	8691 TEMP	ot4o045	34.56	.1000E-05	178.4	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:28 NOV 09, 1995 CP= 33930.970
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	57.5097	57.5276	63.8507	63.3793	56.8028	43.9204
.20000E-05	57.5141	57.5320	63.8548	63.3832	56.8064	43.9236
31.558	57.5139	57.5318	63.8547	63.3830	56.8063	43.9236
.31558E+07	73.8915	73.9093	80.1908	79.8576	73.5563	61.1471
.63116E+07	81.2433	81.2612	87.5206	87.2470	81.0678	68.8666
.94673E+07	86.3161	86.3339	92.5756	92.3432	86.2507	74.1968
.12623E+08	90.2728	90.2906	96.5167	96.3164	90.2932	78.3568
.15779E+08	93.5376	93.5554	99.7667	99.5929	93.6284	81.7917
.18935E+08	96.3272	96.3449	102.542	102.391	96.4783	84.7293
.22090E+08	98.7730	98.7907	104.975	104.844	98.9774	87.3075

.25246E+08	100.935	100.952	107.123	107.010	101.187	89.5890
.28402E+08	102.882	102.899	109.058	108.961	103.176	91.6456
.31558E+08	104.669	104.686	110.832	110.750	105.003	93.5350
.63115E+08	117.274	117.291	123.313	123.334	117.876	106.912
.94673E+08	125.282	125.299	131.196	131.278	126.039	115.468
.12623E+09	131.558	131.575	137.348	137.475	132.426	122.200
.15779E+09	136.957	136.973	142.625	142.788	137.912	128.003
.18935E+09	141.477	141.493	147.025	147.217	142.498	132.882
.22090E+09	145.193	145.208	150.622	150.835	146.260	136.916
.25246E+09	148.481	148.496	153.793	154.022	149.583	140.496
.28402E+09	150.928	150.942	156.124	156.364	152.048	143.200
.31558E+09	152.934	152.948	158.016	158.262	154.063	145.443
.63115E+09	167.233	167.245	171.296	171.561	168.320	161.605
.94673E+09	176.381	176.391	179.631	179.877	177.342	172.057
.12623E+10	179.898	179.905	182.499	182.706	180.696	176.496
.15779E+10	181.097	181.103	183.183	183.353	181.747	178.387
.18935E+10	181.257	181.262	182.936	183.073	181.783	179.081
.22090E+10	180.733	180.737	182.090	182.200	181.157	178.973
.25246E+10	179.523	179.526	180.625	180.713	179.863	178.087
.28402E+10	178.374	178.377	179.275	179.346	178.650	177.196
.31558E+10	177.288	177.290	178.029	178.087	177.513	176.315
.63115E+10	171.638	171.638	171.821	171.834	171.691	171.393
.94673E+10	167.024	167.024	167.133	167.140	167.054	166.875
.12623E+11	164.617	164.618	164.704	164.710	164.641	164.498
.15779E+11	163.068	163.068	163.140	163.144	163.087	162.967
.18935E+11	161.250	161.250	161.311	161.315	161.266	161.165
.22090E+11	159.073	159.073	159.125	159.128	159.086	159.000
.25246E+11	156.680	156.680	156.724	156.727	156.691	156.617
.28402E+11	154.366	154.366	154.404	154.406	154.375	154.311
.31558E+11	152.266	152.266	152.299	152.301	152.274	152.218

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:28 NOV 09, 1995 CP= 33930.980
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	43.8752	34.7331	34.6512	34.5643
.20000E-05	43.8784	34.7355	34.6535	34.5667
31.558	43.8783	34.7356	34.6536	34.5667
.31558E+07	61.1043	53.5394	53.4588	53.3728
.63116E+07	68.8249	61.8585	61.7787	61.6931
.94673E+07	74.1557	67.5706	67.4913	67.4062
.12623E+08	78.3162	72.0129	71.9340	71.8493
.15779E+08	81.7516	75.6717	75.5932	75.5088
.18935E+08	84.6896	78.7947	78.7167	78.6325
.22090E+08	87.2681	81.5314	81.4537	81.3698
.25246E+08	89.5499	83.9501	83.8727	83.7891
.28402E+08	91.6068	86.1279	86.0507	85.9675
.31558E+08	93.4964	88.1265	88.0496	87.9666
.63115E+08	106.875	102.239	102.165	102.084
.94673E+08	115.433	111.236	111.165	111.088
.12623E+09	122.166	118.300	118.232	118.158
.15779E+09	127.971	124.377	124.311	124.240
.18935E+09	132.850	129.481	129.417	129.348
.22090E+09	136.886	133.702	133.641	133.574
.25246E+09	140.467	137.448	137.388	137.323
.28402E+09	143.172	140.287	140.228	140.165
.31558E+09	145.415	142.647	142.590	142.528
.63115E+09	161.584	159.649	159.606	159.559
.94673E+09	172.041	170.619	170.585	170.548
.12623E+10	176.483	175.385	175.358	175.329
.15779E+10	178.377	177.509	177.488	177.465

.18935E+10	179.073	178.379	178.362	178.343
.22090E+10	178.966	178.405	178.391	178.376
.25246E+10	178.081	177.622	177.611	177.599
.28402E+10	177.192	176.814	176.805	176.795
.31558E+10	176.311	175.998	175.991	175.982
.63115E+10	171.392	171.312	171.310	171.308
.94673E+10	166.874	166.824	166.823	166.822
.12623E+11	164.498	164.457	164.456	164.455
.15779E+11	162.967	162.933	162.932	162.931
.18935E+11	161.165	161.136	161.135	161.134
.22090E+11	158.999	158.974	158.974	158.973
.25246E+11	156.617	156.595	156.594	156.594
.28402E+11	154.311	154.292	154.291	154.291
.31558E+11	152.218	152.201	152.200	152.200

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 33931.190 TIME= 02:08:29
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1206 TEMP	t01i135	57.51	.1000E-05	181.3	.1893E+10
3	NSOL	885 TEMP	t01o135	57.52	.1000E-05	181.3	.1893E+10
4	NSOL	887 TEMP	h01i135	63.84	.1000E-05	183.2	.1578E+10
5	NSOL	849 TEMP	c01i135	63.37	.1000E-05	183.4	.1578E+10
6	NSOL	866 TEMP	h01o135	56.78	.1000E-05	181.8	.1893E+10
7	NSOL	857 TEMP	s01i135	43.90	.1000E-05	179.1	.1893E+10
8	NSOL	1196 TEMP	s01o135	43.85	.1000E-05	179.1	.1893E+10
9	NSOL	1394 TEMP	i01i135	34.70	.1000E-05	178.4	.2209E+10
10	NSOL	1404 TEMP	i01o135	34.62	.1000E-05	178.4	.2209E+10
11	NSOL	2146 TEMP	o01o135	34.53	.1000E-05	178.4	.2209E+10

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 ***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:30 NOV 09, 1995 CP= 33933.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	57.5065	57.5244	63.8417	63.3652	56.7841	43.8973
.20000E-05	57.5108	57.5287	63.8458	63.3691	56.7877	43.9005
31.558	57.5107	57.5286	63.8456	63.3690	56.7876	43.9004
.31558E+07	73.8888	73.9066	80.1827	79.8448	73.5391	61.1257
.63116E+07	81.2409	81.2587	87.5128	87.2346	81.0512	68.8461
.94673E+07	86.3138	86.3316	92.5681	92.3312	86.2346	74.1768
.12623E+08	90.2706	90.2884	96.5093	96.3047	90.2774	78.3372
.15779E+08	93.5355	93.5532	99.7595	99.5814	93.6129	81.7725
.18935E+08	96.3251	96.3428	102.535	102.380	96.4631	84.7104
.22090E+08	98.7711	98.7887	104.968	104.833	98.9624	87.2889
.25246E+08	100.933	100.950	107.117	106.999	101.172	89.5706
.28402E+08	102.880	102.897	109.051	108.950	103.162	91.6275
.31558E+08	104.667	104.685	110.826	110.740	104.988	93.5171
.63115E+08	117.272	117.289	123.307	123.324	117.862	106.896
.94673E+08	125.281	125.298	131.191	131.269	126.027	115.452
.12623E+09	131.557	131.573	137.343	137.467	132.415	122.185
.15779E+09	136.956	136.972	142.620	142.780	137.901	127.990
.18935E+09	141.476	141.492	147.021	147.209	142.487	132.869
.22090E+09	145.192	145.207	150.618	150.827	146.250	136.903
.25246E+09	148.480	148.495	153.789	154.015	149.574	140.485
.28402E+09	150.927	150.941	156.120	156.357	152.039	143.189
.31558E+09	152.933	152.947	158.012	158.256	154.054	145.432
.63115E+09	167.233	167.244	171.294	171.556	168.314	161.597
.94673E+09	176.381	176.390	179.629	179.873	177.337	172.051
.12623E+10	179.898	179.905	182.497	182.703	180.693	176.491
.15779E+10	181.097	181.103	183.182	183.351	181.744	178.383
.18935E+10	181.257	181.262	182.935	183.072	181.780	179.078
.22090E+10	180.733	180.737	182.089	182.199	181.155	178.970
.25246E+10	179.523	179.526	180.624	180.712	179.862	178.085
.28402E+10	178.374	178.377	179.274	179.345	178.649	177.195
.31558E+10	177.288	177.290	178.029	178.086	177.512	176.313
.63115E+10	171.638	171.638	171.821	171.834	171.691	171.393
.94673E+10	167.024	167.024	167.133	167.140	167.054	166.874
.12623E+11	164.617	164.618	164.704	164.710	164.641	164.498
.15779E+11	163.068	163.068	163.140	163.144	163.087	162.967
.18935E+11	161.250	161.250	161.311	161.315	161.266	161.165
.22090E+11	159.073	159.073	159.124	159.128	159.086	159.000
.25246E+11	156.680	156.680	156.724	156.727	156.691	156.617
.28402E+11	154.366	154.366	154.404	154.406	154.375	154.311
.31558E+11	152.266	152.266	152.299	152.301	152.274	152.218

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP.9000/7XX 02:08:30 NOV 09, 1995 CP= 33933.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	43.8520	34.7004	34.6182	34.5307
.20000E-05	43.8552	34.7027	34.6206	34.5330
31.558	43.8551	34.7028	34.6206	34.5330
.31558E+07	61.0829	53.5101	53.4294	53.3427
.63116E+07	68.8043	61.8307	61.7507	61.6645
.94673E+07	74.1357	67.5438	67.4643	67.3785
.12623E+08	78.2966	71.9868	71.9078	71.8224
.15779E+08	81.7324	75.6463	75.5677	75.4826
.18935E+08	84.6707	78.7699	78.6916	78.6068
.22090E+08	87.2495	81.5070	81.4291	81.3446
.25246E+08	89.5315	83.9261	83.8485	83.7643
.28402E+08	91.5887	86.1042	86.0269	85.9430
.31558E+08	93.4785	88.1031	88.0261	87.9424

.63115E+08	106.859	102.217	102.144	102.063
.94673E+08	115.418	111.217	111.146	111.068
.12623E+09	122.152	118.282	118.213	118.139
.15779E+09	127.957	124.360	124.294	124.222
.18935E+09	132.838	129.465	129.401	129.331
.22090E+09	136.873	133.687	133.625	133.557
.25246E+09	140.456	137.433	137.373	137.308
.28402E+09	143.161	140.272	140.214	140.150
.31558E+09	145.404	142.633	142.576	142.514
.63115E+09	161.576	159.639	159.596	159.548
.94673E+09	172.035	170.612	170.578	170.541
.12623E+10	176.478	175.379	175.352	175.323
.15779E+10	178.373	177.505	177.483	177.460
.18935E+10	179.070	178.375	178.358	178.339
.22090E+10	178.964	178.402	178.388	178.373
.25246E+10	178.079	177.620	177.609	177.596
.28402E+10	177.190	176.812	176.803	176.793
.31558E+10	176.310	175.997	175.989	175.981
.63115E+10	171.392	171.312	171.310	171.308
.94673E+10	166.874	166.824	166.823	166.822
.12623E+11	164.497	164.457	164.456	164.455
.15779E+11	162.967	162.933	162.932	162.931
.18935E+11	161.165	161.136	161.135	161.134
.22090E+11	158.999	158.974	158.974	158.973
.25246E+11	156.617	156.595	156.594	156.594
.28402E+11	154.311	154.292	154.291	154.291
.31558E+11	152.218	152.201	152.200	152.200

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 33933.350 TIME= 02:08:31
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135

VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135

VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135

VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135

VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135

VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135

VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135

VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135

VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135

VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135

VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135

VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135

VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135

VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	2751 TEMP	ot1o135	28.67	.1000E-05	177.9 .2209E+10
3	NSOL	2714 TEMP	ot1i135	28.68	.1000E-05	177.9 .2209E+10
4	NSOL	1968 TEMP	it1o135	33.39	.1000E-05	178.4 .2209E+10
5	NSOL	1931 TEMP	it1i135	33.40	.1000E-05	178.4 .2209E+10
6	NSOL	1088 TEMP	st1o135	34.30	.1000E-05	178.4 .2209E+10
7	NSOL	1082 TEMP	st1i135	34.31	.1000E-05	178.4 .2209E+10
8	NSOL	849 TEMP	ht1i135	63.37	.1000E-05	183.4 .1578E+10
9	NSOL	853 TEMP	gt1i135	66.79	.1000E-05	183.9 .1578E+10
10	NSOL	1 TEMP	co1i135	70.28	.1000E-05	184.4 .1578E+10
11	NSOL	683 TEMP	gb1i135	71.06	.1000E-05	184.4 .1578E+10
12	NSOL	684 TEMP	gb1h135	69.87	.1000E-05	184.4 .1578E+10
13	NSOL	679 TEMP	sb1i135	52.87	.1000E-05	180.2 .1893E+10
14	NSOL	962 TEMP	sb1o135	52.76	.1000E-05	180.2 .1893E+10
15	NSOL	1640 TEMP	ib1i135	38.83	.1000E-05	178.9 .1893E+10
16	NSOL	1677 TEMP	ib1o135	38.58	.1000E-05	178.8 .1893E+10
17	NSOL	2751 TEMP	ob1o135	28.67	.1000E-05	177.9 .2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:34 NOV 09, 1995 CP= 33936.470
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	28.6675	28.6828	33.3945	33.4010	34.3025	34.3112
.20000E-05	28.6685	28.6837	33.3965	33.4029	34.3047	34.3133
31.558	28.6685	28.6837	33.3965	33.4030	34.3047	34.3134
.31558E+07	48.2426	48.2559	52.4870	52.4921	53.0626	53.0702
.63116E+07	56.8737	56.8862	60.9173	60.9218	61.3813	61.3885
.94673E+07	62.7919	62.8040	66.7005	66.7047	67.0972	67.1041
.12623E+08	67.3904	67.4020	71.1957	71.1995	71.5446	71.5513
.15779E+08	71.1755	71.1868	74.8964	74.9001	75.2092	75.2157
.18935E+08	74.4048	74.4158	78.0542	78.0577	78.3380	78.3444
.22090E+08	77.2335	77.2443	80.8205	80.8238	81.0805	81.0868
.25246E+08	79.7329	79.7436	83.2648	83.2680	83.5048	83.5110
.28402E+08	81.9828	81.9932	85.4651	85.4682	85.6880	85.6941
.31558E+08	84.0471	84.0574	87.4841	87.4870	87.6919	87.6979
.63115E+08	98.6170	98.6262	101.727	101.729	101.847	101.853
.94673E+08	107.914	107.922	110.801	110.803	110.879	110.884
.12623E+09	115.209	115.216	117.920	117.921	117.970	117.975
.15779E+09	121.480	121.487	124.040	124.042	124.071	124.075
.18935E+09	126.746	126.753	129.178	129.179	129.194	129.198
.22090E+09	131.105	131.112	133.426	133.427	133.432	133.436
.25246E+09	134.972	134.979	137.195	137.196	137.192	137.196
.28402E+09	137.913	137.919	140.051	140.051	140.043	140.046
.31558E+09	140.363	140.369	142.425	142.426	142.413	142.417
.63115E+09	158.026	158.030	159.520	159.521	159.490	159.493
.94673E+09	169.413	169.416	170.537	170.537	170.505	170.507
.12623E+10	174.450	174.452	175.325	175.325	175.297	175.299
.15779E+10	176.770	176.772	177.464	177.464	177.440	177.442
.18935E+10	177.787	177.789	178.342	178.342	178.324	178.325
.22090E+10	177.927	177.928	178.375	178.375	178.360	178.361
.25246E+10	177.232	177.233	177.598	177.598	177.586	177.586
.28402E+10	176.494	176.494	176.794	176.794	176.784	176.784
.31558E+10	175.733	175.734	175.981	175.981	175.973	175.973
.63115E+10	171.245	171.245	171.307	171.307	171.305	171.306
.94673E+10	166.783	166.783	166.821	166.821	166.820	166.820
.12623E+11	164.424	164.424	164.455	164.455	164.454	164.454
.15779E+11	162.905	162.905	162.931	162.931	162.930	162.930
.18935E+11	161.112	161.112	161.134	161.134	161.133	161.133

.22090E+11	158.954	158.954	158.973	158.973	158.972	158.972
.25246E+11	156.577	156.577	156.593	156.593	156.593	156.593
.28402E+11	154.276	154.276	154.290	154.290	154.290	154.290
.31558E+11	152.187	152.187	152.199	152.199	152.199	152.199

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:34 NOV 09, 1995 CP= 33936.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	63.3652	66.7936	70.2799	71.0629	69.8688	52.8695
.20000E-05	63.3691	66.7977	70.2843	71.0676	69.8737	52.8745
31.558	63.3690	66.7975	70.2841	71.0674	69.8735	52.8743
.31558E+07	79.8448	82.9036	85.9974	86.6204	85.6516	69.1394
.63116E+07	87.2346	90.1412	93.0741	93.6351	92.7623	76.4742
.94673E+07	92.3312	95.1356	97.9608	98.4818	97.6738	81.5472
.12623E+08	96.3047	99.0310	101.774	102.265	101.507	85.5116
.15779E+08	99.5814	102.244	104.921	105.388	104.671	88.7877
.18935E+08	102.380	104.989	107.609	108.057	107.374	91.5911
.22090E+08	104.833	107.394	109.966	110.397	109.744	94.0527
.25246E+08	106.999	109.520	112.048	112.466	111.838	96.2311
.28402E+08	108.950	111.433	113.923	114.328	113.724	98.1950
.31558E+08	110.740	113.189	115.644	116.037	115.455	99.9992
.63115E+08	123.324	125.533	127.741	128.060	127.623	112.772
.94673E+08	131.269	133.322	135.371	135.647	135.299	120.932
.12623E+09	137.467	139.396	141.320	141.565	141.282	127.350
.15779E+09	142.780	144.604	146.421	146.641	146.412	132.883
.18935E+09	147.209	148.943	150.668	150.868	150.682	137.530
.22090E+09	150.827	152.484	154.132	154.315	154.162	141.364
.25246E+09	154.015	155.602	157.180	157.349	157.225	144.765
.28402E+09	156.357	157.885	159.404	159.563	159.458	147.314
.31558E+09	158.256	159.731	161.197	161.347	161.259	149.417
.63115E+09	171.556	172.634	173.702	173.794	173.799	164.524
.94673E+09	179.873	180.686	181.492	181.553	181.592	174.269
.12623E+10	182.703	183.339	183.970	184.014	184.056	178.227
.15779E+10	183.351	183.856	184.358	184.392	184.429	179.763
.18935E+10	183.072	183.478	183.880	183.908	183.938	180.185
.22090E+10	182.199	182.528	182.854	182.877	182.900	179.866
.25246E+10	180.712	180.981	181.248	181.266	181.284	178.816
.28402E+10	179.345	179.566	179.785	179.801	179.814	177.795
.31558E+10	178.086	178.269	178.451	178.464	178.474	176.810
.63115E+10	171.834	171.880	171.927	171.930	171.931	171.518
.94673E+10	167.140	167.169	167.197	167.200	167.200	166.951
.12623E+11	164.710	164.733	164.756	164.758	164.757	164.560
.15779E+11	163.144	163.164	163.183	163.185	163.184	163.019
.18935E+11	161.315	161.332	161.348	161.349	161.349	161.209
.22090E+11	159.128	159.142	159.156	159.157	159.157	159.038
.25246E+11	156.727	156.739	156.751	156.753	156.752	156.650
.28402E+11	154.406	154.417	154.428	154.429	154.428	154.340
.31558E+11	152.301	152.310	152.320	152.321	152.320	152.243

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:34 NOV 09, 1995 CP= 33936.500
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	52.7565	38.8271	38.5819	28.6675
.20000E-05	52.7614	38.8308	38.5855	28.6685
31.558	52.7613	38.8308	38.5856	28.6685
.31558E+07	69.0289	57.1771	56.9324	48.2426
.63116E+07	76.3647	65.3207	65.0764	56.8737
.94673E+07	81.4385	70.9186	70.6749	62.7919
.12623E+08	85.4034	75.2752	75.0321	67.3904
.15779E+08	88.6801	78.8651	78.6225	71.1755
.18935E+08	91.4840	81.9303	81.6882	74.4048
.22090E+08	93.9461	84.6169	84.3754	77.2335
.25246E+08	96.1251	86.9916	86.7506	79.7329
.28402E+08	98.0895	89.1299	88.8895	81.9828
.31558E+08	99.8942	91.0925	90.8526	84.0471
.63115E+08	112.671	104.943	104.711	98.6170
.94673E+08	120.834	113.765	113.541	107.914
.12623E+09	127.255	120.690	120.472	115.209
.15779E+09	132.791	126.647	126.436	121.480
.18935E+09	137.441	131.648	131.443	126.746
.22090E+09	141.277	135.779	135.580	131.105
.25246E+09	144.680	139.445	139.251	134.972
.28402E+09	147.232	142.213	142.024	137.913
.31558E+09	149.337	144.509	144.326	140.363
.63115E+09	164.460	161.026	160.883	158.026
.94673E+09	174.219	171.667	171.555	169.413
.12623E+10	178.187	176.205	176.117	174.450
.15779E+10	179.731	178.161	178.090	176.770
.18935E+10	180.159	178.901	178.844	177.787
.22090E+10	179.845	178.827	178.781	177.927
.25246E+10	178.799	177.966	177.929	177.232
.28402E+10	177.781	177.096	177.065	176.494
.31558E+10	176.798	176.231	176.206	175.733
.63115E+10	171.516	171.371	171.364	171.245
.94673E+10	166.950	166.860	166.856	166.783
.12623E+11	164.558	164.486	164.483	164.424
.15779E+11	163.018	162.957	162.955	162.905
.18935E+11	161.208	161.156	161.154	161.112
.22090E+11	159.037	158.992	158.990	158.954
.25246E+11	156.649	156.610	156.608	156.577
.28402E+11	154.339	154.305	154.304	154.276
.31558E+11	152.242	152.212	152.211	152.187

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 33936.700 TIME= 02:08:34
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045

VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9855 TEMP	ot4o045	28.67	.1000E-05	177.9	.2209E+10
3	NSOL	9818 TEMP	ot4i045	28.69	.1000E-05	177.9	.2209E+10
4	NSOL	9546 TEMP	it4o045	33.40	.1000E-05	178.4	.2209E+10
5	NSOL	9509 TEMP	it4i045	33.41	.1000E-05	178.4	.2209E+10
6	NSOL	8352 TEMP	st4o045	34.31	.1000E-05	178.4	.2209E+10
7	NSOL	8346 TEMP	st4i045	34.32	.1000E-05	178.4	.2209E+10
8	NSOL	8234 TEMP	ht4i045	63.38	.1000E-05	183.4	.1578E+10
9	NSOL	8238 TEMP	gt4i045	66.81	.1000E-05	183.9	.1578E+10
10	NSOL	7642 TEMP	c04i045	70.30	.1000E-05	184.4	.1578E+10
11	NSOL	7654 TEMP	gb4i045	71.08	.1000E-05	184.4	.1578E+10
12	NSOL	7655 TEMP	gb4h045	69.88	.1000E-05	184.4	.1578E+10
13	NSOL	7650 TEMP	sb4i045	52.89	.1000E-05	180.2	.1893E+10
14	NSOL	7871 TEMP	sb4o045	52.77	.1000E-05	180.2	.1893E+10
15	NSOL	8934 TEMP	ib4i045	38.85	.1000E-05	178.9	.1893E+10
16	NSOL	8971 TEMP	ib4o045	38.60	.1000E-05	178.8	.1893E+10
17	NSOL	9855 TEMP	ob4o045	28.67	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:37 NOV 09, 1995 CP= 33939.830
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	28.6748	28.6899	33.4020	33.4084	34.3108	34.3195
.20000E-05	28.6757	28.6908	33.4039	33.4104	34.3130	34.3217
31.558	28.6757	28.6908	33.4040	33.4104	34.3131	34.3217
.31558E+07	48.2485	48.2617	52.4933	52.4984	53.0696	53.0772
.63116E+07	56.8790	56.8915	60.9231	60.9277	61.3879	61.3951
.94673E+07	62.7970	62.8089	66.7061	66.7103	67.1034	67.1103
.12623E+08	67.3952	67.4067	71.2011	71.2049	71.5506	71.5573
.15779E+08	71.1801	71.1913	74.9017	74.9053	75.2150	75.2215
.18935E+08	74.4092	74.4201	78.0593	78.0627	78.3437	78.3501
.22090E+08	77.2378	77.2485	80.8254	80.8287	81.0860	81.0923
.25246E+08	79.7371	79.7476	83.2697	83.2728	83.5102	83.5164
.28402E+08	81.9869	81.9972	85.4699	85.4730	85.6933	85.6994
.31558E+08	84.0511	84.0613	87.4888	87.4917	87.6970	87.7031
.63115E+08	98.6204	98.6294	101.731	101.733	101.852	101.857
.94673E+08	107.917	107.925	110.805	110.807	110.883	110.888
.12623E+09	115.211	115.219	117.923	117.925	117.974	117.979
.15779E+09	121.482	121.489	124.044	124.045	124.074	124.079
.18935E+09	126.748	126.755	129.181	129.182	129.197	129.201
.22090E+09	131.107	131.114	133.429	133.430	133.435	133.439
.25246E+09	134.974	134.981	137.197	137.198	137.195	137.199

.28402E+09	137.915	137.921	140.053	140.054	140.045	140.049
.31558E+09	140.365	140.371	142.428	142.428	142.416	142.419
.63115E+09	158.027	158.031	159.522	159.522	159.492	159.494
.94673E+09	169.413	169.416	170.538	170.538	170.506	170.508
.12623E+10	174.450	174.453	175.326	175.326	175.298	175.300
.15779E+10	176.771	176.773	177.464	177.464	177.441	177.443
.18935E+10	177.788	177.789	178.343	178.343	178.324	178.325
.22090E+10	177.927	177.929	178.376	178.376	178.361	178.362
.25246E+10	177.233	177.234	177.598	177.598	177.586	177.587
.28402E+10	176.494	176.495	176.794	176.794	176.784	176.785
.31558E+10	175.733	175.734	175.981	175.981	175.973	175.974
.63115E+10	171.245	171.245	171.307	171.307	171.305	171.306
.94673E+10	166.783	166.783	166.821	166.821	166.820	166.820
.12623E+11	164.424	164.424	164.455	164.455	164.454	164.454
.15779E+11	162.905	162.905	162.931	162.931	162.930	162.930
.18935E+11	161.112	161.112	161.134	161.134	161.133	161.133
.22090E+11	158.954	158.954	158.973	158.973	158.972	158.972
.25246E+11	156.577	156.577	156.593	156.593	156.593	156.593
.28402E+11	154.276	154.276	154.290	154.290	154.290	154.290
.31558E+11	152.187	152.187	152.199	152.199	152.199	152.199

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:37 NOV 09, 1995 CP= 33939.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	63.3793	66.8081	70.2951	71.0783	69.8840	52.8855
.20000E-05	63.3832	66.8123	70.2996	71.0830	69.8889	52.8905
31.558	63.3830	66.8121	70.2993	71.0828	69.8886	52.8903
.31558E+07	79.8576	82.9170	86.0115	86.6347	85.6656	69.1542
.63116E+07	87.2470	90.1541	93.0877	93.6489	92.7758	76.4884
.94673E+07	92.3432	95.1481	97.9741	98.4952	97.6869	81.5611
.12623E+08	96.3164	99.0433	101.787	102.279	101.520	85.5251
.15779E+08	99.5929	102.256	104.934	105.401	104.684	88.8010
.18935E+08	102.391	105.000	107.622	108.070	107.386	91.6042
.22090E+08	104.844	107.406	109.978	110.410	109.756	94.0656
.25246E+08	107.010	109.531	112.060	112.478	111.850	96.2438
.28402E+08	108.961	111.445	113.935	114.340	113.736	98.2076
.31558E+08	110.750	113.200	115.656	116.049	115.466	100.012
.63115E+08	123.334	125.543	127.752	128.071	127.634	112.783
.94673E+08	131.278	133.332	135.381	135.657	135.309	120.943
.12623E+09	137.475	139.405	141.329	141.574	141.292	127.360
.15779E+09	142.788	144.613	146.430	146.650	146.420	132.893
.18935E+09	147.217	148.951	150.677	150.877	150.690	137.539
.22090E+09	150.835	152.492	154.140	154.324	154.170	141.373
.25246E+09	154.022	155.610	157.188	157.358	157.233	144.773
.28402E+09	156.364	157.892	159.411	159.571	159.466	147.322
.31558E+09	158.262	159.738	161.205	161.355	161.266	149.425
.63115E+09	171.561	172.639	173.708	173.800	173.804	164.529
.94673E+09	179.877	180.690	181.496	181.557	181.596	174.274
.12623E+10	182.706	183.342	183.973	184.018	184.059	178.230
.15779E+10	183.353	183.859	184.360	184.395	184.431	179.766
.18935E+10	183.073	183.479	183.882	183.910	183.940	180.187
.22090E+10	182.200	182.529	182.856	182.878	182.901	179.867
.25246E+10	180.713	180.982	181.249	181.268	181.285	178.817
.28402E+10	179.346	179.567	179.787	179.802	179.815	177.796
.31558E+10	178.087	178.270	178.452	178.465	178.475	176.811
.63115E+10	171.834	171.881	171.927	171.930	171.932	171.519
.94673E+10	167.140	167.169	167.197	167.200	167.200	166.951
.12623E+11	164.710	164.733	164.756	164.758	164.757	164.560
.15779E+11	163.144	163.164	163.183	163.185	163.185	163.019

.18935E+11	161.315	161.332	161.348	161.350	161.349	161.209
.22090E+11	159.128	159.142	159.156	159.157	159.157	159.038
.25246E+11	156.727	156.739	156.752	156.753	156.752	156.650
.28402E+11	154.406	154.417	154.428	154.429	154.428	154.340
.31558E+11	152.301	152.310	152.320	152.321	152.320	152.243

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:37 NOV 09, 1995 CP= 33939.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	52.7724	38.8471	38.6020	28.6748
.20000E-05	52.7774	38.8508	38.6056	28.6757
31.558	52.7772	38.8509	38.6057	28.6757
.31558E+07	69.0437	57.1952	56.9506	48.2485
.63116E+07	76.3789	65.3380	65.0938	56.8790
.94673E+07	81.4523	70.9353	70.6917	62.7970
.12623E+08	85.4170	75.2916	75.0485	67.3952
.15779E+08	88.6935	78.8812	78.6386	71.1801
.18935E+08	91.4972	81.9460	81.7040	74.4092
.22090E+08	93.9590	84.6323	84.3909	77.2378
.25246E+08	96.1378	87.0068	86.7659	79.7371
.28402E+08	98.1021	89.1450	88.9046	81.9869
.31558E+08	99.9067	91.1074	90.8676	84.0511
.63115E+08	112.682	104.956	104.725	98.6204
.94673E+08	120.845	113.778	113.553	107.917
.12623E+09	127.265	120.702	120.484	115.211
.15779E+09	132.801	126.658	126.447	121.482
.18935E+09	137.450	131.658	131.453	126.748
.22090E+09	141.286	135.790	135.590	131.107
.25246E+09	144.688	139.454	139.261	134.974
.28402E+09	147.240	142.222	142.034	137.915
.31558E+09	149.345	144.518	144.335	140.365
.63115E+09	164.466	161.032	160.890	158.027
.94673E+09	174.224	171.672	171.560	169.413
.12623E+10	178.190	176.209	176.120	174.450
.15779E+10	179.734	178.165	178.093	176.771
.18935E+10	180.161	178.904	178.847	177.788
.22090E+10	179.847	178.829	178.783	177.927
.25246E+10	178.800	177.968	177.931	177.233
.28402E+10	177.782	177.097	177.067	176.494
.31558E+10	176.799	176.232	176.207	175.733
.63115E+10	171.516	171.371	171.365	171.245
.94673E+10	166.950	166.860	166.856	166.783
.12623E+11	164.558	164.486	164.483	164.424
.15779E+11	163.018	162.957	162.955	162.905
.18935E+11	161.208	161.156	161.154	161.112
.22090E+11	159.037	158.992	158.990	158.954
.25246E+11	156.649	156.610	156.608	156.577
.28402E+11	154.339	154.305	154.304	154.276
.31558E+11	152.243	152.212	152.211	152.187

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 33940.070 TIME= 02:08:37
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise
 VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise
 VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise
 VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise
 VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise
 VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise
 VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise
 VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise
 VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise
 VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise
 VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise
 VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise
 VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise
 VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise
 VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2763 TEMP	ot1oise	28.34	.1000E-05	177.9	.2209E+10
3	NSOL	2726 TEMP	ot1iise	28.35	.1000E-05	177.9	.2209E+10
4	NSOL	1980 TEMP	it1oise	35.53	.1000E-05	178.7	.1893E+10
5	NSOL	1943 TEMP	it1iise	35.55	.1000E-05	178.7	.1893E+10
6	NSOL	1281 TEMP	st1oise	38.41	.1000E-05	178.9	.1893E+10
7	NSOL	1247 TEMP	st1iise	38.60	.1000E-05	179.0	.1893E+10
8	NSOL	1206 TEMP	ht1iise	57.51	.1000E-05	181.3	.1893E+10
9	NSOL	1207 TEMP	gt1iise	65.25	.1000E-05	182.4	.1578E+10
10	NSOL	63 TEMP	c01iise	69.08	.1000E-05	183.1	.1578E+10
11	NSOL	1034 TEMP	gb1iise	69.79	.1000E-05	183.1	.1578E+10
12	NSOL	1035 TEMP	gb1hise	66.08	.1000E-05	182.4	.1578E+10
13	NSOL	1033 TEMP	sb1iise	57.16	.1000E-05	181.1	.1893E+10
14	NSOL	1071 TEMP	sb1oise	56.92	.1000E-05	181.0	.1893E+10
15	NSOL	1652 TEMP	ib1iise	39.96	.1000E-05	179.2	.1893E+10
16	NSOL	1689 TEMP	ib1oise	39.69	.1000E-05	179.1	.1893E+10
17	NSOL	2763 TEMP	ob1oise	28.34	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:41 NOV 09, 1995 CP= 33943.190
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	28.3373	28.3485	35.5332	35.5512	38.4055	38.5957
.20000E-05	28.3381	28.3493	35.5357	35.5537	38.4085	38.5988
31.558	28.3381	28.3493	35.5357	35.5538	38.4085	38.5988
.31558E+07	47.9607	47.9702	54.4722	54.4892	56.8543	57.0382

.63116E+07	56.6113	56.6201	62.8373	62.8538	65.0406	65.2219
.94673E+07	62.5423	62.5507	68.5763	68.5925	70.6686	70.8484
.12623E+08	67.1505	67.1585	73.0372	73.0531	75.0489	75.2274
.15779E+08	70.9433	70.9511	76.7096	76.7253	78.6578	78.8354
.18935E+08	74.1791	74.1867	79.8429	79.8585	81.7388	81.9154
.22090E+08	77.0135	77.0208	82.5876	82.6030	84.4389	84.6147
.25246E+08	79.5178	79.5250	85.0127	85.0280	86.8255	87.0005
.28402E+08	81.7721	81.7791	87.1956	87.2107	88.9744	89.1487
.31558E+08	83.8404	83.8473	89.1983	89.2133	90.9465	91.1201
.63115E+08	98.4374	98.4433	103.315	103.329	104.860	105.027
.94673E+08	107.751	107.756	112.300	112.313	113.721	113.883
.12623E+09	115.058	115.063	119.345	119.358	120.673	120.829
.15779E+09	121.340	121.345	125.401	125.413	126.650	126.803
.18935E+09	126.615	126.620	130.481	130.493	131.666	131.814
.22090E+09	130.982	130.986	134.679	134.690	135.808	135.953
.25246E+09	134.855	134.859	138.402	138.413	139.482	139.623
.28402E+09	137.801	137.805	141.218	141.228	142.256	142.393
.31558E+09	140.256	140.260	143.555	143.565	144.557	144.690
.63115E+09	157.951	157.954	160.363	160.371	161.091	161.196
.94673E+09	169.358	169.360	171.182	171.188	171.731	171.814
.12623E+10	174.408	174.409	175.831	175.836	176.259	176.326
.15779E+10	176.737	176.738	177.866	177.870	178.205	178.258
.18935E+10	177.761	177.762	178.665	178.668	178.937	178.979
.22090E+10	177.906	177.907	178.636	178.638	178.856	178.890
.25246E+10	177.215	177.216	177.810	177.812	177.989	178.017
.28402E+10	176.480	176.480	176.967	176.969	177.114	177.137
.31558E+10	175.721	175.722	176.124	176.126	176.246	176.265
.63115E+10	171.242	171.242	171.343	171.344	171.374	171.379
.94673E+10	166.781	166.781	166.843	166.843	166.862	166.865
.12623E+11	164.422	164.422	164.472	164.472	164.487	164.490
.15779E+11	162.904	162.904	162.945	162.946	162.958	162.960
.18935E+11	161.111	161.111	161.146	161.146	161.157	161.159
.22090E+11	158.953	158.953	158.983	158.983	158.993	158.994
.25246E+11	156.576	156.576	156.602	156.602	156.610	156.612
.28402E+11	154.275	154.275	154.298	154.298	154.305	154.306
.31558E+11	152.186	152.186	152.206	152.206	152.213	152.213

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:41 NOV 09, 1995 CP= 33943.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gbl1iise	1035 TEMP gblhise	1033 TEMP sbl1iise
.10000E-05	57.5065	65.2476	69.0777	69.7916	66.0788	57.1647
.20000E-05	57.5108	65.2517	69.0818	69.7957	66.0835	57.1703
31.558	57.5107	65.2515	69.0815	69.7954	66.0833	57.1702
.31558E+07	73.8888	80.9490	84.4253	84.9967	81.5189	73.3295
.63116E+07	81.2409	88.0125	91.3400	91.8567	88.4858	80.6118
.94673E+07	86.3138	92.8896	96.1164	96.5980	93.3021	85.6445
.12623E+08	90.2706	96.6953	99.8439	100.300	97.0638	89.5748
.15779E+08	93.5355	99.8349	102.920	103.355	100.170	92.8210
.18935E+08	96.3251	102.518	105.549	105.968	102.825	95.5966
.22090E+08	98.7711	104.870	107.855	108.259	105.155	98.0318
.25246E+08	100.933	106.950	109.893	110.285	107.215	100.186
.28402E+08	102.880	108.823	111.728	112.110	109.071	102.127
.31558E+08	104.667	110.542	113.413	113.785	110.776	103.910
.63115E+08	117.272	122.657	125.284	125.593	122.800	116.503
.94673E+08	125.281	130.336	132.801	133.074	130.432	124.519
.12623E+09	131.557	136.346	138.680	138.926	136.410	130.810
.15779E+09	136.956	141.514	143.734	143.959	141.554	136.225
.18935E+09	141.476	145.834	147.956	148.164	145.857	140.764
.22090E+09	145.192	149.375	151.413	151.607	149.385	144.499

.25246E+09	148.480	152.503	154.463	154.645	152.503	147.805
.28402E+09	150.927	154.813	156.707	156.880	154.807	150.270
.31558E+09	152.933	156.695	158.529	158.694	156.684	152.293
.63115E+09	167.233	170.032	171.397	171.507	169.996	166.736
.94673E+09	176.381	178.519	179.563	179.641	178.479	175.995
.12623E+10	179.898	181.579	182.401	182.461	181.545	179.592
.15779E+10	181.097	182.438	183.094	183.141	182.409	180.853
.18935E+10	181.257	182.335	182.863	182.901	182.312	181.060
.22090E+10	180.733	181.607	182.035	182.066	181.588	180.574
.25246E+10	179.523	180.236	180.586	180.612	180.222	179.392
.28402E+10	178.374	178.961	179.249	179.270	178.949	178.267
.31558E+10	177.288	177.774	178.012	178.030	177.764	177.200
.63115E+10	171.638	171.761	171.822	171.826	171.759	171.616
.94673E+10	167.024	167.099	167.136	167.139	167.098	167.010
.12623E+11	164.617	164.678	164.708	164.710	164.677	164.607
.15779E+11	163.068	163.118	163.143	163.145	163.118	163.058
.18935E+11	161.250	161.294	161.315	161.317	161.293	161.243
.22090E+11	159.073	159.110	159.128	159.130	159.109	159.066
.25246E+11	156.680	156.712	156.728	156.729	156.712	156.674
.28402E+11	154.366	154.394	154.408	154.409	154.394	154.361
.31558E+11	152.266	152.291	152.303	152.304	152.290	152.262

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:41 NOV 09, 1995 CP= 33943.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP	1652 TEMP	1689 TEMP	2763 TEMP
	sb1oise	ib1iise	ib1oise	ob1oise
.10000E-05	56.9164	39.9555	39.6917	28.3373
.20000E-05	56.9221	39.9595	39.6956	28.3381
31.558	56.9219	39.9596	39.6957	28.3381
.31558E+07	73.0798	58.3231	58.0533	47.9607
.63116E+07	80.3615	66.4719	66.1998	56.6113
.94673E+07	85.3940	72.0720	71.7986	62.5423
.12623E+08	89.3243	76.4295	76.1551	67.1505
.15779E+08	92.5706	80.0193	79.7443	70.9433
.18935E+08	95.3466	83.0837	82.8083	74.1791
.22090E+08	97.7823	85.7691	85.4934	77.0135
.25246E+08	99.9368	88.1423	87.8665	79.5178
.28402E+08	101.879	90.2790	90.0031	81.7721
.31558E+08	103.662	92.2398	91.9639	83.8404
.63115E+08	116.260	106.061	105.790	98.4374
.94673E+08	124.282	114.850	114.585	107.751
.12623E+09	130.577	121.743	121.484	115.058
.15779E+09	135.998	127.670	127.417	121.340
.18935E+09	140.542	132.642	132.395	126.615
.22090E+09	144.282	136.747	136.506	130.982
.25246E+09	147.593	140.387	140.151	134.855
.28402E+09	150.062	143.131	142.901	137.801
.31558E+09	152.090	145.404	145.179	140.256
.63115E+09	166.574	161.722	161.545	157.951
.94673E+09	175.865	172.215	172.074	169.358
.12623E+10	179.489	176.640	176.527	174.408
.15779E+10	180.770	178.508	178.418	176.737
.18935E+10	180.994	179.179	179.107	177.761
.22090E+10	180.520	179.052	178.993	177.906
.25246E+10	179.349	178.149	178.102	177.215
.28402E+10	178.231	177.245	177.207	176.480
.31558E+10	177.170	176.354	176.322	175.721
.63115E+10	171.608	171.401	171.393	171.242
.94673E+10	167.006	166.878	166.874	166.781
.12623E+11	164.603	164.501	164.497	164.422
.15779E+11	163.056	162.969	162.966	162.904

.18935E+11	161.240	161.166	161.164	161.111
.22090E+11	159.064	159.001	158.998	158.953
.25246E+11	156.673	156.617	156.616	156.576
.28402E+11	154.360	154.312	154.310	154.275
.31558E+11	152.260	152.218	152.216	152.186

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 33943.430 TIME= 02:08:41
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2682 TEMP	ot1oose	29.50	.1000E-05	178.0	.2209E+10
3	NSOL	2673 TEMP	ot1oose	29.53	.1000E-05	178.0	.2209E+10
4	NSOL	1899 TEMP	it1oose	30.13	.1000E-05	178.1	.2209E+10
5	NSOL	1794 TEMP	it1oose	30.12	.1000E-05	178.1	.2209E+10
6	NSOL	1276 TEMP	st1oose	33.06	.1000E-05	178.2	.2209E+10
7	NSOL	1233 TEMP	st1oose	33.07	.1000E-05	178.2	.2209E+10
8	NSOL	1196 TEMP	ht1oose	43.85	.1000E-05	179.1	.1893E+10
9	NSOL	1197 TEMP	gt1oose	50.54	.1000E-05	179.7	.1893E+10
10	NSOL	58 TEMP	c01oose	52.87	.1000E-05	180.0	.1893E+10
11	NSOL	1019 TEMP	gb1oose	53.66	.1000E-05	180.0	.1893E+10
12	NSOL	1020 TEMP	gb1hose	52.08	.1000E-05	179.8	.1893E+10
13	NSOL	1018 TEMP	sb1oose	47.74	.1000E-05	179.3	.1893E+10
14	NSOL	1066 TEMP	sb1oose	47.69	.1000E-05	179.3	.1893E+10
15	NSOL	1529 TEMP	ib1oose	37.06	.1000E-05	178.5	.1893E+10
16	NSOL	1608 TEMP	ib1oose	36.98	.1000E-05	178.5	.2209E+10
17	NSOL	2682 TEMP	ob1oose	29.50	.1000E-05	178.0	.2209E+10

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38303 VERSION=HP 9000/7XX 02:08:44 NOV 09, 1995 CP= 33946.810
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1oose	2673 TEMP ot1oose	1899 TEMP it1oose	1794 TEMP it1oose	1276 TEMP st1oose	1233 TEMP st1oose
.10000E-05	29.4976	29.5325	30.1340	30.1181	33.0595	33.0738
.20000E-05	29.4987	29.5336	30.1353	30.1194	33.0614	33.0757
31.558	29.4987	29.5336	30.1353	30.1194	33.0614	33.0757
.31558E+07	48.9647	48.9964	49.5396	49.5259	51.9104	51.9219
.63116E+07	57.5521	57.5825	58.1018	58.0890	60.2687	60.2791
.94673E+07	63.4416	63.4711	63.9743	63.9622	66.0119	66.0216
.12623E+08	68.0182	68.0470	68.5381	68.5265	70.4802	70.4893
.15779E+08	71.7857	71.8140	72.2951	72.2839	74.1621	74.1708
.18935E+08	75.0002	75.0280	75.5007	75.4898	77.3059	77.3142
.22090E+08	77.8161	77.8435	78.3089	78.2983	80.0616	80.0696
.25246E+08	80.3043	80.3314	80.7903	80.7800	82.4978	82.5055
.28402E+08	82.5442	82.5709	83.0240	83.0140	84.6917	84.6991
.31558E+08	84.5994	84.6259	85.0736	85.0638	86.7055	86.7127
.63115E+08	99.1067	99.1310	99.5409	99.5327	100.937	100.943
.94673E+08	108.362	108.385	108.767	108.760	110.022	110.027
.12623E+09	115.625	115.647	116.007	116.000	117.158	117.162
.15779E+09	121.870	121.890	122.231	122.225	123.297	123.300
.18935E+09	127.114	127.133	127.459	127.453	128.454	128.457
.22090E+09	131.454	131.473	131.784	131.779	132.722	132.725
.25246E+09	135.305	135.323	135.621	135.617	136.509	136.512
.28402E+09	138.231	138.249	138.537	138.532	139.383	139.386
.31558E+09	140.669	140.686	140.964	140.960	141.775	141.777
.63115E+09	158.243	158.255	158.459	158.457	159.018	159.020
.94673E+09	169.574	169.583	169.738	169.736	170.146	170.146
.12623E+10	174.574	174.582	174.703	174.701	175.016	175.017
.15779E+10	176.869	176.874	176.970	176.970	177.218	177.218
.18935E+10	177.866	177.871	177.948	177.947	178.145	178.145
.22090E+10	177.991	177.994	178.057	178.056	178.216	178.216
.25246E+10	177.284	177.287	177.338	177.337	177.468	177.468
.28402E+10	176.536	176.539	176.580	176.580	176.687	176.688
.31558E+10	175.768	175.770	175.805	175.804	175.893	175.894
.63115E+10	171.254	171.254	171.263	171.263	171.285	171.285
.94673E+10	166.788	166.789	166.794	166.794	166.808	166.808
.12623E+11	164.428	164.429	164.433	164.433	164.444	164.444
.15779E+11	162.909	162.909	162.912	162.912	162.922	162.922
.18935E+11	161.115	161.115	161.118	161.118	161.126	161.126
.22090E+11	158.956	158.956	158.959	158.959	158.966	158.966
.25246E+11	156.579	156.579	156.581	156.581	156.588	156.588
.28402E+11	154.278	154.278	154.280	154.280	154.286	154.286
.31558E+11	152.189	152.189	152.190	152.190	152.195	152.195

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:08:44 NOV 09, 1995 CP= 33946.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP ht1iose	1197 TEMP gt1iose	58 TEMP c01iose	1019 TEMP gb1iose	1020 TEMP gb1iose	1018 TEMP sb1iose
.10000E-05	43.8520	50.5356	52.8734	53.6625	52.0822	47.7434
.20000E-05	43.8552	50.5396	52.8780	53.6674	52.0870	47.7480
31.558	43.8551	50.5395	52.8778	53.6671	52.0868	47.7479

.31558E+07	61.0829	66.9317	68.9399	69.5821	68.1727	64.3120
.63116E+07	68.8043	74.3156	76.1914	76.7773	75.4401	71.7768
.94673E+07	74.1357	79.4223	81.2108	81.7605	80.4721	76.9414
.12623E+08	78.2966	83.4127	85.1355	85.6585	84.4075	80.9784
.15779E+08	81.7324	86.7105	88.3805	88.8822	87.6619	84.3156
.18935E+08	84.6707	89.5327	91.1584	91.6426	90.4482	87.1721
.22090E+08	87.2495	92.0108	93.5984	94.0677	92.8959	89.6810
.25246E+08	89.5315	94.2046	95.7588	96.2152	95.0634	91.9026
.28402E+08	91.5887	96.1827	97.7072	98.1523	97.0184	93.9065
.31558E+08	93.4785	98.0002	99.4977	99.9326	98.8152	95.7481
.63115E+08	106.859	110.877	112.189	112.556	111.556	108.806
.94673E+08	115.418	119.115	120.312	120.641	119.718	117.173
.12623E+09	122.152	125.600	126.710	127.010	126.147	123.763
.15779E+09	127.957	131.195	132.231	132.508	131.697	129.451
.18935E+09	132.838	135.898	136.874	137.131	136.363	134.234
.22090E+09	136.873	139.784	140.708	140.950	140.219	138.189
.25246E+09	140.456	143.232	144.111	144.340	143.641	141.701
.28402E+09	143.161	145.826	146.667	146.885	146.214	144.349
.31558E+09	145.404	147.970	148.779	148.987	148.341	146.543
.63115E+09	161.576	163.413	163.984	164.127	163.662	162.361
.94673E+09	172.035	173.404	173.827	173.930	173.582	172.607
.12623E+10	176.478	177.543	177.870	177.949	177.679	176.918
.15779E+10	178.373	179.217	179.476	179.539	179.324	178.721
.18935E+10	179.070	179.746	179.954	180.004	179.832	179.348
.22090E+10	178.964	179.511	179.679	179.720	179.580	179.189
.25246E+10	178.079	178.527	178.665	178.698	178.584	178.263
.28402E+10	177.190	177.558	177.671	177.699	177.605	177.342
.31558E+10	176.310	176.614	176.709	176.731	176.653	176.436
.63115E+10	171.392	171.470	171.494	171.500	171.480	171.424
.94673E+10	166.874	166.922	166.937	166.940	166.928	166.894
.12623E+11	164.497	164.536	164.548	164.551	164.541	164.514
.15779E+11	162.967	162.999	163.010	163.012	163.004	162.981
.18935E+11	161.165	161.192	161.201	161.203	161.196	161.176
.22090E+11	158.999	159.023	159.031	159.033	159.027	159.010
.25246E+11	156.617	156.637	156.644	156.646	156.640	156.626
.28402E+11	154.311	154.329	154.335	154.337	154.332	154.319
.31558E+11	152.218	152.234	152.239	152.240	152.236	152.225

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:44 NOV 09, 1995 CP= 33946.840
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP	1529 TEMP	1608 TEMP	2682 TEMP
	sb1oose	ib1iose	ib1oose	ob1oose
.10000E-05	47.6881	37.0595	36.9787	29.4976
.20000E-05	47.6927	37.0627	36.9819	29.4987
31.558	47.6926	37.0628	36.9820	29.4987
.31558E+07	64.2588	55.4224	55.3428	48.9647
.63116E+07	71.7244	63.5753	63.4962	57.5521
.94673E+07	76.8895	69.1817	69.1031	63.4416
.12623E+08	80.9270	73.5462	73.4679	68.0182
.15779E+08	84.2646	77.1435	77.0656	71.7857
.18935E+08	87.1215	80.2159	80.1382	75.0002
.22090E+08	89.6307	82.9093	82.8319	77.8161
.25246E+08	91.8525	85.2907	85.2136	80.3043
.28402E+08	93.8567	87.4356	87.3587	82.5442
.31558E+08	95.6986	89.4046	89.3279	84.5994
.63115E+08	108.759	103.321	103.248	99.1067
.94673E+08	117.128	112.208	112.137	108.362
.12623E+09	123.720	119.190	119.121	115.625
.15779E+09	129.409	125.200	125.133	121.870
.18935E+09	134.193	130.249	130.184	127.114
.22090E+09	138.150	134.425	134.362	131.454

.25246E+09	141.663	138.131	138.070	135.305
.28402E+09	144.312	140.938	140.878	138.231
.31558E+09	146.506	143.270	143.212	140.669
.63115E+09	162.333	160.077	160.032	158.243
.94673E+09	172.585	170.930	170.895	169.574
.12623E+10	176.901	175.623	175.595	174.574
.15779E+10	178.707	177.697	177.675	176.869
.18935E+10	179.337	178.529	178.511	177.866
.22090E+10	179.180	178.526	178.512	177.991
.25246E+10	178.256	177.722	177.710	177.284
.28402E+10	177.336	176.896	176.886	176.536
.31558E+10	176.431	176.066	176.058	175.768
.63115E+10	171.423	171.329	171.327	171.254
.94673E+10	166.893	166.835	166.834	166.788
.12623E+11	164.513	164.466	164.465	164.428
.15779E+11	162.980	162.940	162.940	162.909
.18935E+11	161.176	161.142	161.141	161.115
.22090E+11	159.009	158.980	158.979	158.956
.25246E+11	156.625	156.600	156.599	156.579
.28402E+11	154.319	154.296	154.296	154.278
.31558E+11	152.224	152.204	152.204	152.189

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 33947.060 TIME= 02:08:44
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise

VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise

VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise

VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise

VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise

VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise

VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise

VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise

VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise

VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise

VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise

VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise

VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise

VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise

VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	9867 TEMP	ot4oise	28.34	.1000E-05	177.9 .2209E+10
3	NSOL	9830 TEMP	ot4iise	28.35	.1000E-05	177.9 .2209E+10
4	NSOL	9558 TEMP	it4oise	35.54	.1000E-05	178.7 .1893E+10

5 NSOL	9521 TEMP	it4iise	35.55	.1000E-05	178.7	.1893E+10
6 NSOL	8545 TEMP	st4oise	38.41	.1000E-05	178.9	.1893E+10
7 NSOL	8511 TEMP	st4iise	38.60	.1000E-05	179.0	.1893E+10
8 NSOL	8470 TEMP	ht4iise	57.51	.1000E-05	181.3	.1893E+10
9 NSOL	8471 TEMP	gt4iise	65.25	.1000E-05	182.4	.1578E+10
10 NSOL	7947 TEMP	c04iise	69.08	.1000E-05	183.1	.1578E+10
11 NSOL	7952 TEMP	gb4iise	69.80	.1000E-05	183.1	.1578E+10
12 NSOL	7953 TEMP	gb4hise	66.08	.1000E-05	182.4	.1578E+10
13 NSOL	7951 TEMP	sb4iise	57.17	.1000E-05	181.1	.1893E+10
14 NSOL	7996 TEMP	sb4oise	56.92	.1000E-05	181.0	.1893E+10
15 NSOL	8946 TEMP	ib4iise	39.96	.1000E-05	179.2	.1893E+10
16 NSOL	8983 TEMP	ib4oise	39.70	.1000E-05	179.1	.1893E+10
17 NSOL	9867 TEMP	ob4oise	28.34	.1000E-05	177.9	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:48 NOV 09, 1995 CP= 33950.200
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	28.3393	28.3504	35.5354	35.5535	38.4089	38.5990
.20000E-05	28.3402	28.3513	35.5379	35.5559	38.4119	38.6021
.31558E+07	28.3402	28.3513	35.5380	35.5560	38.4119	38.6021
.63116E+07	47.9624	47.9718	54.4741	54.4911	56.8570	57.0409
.94673E+07	56.6128	56.6215	62.8391	62.8556	65.0430	65.2243
.12623E+08	62.5438	62.5521	68.5780	68.5942	70.6709	70.8505
.15779E+08	67.1518	67.1598	73.0388	73.0547	75.0510	75.2295
.18935E+08	70.9446	70.9523	76.7112	76.7269	78.6599	78.8373
.22090E+08	74.1803	74.1878	79.8444	79.8600	81.7408	81.9173
.25246E+08	77.0147	77.0220	82.5891	82.6045	84.4408	84.6165
.28402E+08	79.5190	79.5261	85.0142	85.0294	86.8274	87.0023
.31558E+08	81.7732	81.7802	87.1970	87.2121	88.9762	89.1504
.63115E+08	83.8415	83.8483	89.1997	89.2147	90.9482	91.1218
.94673E+08	98.4383	98.4442	103.316	103.330	104.861	105.028
.12623E+09	107.751	107.757	112.301	112.314	113.722	113.884
.15779E+09	115.059	115.064	119.346	119.359	120.674	120.831
.18935E+09	121.341	121.345	125.402	125.414	126.651	126.804
.22090E+09	126.616	126.620	130.482	130.494	131.667	131.815
.25246E+09	130.982	130.986	134.680	134.691	135.809	135.954
.28402E+09	134.856	134.860	138.403	138.414	139.483	139.624
.31558E+09	137.802	137.805	141.218	141.229	142.257	142.394
.63115E+09	140.256	140.260	143.556	143.566	144.558	144.691
.94673E+09	157.952	157.954	160.364	160.371	161.091	161.196
.12623E+10	169.359	169.360	171.182	171.188	171.731	171.814
.15779E+10	174.408	174.410	175.832	175.836	176.259	176.326
.18935E+10	176.738	176.739	177.866	177.870	178.206	178.259
.22090E+10	177.761	177.762	178.665	178.668	178.937	178.980
.25246E+10	177.906	177.907	178.636	178.638	178.856	178.890
.28402E+10	177.215	177.216	177.810	177.812	177.989	178.017
.31558E+10	176.480	176.480	176.967	176.969	177.115	177.137
.63115E+10	175.721	175.722	176.125	176.126	176.246	176.265
.94673E+10	171.242	171.242	171.343	171.344	171.374	171.379
.12623E+11	166.781	166.781	166.843	166.843	166.862	166.865
.15779E+11	164.422	164.422	164.472	164.472	164.487	164.490
.18935E+11	162.904	162.904	162.945	162.946	162.958	162.960
.22090E+11	161.111	161.111	161.146	161.146	161.157	161.159
.25246E+11	158.953	158.953	158.983	158.983	158.993	158.994
.28402E+11	156.576	156.576	156.602	156.602	156.610	156.612
.31558E+11	154.275	154.275	154.298	154.298	154.305	154.306
	152.186	152.186	152.206	152.206	152.213	152.213

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:48 NOV 09, 1995 CP= 33950.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	57.5097	65.2521	69.0823	69.7962	66.0834	57.1716
.20000E-05	57.5141	65.2562	69.0864	69.8003	66.0882	57.1773
31.558	57.5139	65.2560	69.0861	69.8000	66.0879	57.1771
.31558E+07	73.8915	80.9528	84.4292	85.0006	81.5228	73.3356
.63116E+07	81.2433	88.0160	91.3436	91.8603	88.4894	80.6175
.94673E+07	86.3161	92.8929	96.1198	96.6014	93.3056	85.6499
.12623E+08	90.2728	96.6985	99.8471	100.303	97.0671	89.5801
.15779E+08	93.5376	99.8380	102.923	103.359	100.173	92.8260
.18935E+08	96.3272	102.521	105.552	105.971	102.828	95.6015
.22090E+08	98.7730	104.873	107.858	108.262	105.158	98.0366
.25246E+08	100.935	106.953	109.896	110.288	107.218	100.191
.28402E+08	102.882	108.825	111.731	112.113	109.074	102.132
.31558E+08	104.669	110.544	113.416	113.788	110.778	103.914
.63115E+08	117.274	122.659	125.287	125.596	122.802	116.507
.94673E+08	125.282	130.338	132.803	133.076	130.434	124.523
.12623E+09	131.558	136.348	138.682	138.928	136.412	130.813
.15779E+09	136.957	141.515	143.736	143.961	141.556	136.229
.18935E+09	141.477	145.835	147.958	148.166	145.858	140.767
.22090E+09	145.193	149.376	151.414	151.608	149.387	144.501
.25246E+09	148.481	152.504	154.464	154.646	152.505	147.808
.28402E+09	150.928	154.815	156.709	156.881	154.808	150.272
.31558E+09	152.934	156.697	158.531	158.695	156.685	152.295
.63115E+09	167.233	170.032	171.398	171.508	169.997	166.738
.94673E+09	176.381	178.519	179.563	179.642	178.480	175.996
.12623E+10	179.898	181.579	182.401	182.461	181.545	179.593
.15779E+10	181.097	182.438	183.094	183.142	182.410	180.853
.18935E+10	181.257	182.336	182.863	182.902	182.312	181.061
.22090E+10	180.733	181.607	182.035	182.066	181.588	180.574
.25246E+10	179.523	180.237	180.587	180.612	180.222	179.393
.28402E+10	178.374	178.961	179.249	179.270	178.949	178.267
.31558E+10	177.288	177.774	178.012	178.030	177.764	177.200
.63115E+10	171.638	171.761	171.822	171.826	171.759	171.616
.94673E+10	167.024	167.099	167.136	167.139	167.098	167.010
.12623E+11	164.617	164.678	164.708	164.710	164.677	164.607
.15779E+11	163.068	163.118	163.143	163.145	163.118	163.058
.18935E+11	161.250	161.294	161.315	161.317	161.293	161.243
.22090E+11	159.073	159.110	159.128	159.130	159.110	159.066
.25246E+11	156.680	156.712	156.728	156.729	156.712	156.674
.28402E+11	154.366	154.394	154.408	154.409	154.394	154.361
.31558E+11	152.266	152.291	152.303	152.304	152.290	152.262

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:48 NOV 09, 1995 CP= 33950.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	56.9234	39.9608	39.6970	28.3393
.20000E-05	56.9291	39.9648	39.7009	28.3402
31.558	56.9289	39.9649	39.7010	28.3402

.31558E+07	73.0860	58.3277	58.0580	47.9624
.63116E+07	80.3673	66.4763	66.2042	56.6128
.94673E+07	85.3995	72.0763	71.8028	62.5438
.12623E+08	89.3297	76.4336	76.1592	67.1518
.15779E+08	92.5757	80.0233	79.7483	70.9446
.18935E+08	95.3516	83.0876	82.8122	74.1803
.22090E+08	97.7872	85.7729	85.4972	77.0147
.25246E+08	99.9417	88.1461	87.8702	79.5190
.28402E+08	101.883	90.2827	90.0068	81.7732
.31558E+08	103.667	92.2435	91.9675	83.8415
.63115E+08	116.264	106.064	105.793	98.4383
.94673E+08	124.286	114.853	114.587	107.751
.12623E+09	130.581	121.746	121.487	115.059
.15779E+09	136.002	127.673	127.420	121.341
.18935E+09	140.545	132.645	132.398	126.616
.22090E+09	144.285	136.749	136.508	130.982
.25246E+09	147.596	140.389	140.154	134.856
.28402E+09	150.065	143.133	142.903	137.802
.31558E+09	152.092	145.406	145.181	140.256
.63115E+09	166.576	161.724	161.547	157.952
.94673E+09	175.866	172.216	172.075	169.359
.12623E+10	179.490	176.640	176.528	174.408
.15779E+10	180.771	178.509	178.419	176.738
.18935E+10	180.995	179.180	179.108	177.761
.22090E+10	180.520	179.052	178.994	177.906
.25246E+10	179.349	178.149	178.102	177.215
.28402E+10	178.232	177.246	177.207	176.480
.31558E+10	177.170	176.354	176.322	175.721
.63115E+10	171.608	171.401	171.393	171.242
.94673E+10	167.006	166.878	166.874	166.781
.12623E+11	164.603	164.501	164.497	164.422
.15779E+11	163.056	162.969	162.966	162.904
.18935E+11	161.240	161.166	161.164	161.111
.22090E+11	159.064	159.001	158.998	158.953
.25246E+11	156.673	156.617	156.616	156.576
.28402E+11	154.360	154.312	154.310	154.275
.31558E+11	152.260	152.218	152.216	152.186

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 33950.430 TIME= 02:08:48
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose

VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose

VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose

VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose

VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose

VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose

VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose

VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9786 TEMP	ot4oose	29.51	.1000E-05	178.0	.2209E+10
3	NSOL	9777 TEMP	ot4iose	29.54	.1000E-05	178.0	.2209E+10
4	NSOL	9477 TEMP	it4oose	30.15	.1000E-05	178.1	.2209E+10
5	NSOL	9318 TEMP	it4iose	30.13	.1000E-05	178.1	.2209E+10
6	NSOL	8540 TEMP	st4oose	33.07	.1000E-05	178.2	.2209E+10
7	NSOL	8497 TEMP	st4iose	33.09	.1000E-05	178.2	.2209E+10
8	NSOL	8460 TEMP	ht4iose	43.88	.1000E-05	179.1	.1893E+10
9	NSOL	8461 TEMP	gt4iose	50.56	.1000E-05	179.7	.1893E+10
10	NSOL	7927 TEMP	c04iose	52.90	.1000E-05	180.0	.1893E+10
11	NSOL	7929 TEMP	gb4iose	53.69	.1000E-05	180.0	.1893E+10
12	NSOL	7930 TEMP	gb4hose	52.11	.1000E-05	179.8	.1893E+10
13	NSOL	7928 TEMP	sb4iose	47.77	.1000E-05	179.4	.1893E+10
14	NSOL	7991 TEMP	sb4oose	47.71	.1000E-05	179.3	.1893E+10
15	NSOL	8787 TEMP	ib4iose	37.09	.1000E-05	178.5	.1893E+10
16	NSOL	8902 TEMP	ib4oose	37.01	.1000E-05	178.5	.2209E+10
17	NSOL	9786 TEMP	ob4oose	29.51	.1000E-05	178.0	.2209E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:51 NOV 09, 1995 CP= 33953.560
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	29.5104	29.5449	30.1467	30.1309	33.0735	33.0880
.20000E-05	29.5115	29.5460	30.1479	30.1321	33.0754	33.0899
31.558	29.5115	29.5460	30.1480	30.1321	33.0755	33.0900
.31558E+07	48.9754	49.0067	49.5502	49.5365	51.9227	51.9344
.63116E+07	57.5620	57.5920	58.1115	58.0988	60.2802	60.2908
.94673E+07	63.4509	63.4800	63.9836	63.9715	66.0230	66.0328
.12623E+08	68.0272	68.0556	68.5469	68.5353	70.4909	70.5002
.15779E+08	71.7943	71.8222	72.3036	72.2924	74.1725	74.1814
.18935E+08	75.0086	75.0360	75.5090	75.4981	77.3161	77.3246
.22090E+08	77.8243	77.8513	78.3169	78.3064	80.0716	80.0797
.25246E+08	80.3123	80.3390	80.7981	80.7879	82.5076	82.5154
.28402E+08	82.5520	82.5784	83.0317	83.0217	84.7013	84.7089
.31558E+08	84.6071	84.6332	85.0811	85.0714	86.7150	86.7223
.63115E+08	99.1133	99.1374	99.5474	99.5392	100.945	100.951
.94673E+08	108.368	108.391	108.773	108.766	110.030	110.035
.12623E+09	115.631	115.652	116.012	116.006	117.165	117.169
.15779E+09	121.875	121.895	122.236	122.231	123.303	123.307
.18935E+09	127.119	127.138	127.463	127.458	128.460	128.464
.22090E+09	131.459	131.477	131.788	131.783	132.728	132.731
.25246E+09	135.309	135.327	135.626	135.621	136.515	136.518
.28402E+09	138.236	138.253	138.541	138.536	139.389	139.391
.31558E+09	140.673	140.690	140.968	140.964	141.781	141.783
.63115E+09	158.246	158.258	158.462	158.459	159.022	159.023
.94673E+09	169.576	169.585	169.740	169.738	170.149	170.149
.12623E+10	174.576	174.583	174.704	174.703	175.018	175.019
.15779E+10	176.870	176.876	176.972	176.971	177.219	177.220

.18935E+10	177.867	177.872	177.949	177.948	178.146	178.147
.22090E+10	177.992	177.995	178.057	178.057	178.217	178.217
.25246E+10	177.285	177.288	177.339	177.338	177.469	177.469
.28402E+10	176.537	176.539	176.581	176.580	176.688	176.688
.31558E+10	175.769	175.771	175.805	175.805	175.894	175.894
.63115E+10	171.254	171.254	171.263	171.263	171.286	171.286
.94673E+10	166.788	166.789	166.794	166.794	166.808	166.808
.12623E+11	164.428	164.429	164.433	164.433	164.444	164.444
.15779E+11	162.909	162.909	162.912	162.912	162.922	162.922
.18935E+11	161.115	161.115	161.118	161.118	161.126	161.126
.22090E+11	158.956	158.956	158.959	158.959	158.966	158.966
.25246E+11	156.579	156.579	156.582	156.581	156.588	156.588
.28402E+11	154.278	154.278	154.280	154.280	154.286	154.286
.31558E+11	152.189	152.189	152.190	152.190	152.195	152.195

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:51 NOV 09, 1995 CP= 33953.570
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	43.8752	50.5594	52.8982	53.6879	52.1071	47.7669
.20000E-05	43.8784	50.5634	52.9028	53.6928	52.1119	47.7715
31.558	43.8783	50.5633	52.9026	53.6926	52.1117	47.7714
.31558E+07	61.1043	66.9540	68.9631	69.6060	68.1961	64.3339
.63116E+07	68.8249	74.3371	76.2140	76.8005	75.4628	71.7979
.94673E+07	74.1557	79.4433	81.2328	81.7831	80.4943	76.9620
.12623E+08	78.3162	83.4333	85.1571	85.6807	84.4293	80.9986
.15779E+08	81.7516	86.7308	88.4017	88.9041	87.6832	84.3355
.18935E+08	84.6896	89.5527	91.1793	91.6641	90.4693	87.1917
.22090E+08	87.2681	92.0305	93.6190	94.0889	92.9167	89.7003
.25246E+08	89.5499	94.2241	95.7792	96.2362	95.0840	91.9216
.28402E+08	91.6068	96.2020	97.7274	98.1731	97.0388	93.9253
.31558E+08	93.4964	98.0192	99.5177	99.9532	98.8353	95.7667
.63115E+08	106.875	110.894	112.207	112.575	111.575	108.823
.94673E+08	115.433	119.131	120.329	120.659	119.735	117.189
.12623E+09	122.166	125.615	126.726	127.026	126.163	123.778
.15779E+09	127.971	131.210	132.247	132.524	131.712	129.465
.18935E+09	132.850	135.912	136.888	137.147	136.378	134.247
.22090E+09	136.886	139.797	140.722	140.965	140.233	138.202
.25246E+09	140.467	143.245	144.125	144.354	143.655	141.714
.28402E+09	143.172	145.838	146.681	146.899	146.228	144.361
.31558E+09	145.415	147.982	148.792	149.000	148.354	146.554
.63115E+09	161.584	163.422	163.993	164.136	163.671	162.370
.94673E+09	172.041	173.411	173.834	173.937	173.590	172.614
.12623E+10	176.483	177.548	177.876	177.955	177.684	176.923
.15779E+10	178.377	179.221	179.481	179.543	179.328	178.725
.18935E+10	179.073	179.749	179.958	180.008	179.835	179.351
.22090E+10	178.966	179.514	179.682	179.723	179.583	179.191
.25246E+10	178.081	178.529	178.667	178.700	178.586	178.266
.28402E+10	177.192	177.560	177.673	177.701	177.607	177.343
.31558E+10	176.311	176.616	176.710	176.733	176.655	176.437
.63115E+10	171.392	171.470	171.494	171.500	171.480	171.425
.94673E+10	166.874	166.922	166.937	166.941	166.928	166.894
.12623E+11	164.498	164.536	164.548	164.551	164.541	164.514
.15779E+11	162.967	163.000	163.010	163.012	163.004	162.981
.18935E+11	161.165	161.193	161.201	161.204	161.196	161.177
.22090E+11	158.999	159.023	159.031	159.033	159.027	159.010
.25246E+11	156.617	156.638	156.644	156.646	156.640	156.626
.28402E+11	154.311	154.329	154.335	154.337	154.332	154.319
.31558E+11	152.218	152.234	152.239	152.240	152.236	152.225

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:51 NOV 09, 1995 CP= 33953.580
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	47.7116	37.0914	37.0106	29.5104
.20000E-05	47.7161	37.0947	37.0138	29.5115
.31558E+07	47.7160	37.0947	37.0139	29.5115
.63116E+07	64.2806	55.4510	55.3715	48.9754
.94673E+07	71.7455	63.6025	63.5235	57.5620
.12623E+08	76.9101	69.2080	69.1294	63.4509
.15779E+08	80.9472	73.5718	73.4936	68.0272
.18935E+08	84.2844	77.1686	77.0907	71.7943
.22090E+08	87.1410	80.2404	80.1628	75.0086
.25246E+08	89.6499	82.9334	82.8561	77.8243
.28402E+08	91.8716	85.3144	85.2374	80.3123
.31558E+08	93.8755	87.4590	87.3822	82.5520
.63115E+08	95.7172	89.4276	89.3510	84.6071
.94673E+08	108.776	103.342	103.268	99.1133
.12623E+09	117.144	112.228	112.157	108.368
.15779E+09	123.735	119.208	119.139	115.631
.18935E+09	129.423	125.217	125.150	121.875
.22090E+09	134.207	130.265	130.200	127.119
.25246E+09	138.163	134.440	134.378	131.459
.28402E+09	141.675	138.146	138.085	135.309
.31558E+09	144.324	140.952	140.893	138.236
.63115E+09	146.518	143.283	143.226	140.673
.94673E+09	162.342	160.087	160.042	158.246
.12623E+10	172.592	170.937	170.902	169.576
.15779E+10	176.906	175.629	175.601	174.576
.18935E+10	178.711	177.702	177.680	176.870
.22090E+10	179.340	178.532	178.515	177.867
.25246E+10	179.182	178.529	178.515	177.992
.28402E+10	178.258	177.724	177.712	177.285
.31558E+10	177.337	176.898	176.888	176.537
.63115E+10	176.432	176.067	176.060	175.769
.94673E+10	171.423	171.330	171.328	171.254
.12623E+11	166.893	166.835	166.834	166.788
.15779E+11	164.513	164.466	164.465	164.428
.18935E+11	162.980	162.941	162.940	162.909
.22090E+11	161.176	161.142	161.142	161.115
.25246E+11	159.009	158.980	158.979	158.956
.28402E+11	156.625	156.600	156.599	156.579
.31558E+11	154.319	154.296	154.296	154.278
	152.224	152.204	152.204	152.189

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 33953.790 TIME= 02:08:51
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose

VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2874 TEMP	otwoose	29.68	.1000E-05	178.0	.2209E+10
3	NSOL	2610 TEMP	otwiose	29.83	.1000E-05	178.0	.2209E+10
4	NSOL	2556 TEMP	itwoose	29.97	.1000E-05	178.0	.2209E+10
5	NSOL	2504 TEMP	itwiose	30.09	.1000E-05	178.1	.2209E+10
6	NSOL	563 TEMP	stwoose	31.28	.1000E-05	178.2	.2209E+10
7	NSOL	2186 TEMP	stwiose	31.39	.1000E-05	178.2	.2209E+10
8	NSOL	2150 TEMP	htwiose	35.04	.1000E-05	178.5	.2209E+10
9	NSOL	2151 TEMP	gtwiose	37.14	.1000E-05	178.7	.1893E+10
10	NSOL	126 TEMP	c0wiose	38.55	.1000E-05	178.8	.1893E+10
11	NSOL	2085 TEMP	gbwiose	39.05	.1000E-05	178.8	.1893E+10
12	NSOL	2086 TEMP	gbwoose	38.33	.1000E-05	178.7	.1893E+10
13	NSOL	2084 TEMP	sbwiose	37.10	.1000E-05	178.6	.1893E+10
14	NSOL	660 TEMP	sbwoose	37.06	.1000E-05	178.6	.1893E+10
15	NSOL	2236 TEMP	ibwiose	36.98	.1000E-05	178.5	.1893E+10
16	NSOL	2272 TEMP	ibwoose	36.91	.1000E-05	178.5	.1893E+10
17	NSOL	2874 TEMP	obwoose	29.68	.1000E-05	178.0	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:54 NOV 09, 1995 CP= 33956.910
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwiose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	29.6816	29.8254	29.9681	30.0915	31.2821	31.3936
.20000E-05	29.6828	29.8266	29.9693	30.0927	31.2836	31.3952
31.558	29.6828	29.8266	29.9693	30.0927	31.2836	31.3952
.31558E+07	49.1356	49.2666	49.3959	49.5074	50.5555	50.6542
.63116E+07	57.7173	57.8430	57.9668	58.0734	59.0639	59.1573
.94673E+07	63.6028	63.7249	63.8451	63.9484	64.9007	64.9906
.12623E+08	68.1763	68.2957	68.4131	68.5139	69.4374	69.5247
.15779E+08	71.9412	72.0584	72.1735	72.2723	73.1724	73.2575
.18935E+08	75.1535	75.2687	75.3819	75.4791	76.3594	76.4428
.22090E+08	77.9674	78.0810	78.1926	78.2882	79.1515	79.2333

.25246E+08	80.4539	80.5661	80.6761	80.7704	81.6187	81.6991
.28402E+08	82.6921	82.8030	82.9117	83.0048	83.8397	83.9189
.31558E+08	84.7458	84.8555	84.9630	85.0551	85.8777	85.9558
.63115E+08	99.2420	99.3431	99.4418	99.5261	100.263	100.333
.94673E+08	108.489	108.583	108.676	108.754	109.434	109.499
.12623E+09	115.745	115.834	115.921	115.995	116.631	116.691
.15779E+09	121.983	122.068	122.151	122.221	122.819	122.876
.18935E+09	127.222	127.303	127.382	127.449	128.015	128.069
.22090E+09	131.558	131.636	131.711	131.775	132.314	132.365
.25246E+09	135.405	135.479	135.551	135.613	136.128	136.177
.28402E+09	138.328	138.399	138.469	138.528	139.023	139.070
.31558E+09	140.762	140.832	140.899	140.957	141.433	141.479
.63115E+09	158.311	158.362	158.412	158.454	158.796	158.829
.94673E+09	169.625	169.664	169.702	169.734	169.990	170.015
.12623E+10	174.614	174.645	174.674	174.699	174.899	174.918
.15779E+10	176.900	176.925	176.948	176.968	177.126	177.141
.18935E+10	177.892	177.911	177.930	177.946	178.072	178.084
.22090E+10	178.011	178.027	178.042	178.055	178.157	178.167
.25246E+10	177.301	177.314	177.326	177.337	177.420	177.428
.28402E+10	176.550	176.561	176.571	176.579	176.647	176.654
.31558E+10	175.780	175.788	175.797	175.804	175.860	175.866
.63115E+10	171.256	171.259	171.261	171.262	171.277	171.278
.94673E+10	166.790	166.791	166.793	166.794	166.803	166.803
.12623E+11	164.430	164.431	164.432	164.433	164.440	164.440
.15779E+11	162.910	162.911	162.912	162.912	162.918	162.919
.18935E+11	161.116	161.117	161.117	161.118	161.123	161.124
.22090E+11	158.957	158.958	158.958	158.959	158.963	158.964
.25246E+11	156.580	156.580	156.581	156.581	156.585	156.586
.28402E+11	154.279	154.279	154.280	154.280	154.283	154.284
.31558E+11	152.189	152.190	152.190	152.190	152.193	152.193

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:54 NOV 09, 1995 CP= 33956.920
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	35.0434	37.1379	38.5476	39.0516	38.3263	37.1046
.20000E-05	35.0459	37.1410	38.5512	39.0554	38.3300	37.1078
31.558	35.0460	37.1411	38.5513	39.0554	38.3300	37.1079
.31558E+07	53.8652	55.7106	56.9375	57.3260	56.6290	55.4881
.63116E+07	62.1894	63.9336	65.0877	65.4337	64.7533	63.6496
.94673E+07	67.9042	69.5812	70.6873	71.0068	70.3390	69.2615
.12623E+08	72.3481	73.9742	75.0440	75.3441	74.6868	73.6302
.15779E+08	76.0080	77.5926	78.6333	78.9182	78.2701	77.2308
.18935E+08	79.1316	80.6813	81.6975	81.9700	81.3299	80.3058
.22090E+08	81.8685	83.3880	84.3828	84.6449	84.0122	83.0015
.25246E+08	84.2873	85.7800	86.7563	87.0093	86.3834	85.3848
.28402E+08	86.4650	87.9338	88.8934	89.1386	88.5189	87.5313
.31558E+08	88.4633	89.9103	90.8548	91.0929	90.4791	89.5016
.63115E+08	102.569	103.861	104.698	104.892	104.325	103.426
.94673E+08	111.557	112.748	113.518	113.688	113.156	112.315
.12623E+09	118.612	119.724	120.442	120.594	120.091	119.298
.15779E+09	124.680	125.726	126.400	126.538	126.060	125.307
.18935E+09	129.774	130.765	131.402	131.529	131.073	130.355
.22090E+09	133.988	134.930	135.536	135.654	135.218	134.530
.25246E+09	137.725	138.625	139.204	139.315	138.895	138.236
.28402E+09	140.556	141.420	141.976	142.080	141.676	141.040
.31558E+09	142.909	143.741	144.276	144.375	143.985	143.370
.63115E+09	159.852	160.449	160.831	160.897	160.610	160.160
.94673E+09	170.777	171.223	171.508	171.554	171.337	170.997
.12623E+10	175.509	175.856	176.077	176.112	175.943	175.677

.15779E+10	177.609	177.883	178.058	178.086	177.951	177.740
.18935E+10	178.458	178.678	178.818	178.840	178.732	178.563
.22090E+10	178.469	178.647	178.760	178.778	178.691	178.554
.25246E+10	177.675	177.820	177.912	177.927	177.856	177.744
.28402E+10	176.857	176.976	177.052	177.064	177.006	176.914
.31558E+10	176.034	176.132	176.195	176.205	176.157	176.081
.63115E+10	171.321	171.346	171.362	171.364	171.352	171.333
.94673E+10	166.830	166.845	166.855	166.856	166.849	166.837
.12623E+11	164.462	164.474	164.482	164.483	164.477	164.468
.15779E+11	162.937	162.947	162.954	162.955	162.950	162.942
.18935E+11	161.139	161.148	161.153	161.154	161.150	161.143
.22090E+11	158.977	158.985	158.989	158.990	158.987	158.981
.25246E+11	156.597	156.604	156.608	156.609	156.605	156.600
.28402E+11	154.294	154.300	154.303	154.304	154.301	154.297
.31558E+11	152.202	152.207	152.211	152.211	152.209	152.205

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:08:54 NOV 09, 1995 CP= 33956.940
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP sbwoose	2236 TEMP ibwiose	2272 TEMP ibwoose	2874 TEMP obwoose
.10000E-05	37.0562	36.9795	36.9138	29.6816
.20000E-05	37.0594	36.9828	36.9170	29.6828
31.558	37.0595	36.9828	36.9171	29.6828
.31558E+07	55.4398	55.3634	55.2978	49.1356
.63116E+07	63.6014	63.5251	63.4596	57.7173
.94673E+07	69.2134	69.1374	69.0720	63.6028
.12623E+08	73.5822	73.5063	73.4411	68.1763
.15779E+08	77.1829	77.1072	77.0421	71.9412
.18935E+08	80.2580	80.1825	80.1175	75.1535
.22090E+08	82.9538	82.8784	82.8136	77.9674
.25246E+08	85.3372	85.2620	85.1973	80.4539
.28402E+08	87.4838	87.4088	87.3442	82.6921
.31558E+08	89.4543	89.3794	89.3150	84.7458
.63115E+08	103.380	103.308	103.245	99.2420
.94673E+08	112.271	112.201	112.141	108.489
.12623E+09	119.255	119.187	119.129	115.745
.15779E+09	125.266	125.200	125.144	121.983
.18935E+09	130.315	130.252	130.197	127.222
.22090E+09	134.491	134.430	134.377	131.558
.25246E+09	138.198	138.138	138.086	135.405
.28402E+09	141.003	140.945	140.895	138.328
.31558E+09	143.334	143.278	143.229	140.762
.63115E+09	160.132	160.088	160.050	158.311
.94673E+09	170.975	170.941	170.911	169.625
.12623E+10	175.659	175.632	175.609	174.614
.15779E+10	177.726	177.704	177.686	176.900
.18935E+10	178.552	178.535	178.519	177.892
.22090E+10	178.545	178.531	178.519	178.011
.25246E+10	177.737	177.725	177.715	177.301
.28402E+10	176.908	176.899	176.890	176.550
.31558E+10	176.076	176.068	176.062	175.780
.63115E+10	171.332	171.330	171.328	171.256
.94673E+10	166.837	166.835	166.834	166.790
.12623E+11	164.467	164.466	164.466	164.430
.15779E+11	162.941	162.941	162.940	162.910
.18935E+11	161.143	161.142	161.142	161.116
.22090E+11	158.980	158.980	158.979	158.957
.25246E+11	156.600	156.600	156.599	156.580
.28402E+11	154.297	154.296	154.296	154.279
.31558E+11	152.205	152.204	152.204	152.189

***** ROUTINE COMPLETED ***** CP = 33956.940

End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsw21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsw21x2.db
FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS= 30529
MAXIMUM RECORD NUMBER = 427
RECORD SIZE (1*4 WORDS) = 16384
PAGE FILE SIZE (MB) = 26.688

```
*-----*
|                                     |
|               ANSYS RUN COMPLETED               |
|-----|
|               REV. 5.0 A               HP 9000/7XX               |
|               CP TIME   (sec) =    33981.530   TIME = 02:09:45   |
|               ELAPSED TIME (sec) =    60180.000   DATE  = 11/09/95   |
|-----|
*-----*
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WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glsh21b2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

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 ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glsh21b2.inp *
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP *
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat *
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED) *
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: hangls1.dat *
 16 /COM, * Initial Heat Load: 870 W/canister *
 17 /COM, *
 18 /COM, * Surface Temp. file: c21b5a.parm *

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19 /COM, *      100 MTU/acre (20.5 kgU/m^2) AML (High Thermal Loading) *
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 22.5 m *
22 /COM, *      WP c/c spacing = 19.5 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,param,
35 /COM, Read in surface temps. from repository model
36 PARRES,CHANGE,c21b5a,param,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 PI=3.141592654
64 SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 *SET,DFRAD,2.5,
73 *SET,INVRT,0.7,
74 *SET,WPSPC,19.5,
75 *SET,OFFST,0.1833,
76 XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLEN = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM, DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM, Required ceramic and drum parameters:
102 /COM, CDRAD = glass radius (m)
103 /COM, CDHGT = glass hieght; hieght of fill (m)
104 /COM, DRMIR = SRP Canister inner rad. (m)
105 /COM, DRMOR = SRP Canister drum outer rad. (m)
106 /COM, DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM, DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM, DRLEN = SRP Canister outer length (m)
109 /COM, DRILN = SRP Canister Inner length (m)
110 /COM, DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM, DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM, DRMOF = SRP Canister center line off set (m)
113 /COM, PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM, FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM, Define Extrude Distances as required:
130 /COM, Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM, Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM, *****
146 /COM, Define calculated parameters
147 /COM, ASSY = assembly heat production (W) f(yrs)
148 /COM, FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM, *****
154 /COM, Define 45 degree point of reference:
155 /COM, TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM, TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM, HCI45 = x coord. WP Center Line side of center Glass at
158 /COM, HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM, CC045 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM, SC045 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM, SC145 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM, MI45 = x coord. DCIRD at 45 deg.
163 /COM, MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM, DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TC045=(DRMOF+DRMOR-DRMOR/SQT)
166 TC145=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CC045=(DRMOF+DRMOR)
170 SC045=(DRMOF+DRMOR+DRMOR/SQT)
171 SC145=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM, *****
177 /COM, Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM, *****
194 /COM, File props01.dat describes material properties
195 /COM, and thier reference numbers
196 MPREAD,propsd1,dat,
197 /COM, *****
198 /COM, Define new material 15 for low thermal loading
199 /COM, outer barrier of 70/30 Copper Nickel (c71500)
200 /COM, Density: DENS (kg/m^3)
201 /COM, Emissivity: EMIS
202 /COM, Conductivity: KXX (W/m/K)
203 /COM, Specific Heat: C (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM, Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM, Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM, Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM, Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7, (5.0/9.0*(1112.0-32.0)), (5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM, *****
223 /COM, Read in single drum heat loads
224 /COM, Calculate the volumetric heat generation
225 /COM, (Assembly time is in years, FUEL is in seconds)
226 /INPUT,hangls1,dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLUME),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0,0,0,0,0,0,45.0,0,0,0,0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9, 10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5, 10, 15, 11,
274 AL, 8, 9, 16, 10,
275 AL, 7, 12, 13, 9,
276 AL, 6, 11, 14, 12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, MI45, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, MO45, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, DO45, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM, Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM, *****
388 /COM, Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM, GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM, Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM, Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM, Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM, Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM, Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM, Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM, *****
421 /COM, Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM, *****
425 /COM, Set up drift wall radiation matrix
426 /COM, (K's 32 - 34)
427 /COM, 1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM, Define extrude lines (will not use)
432 /COM, (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM, Extrude drift 8 elements with smallest
436 /COM, elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),    YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WPSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WPSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WPSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WPSPC/2.0),
466 K,44, (0.0-XXX),    YYY, -1*(WPSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WPSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WPSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WPSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WPSPC/2.0),
485 K,49, (0.0-XXX),    YYY, (WPSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,,83,86,1,
614 LSEL,A,LINE,,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,
637 VDRAG, 9,10,11,12,,,35,36,,,
638 VDRAG,13,14,,,35,36,,,
639 VDRAG,15,16,,,35,36,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,
646 VDRAG,13,14,,,40,41,42,,,
647 VDRAG,15,16,,,40,41,42,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0.0,0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0.0,0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0.0,0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM, *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM, *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM, *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM,                Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM,                Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM,                Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM,                Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM,                Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM,                Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM,                Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrccangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obrdwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrangap,
1140 SE,obrdwgap,
1141 /COM, Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM, *****
1151 /COM, Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM, *****
1156 /COM, GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM, DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM, This section used only if both rad. and He conducti
1159 /COM, is used in the model.
1160 /COM, He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM, Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM, He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM, Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM, He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,4,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TME0,TM10
1342 TIME,TM,
1343 VSEL,S,MAT,,5,
1344 ESLV,S,
1345 BFE,ALL,HGEN,,(FUEL(TM)),
1346 VSEL,ALL
1347 ESEL,ALL
1348 ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359 *ENDDO
1360 /COM,          Apply loads and solve for 1 to 9 years
1361 *DO,TM,TME1,TME9,TMI1
1362      TIME,TM,
1363      VSEL,S,MAT,,5,
1364      ESLV,S,
1365      BFE,ALL,HGEN,,(FUEL(TM)),
1366      VSEL,ALL
1367      ESEL,ALL
1368      ASEL,S,AREA,,17,26,1
1369      NSLA,S,1,
1370      DDELE,ALL,TEMP,
1371      ASEL,ALL,
1372      NSEL,ALL,
1373      ASEL,S,AREA,,17,26,1
1374      NSLA,S,1,
1375      D,ALL,TEMP,(DFSID(TM)),
1376      ASEL,ALL,
1377      NSEL,ALL,
1378      SOLVE
1379 *ENDDO
1380 /COM,          Apply loads and solve for 10 to 90 years
1381 *DO,TM,TME10,TME90,TMI10
1382      TIME,TM,
1383      VSEL,S,MAT,,5,
1384      ESLV,S,
1385      BFE,ALL,HGEN,,(FUEL(TM)),
1386      VSEL,ALL
1387      ESEL,ALL
1388      ASEL,S,AREA,,17,26,1
1389      NSLA,S,1,
1390      DDELE,ALL,TEMP,
1391      ASEL,ALL,
1392      NSEL,ALL,
1393      ASEL,S,AREA,,17,26,1
1394      NSLA,S,1,
1395      D,ALL,TEMP,(DFSID(TM)),
1396      ASEL,ALL,
1397      NSEL,ALL,
1398      SOLVE
1399 *ENDDO
1400 /COM,          Apply loads and solve for 100 to 1000 years
1401 *DO,TM,TME100,TME1000,TMI100
1402      TIME,TM,
1403      VSEL,S,MAT,,5,
1404      ESLV,S,
1405      BFE,ALL,HGEN,,(FUEL(TM)),
1406      VSEL,ALL
1407      ESEL,ALL
1408      ASEL,S,AREA,,17,26,1
1409      NSLA,S,1,
1410      DDELE,ALL,TEMP,
1411      ASEL,ALL,
1412      NSEL,ALL,
1413      ASEL,S,AREA,,17,26,1
1414      NSLA,S,1,
1415      D,ALL,TEMP,(DFSID(TM)),
1416      ASEL,ALL,
1417      NSEL,ALL,
1418      SOLVE

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1419 *ENDDO
1420 FINISH
1421 /COM, *****
1422 /COM,          Create element contour plots of solution results
1423 /COM,
1424 /COM,          Sort through solution results for time of max temp.
1425 /POST26,
1426 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1427 STORE,NEW,
1428 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1429 FINISH
1430 /POST1,
1431 /COM,          Create temperature contour plots of WP at peak
1432 /RESET,
1433 /TYPE,,HIDP,
1434 /VIEW,1,1,1,1,
1435 /DIST,1,3,0,
1436 /NUM, 1,
1437 /GLINE,,-1,
1438 /TRIAD,OFF,
1439 /PNUM,MAT, 1,
1440 VSEL,S,MAT,,1,5,4
1441 CSYS,31,
1442 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1443 VSEL,U,LOC,Y,-45.0,135.0,
1444 CSYS,0,
1445 ESLV,S
1446 VSEL,S,MAT,,1,5,4
1447 CSYS,32,
1448 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1449 VSEL,U,LOC,Y,-45.0,45.0,
1450 CSYS,0,
1451 ESLV,A
1452 VSEL,S,LOC,X,-100.0,0.0,
1453 ESLV,A
1454 ASEL,S,AREA,,17,26,1
1455 ASEL,R,LOC,X,-100.0,0.0,
1456 ESLA,A
1457 SET,NEAR,,,TMTMAX,
1458 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1459 /SHOW,solupk,grph,0,8,
1460 /CONTOUR,1,128,AUTO,
1461 PLNSOL,TEMP,
1462 /COM,          Create temperature contour plots at 5, 10, 50, and 100 yrs
1463 SET,NEAR,,, (TM_START+(5*TM1)),
1464 /TITLE, DHLW WP at 5 years
1465 /SHOW,solu5,grph,0,8,
1466 /CONTOUR,1,128,USER,
1467 PLNSOL,TEMP,
1468 SET,NEAR,,,TME10,
1469 /TITLE, DHLW WP at 10 years
1470 /SHOW,solu10,grph,0,8,
1471 /CONTOUR,1,128,USER,
1472 PLNSOL,TEMP,
1473 SET,NEAR,,,TME50,
1474 /TITLE, DHLW WP at 50 years
1475 /SHOW,solu50,grph,0,8,
1476 /CONTOUR,1,128,USER,
1477 PLNSOL,TEMP,
1478 SET,NEAR,,,TME100,
1479 /TITLE, DHLW WP at 100 years
1480 /SHOW,solu100,grph,0,8,
1481 /CONTOUR,1,128,USER,
1482 PLNSOL,TEMP,
1483 ESEL,ALL,
1484 FINISH
1485 /COM, *****
1486 /COM,          Print time/temperature output at specific locations
1487 /COM,          Save profile from center to edge
1488 /COM,

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1489 /COM,          Variable Legend: A01i000
1490 /COM,          t = structural stainless Canister near center line
1491 /COM,          c = center of Glass log
1492 /COM,          h = halfway between center and Canister
1493 /COM,          s = structural stainless Canister
1494 /COM,          i = inner barrier of DC
1495 /COM,          o = outer barrier of DC
1496 /COM,          ## = cartesian quadrant number of Canister
1497 /COM,          i = side of assembly toward center of WP
1498 /COM,          o = side of assembly toward edge of WP
1499 /COM,          045 = profile 45 deg down
1500 /COM,          135 = profile 45 deg up
1501 /POST26,
1502 NUMVAR,32,
1503 /COM,          *****
1504 /COM,          *Temperature Profile from center to lower right (45 deg.) z=2/3*
1505 /COM,          *****
1506 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1507 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1508 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1509 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1510 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1511 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1512 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1513 NSOL, 9,(NODE(MI45, (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1514 NSOL,10,(NODE(MO45, (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1515 NSOL,11,(NODE(DO45, (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1516 PRVAR, 2, 3, 4, 5, 6, 7,
1517 PRVAR, 8, 9,10,11,
1518 /COM,          *****
1519 /COM,          * Temperature Profile from center to lower right (45 deg.) *
1520 /COM,          *****
1521 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),0.0)),TEMP,,t04i045,
1522 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),0.0)),TEMP,,t04o045,
1523 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),0.0)),TEMP,,h04i045,
1524 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),0.0)),TEMP,,c04i045,
1525 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),0.0)),TEMP,,h04o045,
1526 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),0.0)),TEMP,,s04i045,
1527 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),0.0)),TEMP,,s04o045,
1528 NSOL, 9,(NODE(MI45, (-1.0*MI45),0.0)),TEMP,,i04i045,
1529 NSOL,10,(NODE(MO45, (-1.0*MO45),0.0)),TEMP,,i04o045,
1530 NSOL,11,(NODE(DO45, (-1.0*DO45),0.0)),TEMP,,o04o045,
1531 PRVAR, 2, 3, 4, 5, 6, 7,
1532 PRVAR, 8, 9,10,11,
1533 /COM,
1534 /COM,          *****
1535 /COM,          * Temperature Profile from center to upper right (135 deg.) *
1536 /COM,          *****
1537 NSOL, 2,(NODE(TCO45, TCO45,0.0)),TEMP,,t01i135,
1538 NSOL, 3,(NODE(TCI45, TCI45,0.0)),TEMP,,t01o135,
1539 NSOL, 4,(NODE(HCI45, HCI45,0.0)),TEMP,,h01i135,
1540 NSOL, 5,(NODE(CCO45, CCO45,0.0)),TEMP,,c01i135,
1541 NSOL, 6,(NODE(HCO45, HCO45,0.0)),TEMP,,h01o135,
1542 NSOL, 7,(NODE(SCI45, SCI45,0.0)),TEMP,,s01i135,
1543 NSOL, 8,(NODE(SCO45, SCO45,0.0)),TEMP,,s01o135,
1544 NSOL, 9,(NODE(MI45, MI45,0.0)),TEMP,,i01i135,
1545 NSOL,10,(NODE(MO45, MO45,0.0)),TEMP,,i01o135,
1546 NSOL,11,(NODE(DO45, DO45,0.0)),TEMP,,o01o135,
1547 PRVAR, 2, 3, 4, 5, 6, 7,
1548 PRVAR, 8, 9,10,11,
1549 /COM,
1550 /COM,          *****
1551 /COM,          * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1552 /COM,          *****
1553 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1554 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1555 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,
1556 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-1*BTPT4))),TEMP,,cb4i045,
1557 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-1*BTPT4))),TEMP,,hb4o045,
1558 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-1*BTPT4))),TEMP,,sb4i045,

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1559 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, , sb4o045,
1560 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, , ib4i045,
1561 NSOL, 10, (NODE(     MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, , ib4o045,
1562 NSOL, 11, (NODE(     DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, , ob4o045,
1563 PRVAR, 2, 3, 4, 5, 6, 7,
1564 PRVAR, 8, 9, 10, 11,
1565 /COM,
1566 /COM, *****
1567 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1568 /COM, *****
1569 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, , t01i135,
1570 NSOL, 3, (NODE(      TC145,      TC145, (-1*BTPT4))), TEMP, , t01o135,
1571 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, , h01i135,
1572 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, , c01i135,
1573 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, , h01o135,
1574 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, , s01i135,
1575 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, , s01o135,
1576 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, , i01i135,
1577 NSOL, 10, (NODE(     MO45,      MO45, (-1*BTPT4))), TEMP, , i01o135,
1578 NSOL, 11, (NODE(     DO45,      DO45, (-1*BTPT4))), TEMP, , o01o135,
1579 PRVAR, 2, 3, 4, 5, 6, 7,
1580 PRVAR, 8, 9, 10, 11,
1581 /COM,
1582 /COM, *****
1583 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1584 /COM, *****
1585 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, , tt4i045,
1586 NSOL, 3, (NODE(      TC145,      (-1.0*TC145), TPPT6)), TEMP, , tt4o045,
1587 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, , ht4i045,
1588 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, , ct4i045,
1589 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, , ht4o045,
1590 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, , st4i045,
1591 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, , st4o045,
1592 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, , it4i045,
1593 NSOL, 10, (NODE(     MO45,      (-1.0*MO45), TPPT6)), TEMP, , it4o045,
1594 NSOL, 11, (NODE(     DO45,      (-1.0*DO45), TPPT6)), TEMP, , ot4o045,
1595 PRVAR, 2, 3, 4, 5, 6, 7,
1596 PRVAR, 8, 9, 10, 11,
1597 /COM,
1598 /COM, *****
1599 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1600 /COM, *****
1601 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, , t01i135,
1602 NSOL, 3, (NODE(      TC145,      TC145, TPPT6)), TEMP, , t01o135,
1603 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, , h01i135,
1604 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, , c01i135,
1605 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, , h01o135,
1606 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, , s01i135,
1607 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, , s01o135,
1608 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, , i01i135,
1609 NSOL, 10, (NODE(     MO45,      MO45, TPPT6)), TEMP, , i01o135,
1610 NSOL, 11, (NODE(     DO45,      DO45, TPPT6)), TEMP, , o01o135,
1611 PRVAR, 2, 3, 4, 5, 6, 7,
1612 PRVAR, 8, 9, 10, 11,
1613 /COM,
1614 /COM, *****
1615 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1616 /COM, *****
1617 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, , ot1o135,
1618 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, , ot1i135,
1619 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, , it1o135,
1620 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, , it1i135,
1621 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, , st1o135,
1622 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, , st1i135,
1623 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, , ht1i135,
1624 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, , gt1i135,
1625 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, , c01i135,
1626 NSOL, 11, (NODE(      CCO45,      CCO45,      (-0.33*BTPT4))), TEMP, , gb1i135,
1627 NSOL, 12, (NODE(      CCO45,      CCO45,      (-0.66*BTPT4))), TEMP, , gb1h135,
1628 NSOL, 13, (NODE(      CCO45,      CCO45,      (-1.0*BTPT4))), TEMP, , sb1i135,

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1629 NSOL,14,(NODE(    CCO45,    CCO45,    (-1.0*BTPT3))),TEMP,,sb1o135,
1630 NSOL,15,(NODE(    CCO45,    CCO45,    (-1.0*BTPT2))),TEMP,,ib1i135,
1631 NSOL,16,(NODE(    CCO45,    CCO45,    (-1.0*BTPT1))),TEMP,,ib1o135,
1632 NSOL,17,(NODE(    CCO45,    CCO45,    MIDPT)),TEMP,,ob1o135,
1633 PRVAR, 2, 3, 4, 5, 6, 7,
1634 PRVAR, 8, 9,10,11,12,13,
1635 PRVAR,14,15,16,17,
1636 /COM,
1637 /COM, *****
1638 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1639 /COM, *****
1640 NSOL, 2,(NODE(    CCO45,(-1.0*CCO45),    MIDPT)),TEMP,,ot4o045,
1641 NSOL, 3,(NODE(    CCO45,(-1.0*CCO45),    TPPT1)),TEMP,,ot4i045,
1642 NSOL, 4,(NODE(    CCO45,(-1.0*CCO45),    TPPT2)),TEMP,,it4o045,
1643 NSOL, 5,(NODE(    CCO45,(-1.0*CCO45),    TPPT3)),TEMP,,it4i045,
1644 NSOL, 6,(NODE(    CCO45,(-1.0*CCO45),    TPPT4)),TEMP,,st4o045,
1645 NSOL, 7,(NODE(    CCO45,(-1.0*CCO45),    TPPT5)),TEMP,,st4i045,
1646 NSOL, 8,(NODE(    CCO45,(-1.0*CCO45),    TPPT6)),TEMP,,ht4i045,
1647 NSOL, 9,(NODE(    CCO45,(-1.0*CCO45),    ( 0.5*TPPT6))),TEMP,,gt4i045,
1648 NSOL,10,(NODE(    CCO45,(-1.0*CCO45),    0.0)),TEMP,,c04i045,
1649 NSOL,11,(NODE(    CCO45,(-1.0*CCO45),    (-0.33*BTPT4))),TEMP,,gb4i045,
1650 NSOL,12,(NODE(    CCO45,(-1.0*CCO45),    (-0.66*BTPT4))),TEMP,,gb4h045,
1651 NSOL,13,(NODE(    CCO45,(-1.0*CCO45),    (-1.0*BTPT4))),TEMP,,sb4i045,
1652 NSOL,14,(NODE(    CCO45,(-1.0*CCO45),    (-1.0*BTPT3))),TEMP,,sb4o045,
1653 NSOL,15,(NODE(    CCO45,(-1.0*CCO45),    (-1.0*BTPT2))),TEMP,,ib4i045,
1654 NSOL,16,(NODE(    CCO45,(-1.0*CCO45),    (-1.0*BTPT1))),TEMP,,ib4o045,
1655 NSOL,17,(NODE(    CCO45,(-1.0*CCO45),    MIDPT)),TEMP,,ob4o045,
1656 PRVAR, 2, 3, 4, 5, 6, 7,
1657 PRVAR, 8, 9,10,11,12,13,
1658 PRVAR,14,15,16,17,
1659 /COM,
1660 /COM, *****
1661 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1662 /COM, *****
1663 NSOL, 2,(NODE(    TCO45,    TCO45,    MIDPT)),TEMP,,ot1oise,
1664 NSOL, 3,(NODE(    TCO45,    TCO45,    TPPT1)),TEMP,,ot1iise,
1665 NSOL, 4,(NODE(    TCO45,    TCO45,    TPPT2)),TEMP,,it1oise,
1666 NSOL, 5,(NODE(    TCO45,    TCO45,    TPPT3)),TEMP,,it1iise,
1667 NSOL, 6,(NODE(    TCO45,    TCO45,    TPPT4)),TEMP,,st1oise,
1668 NSOL, 7,(NODE(    TCO45,    TCO45,    TPPT5)),TEMP,,st1iise,
1669 NSOL, 8,(NODE(    TCO45,    TCO45,    TPPT6)),TEMP,,ht1iise,
1670 NSOL, 9,(NODE(    TCO45,    TCO45,    ( 0.5*TPPT6))),TEMP,,gt1iise,
1671 NSOL,10,(NODE(    TCO45,    TCO45,    0.0)),TEMP,,c01iise,
1672 NSOL,11,(NODE(    TCO45,    TCO45,    (-0.33*BTPT4))),TEMP,,gb1iise,
1673 NSOL,12,(NODE(    TCO45,    TCO45,    (-0.66*BTPT4))),TEMP,,gb1hise,
1674 NSOL,13,(NODE(    TCO45,    TCO45,    (-1.0*BTPT4))),TEMP,,sb1iise,
1675 NSOL,14,(NODE(    TCO45,    TCO45,    (-1.0*BTPT3))),TEMP,,sb1oise,
1676 NSOL,15,(NODE(    TCO45,    TCO45,    (-1.0*BTPT2))),TEMP,,ib1iise,
1677 NSOL,16,(NODE(    TCO45,    TCO45,    (-1.0*BTPT1))),TEMP,,ib1oise,
1678 NSOL,17,(NODE(    TCO45,    TCO45,    MIDPT)),TEMP,,ob1oise,
1679 PRVAR, 2, 3, 4, 5, 6, 7,
1680 PRVAR, 8, 9,10,11,12,13,
1681 PRVAR,14,15,16,17,
1682 /COM,
1683 /COM, *****
1684 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1685 /COM, *****
1686 NSOL, 2,(NODE(    SCO45,    SCO45,    MIDPT)),TEMP,,ot1oose,
1687 NSOL, 3,(NODE(    SCO45,    SCO45,    TPPT1)),TEMP,,ot1iise,
1688 NSOL, 4,(NODE(    SCO45,    SCO45,    TPPT2)),TEMP,,it1oose,
1689 NSOL, 5,(NODE(    SCO45,    SCO45,    TPPT3)),TEMP,,it1iise,
1690 NSOL, 6,(NODE(    SCO45,    SCO45,    TPPT4)),TEMP,,st1oose,
1691 NSOL, 7,(NODE(    SCO45,    SCO45,    TPPT5)),TEMP,,st1iise,
1692 NSOL, 8,(NODE(    SCO45,    SCO45,    TPPT6)),TEMP,,ht1iise,
1693 NSOL, 9,(NODE(    SCO45,    SCO45,    ( 0.5*TPPT6))),TEMP,,gt1iise,
1694 NSOL,10,(NODE(    SCO45,    SCO45,    0.0)),TEMP,,c01iise,
1695 NSOL,11,(NODE(    SCO45,    SCO45,    (-0.33*BTPT4))),TEMP,,gb1iise,
1696 NSOL,12,(NODE(    SCO45,    SCO45,    (-0.66*BTPT4))),TEMP,,gb1hise,
1697 NSOL,13,(NODE(    SCO45,    SCO45,    (-1.0*BTPT4))),TEMP,,sb1iise,
1698 NSOL,14,(NODE(    SCO45,    SCO45,    (-1.0*BTPT3))),TEMP,,sb1oose,

```

```

1699 NSOL,15,(NODE(      SCO45,      SCO45,      (-1.0*BTPT2))),TEMP,,ib1iose,
1700 NSOL,16,(NODE(      SCO45,      SCO45,      (-1.0*BTPT1))),TEMP,,ib1oose,
1701 NSOL,17,(NODE(      SCO45,      SCO45,      MIDPT)),TEMP,,ob1oose,
1702 PRVAR, 2, 3, 4, 5, 6, 7,
1703 PRVAR, 8, 9,10,11,12,13,
1704 PRVAR,14,15,16,17,
1705 /COM,
1706 /COM, *****
1707 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1708 /COM, *****
1709 NSOL, 2,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ot4oise,
1710 NSOL, 3,(NODE(      TCO45,(-1.0*TCO45),      TPPT1)),TEMP,,ot4iise,
1711 NSOL, 4,(NODE(      TCO45,(-1.0*TCO45),      TPPT2)),TEMP,,it4oise,
1712 NSOL, 5,(NODE(      TCO45,(-1.0*TCO45),      TPPT3)),TEMP,,it4iise,
1713 NSOL, 6,(NODE(      TCO45,(-1.0*TCO45),      TPPT4)),TEMP,,st4oise,
1714 NSOL, 7,(NODE(      TCO45,(-1.0*TCO45),      TPPT5)),TEMP,,st4iise,
1715 NSOL, 8,(NODE(      TCO45,(-1.0*TCO45),      TPPT6)),TEMP,,ht4iise,
1716 NSOL, 9,(NODE(      TCO45,(-1.0*TCO45),      ( 0.5*TPPT6))),TEMP,,gt4iise,
1717 NSOL,10,(NODE(      TCO45,(-1.0*TCO45),      0.0)),TEMP,,c04iise,
1718 NSOL,11,(NODE(      TCO45,(-1.0*TCO45),      (-0.33*BTPT4))),TEMP,,gb4iise,
1719 NSOL,12,(NODE(      TCO45,(-1.0*TCO45),      (-0.66*BTPT4))),TEMP,,gb4hise,
1720 NSOL,13,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT4))),TEMP,,sb4iise,
1721 NSOL,14,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT3))),TEMP,,sb4oise,
1722 NSOL,15,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT2))),TEMP,,ib4iise,
1723 NSOL,16,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT1))),TEMP,,ib4oise,
1724 NSOL,17,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ob4oise,
1725 PRVAR, 2, 3, 4, 5, 6, 7,
1726 PRVAR, 8, 9,10,11,12,13,
1727 PRVAR,14,15,16,17,
1728 /COM,
1729 /COM, *****
1730 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1731 /COM, *****
1732 NSOL, 2,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ot4oose,
1733 NSOL, 3,(NODE(      SCO45,(-1.0*SCO45),      TPPT1)),TEMP,,ot4ioise,
1734 NSOL, 4,(NODE(      SCO45,(-1.0*SCO45),      TPPT2)),TEMP,,it4oose,
1735 NSOL, 5,(NODE(      SCO45,(-1.0*SCO45),      TPPT3)),TEMP,,it4ioise,
1736 NSOL, 6,(NODE(      SCO45,(-1.0*SCO45),      TPPT4)),TEMP,,st4oose,
1737 NSOL, 7,(NODE(      SCO45,(-1.0*SCO45),      TPPT5)),TEMP,,st4ioise,
1738 NSOL, 8,(NODE(      SCO45,(-1.0*SCO45),      TPPT6)),TEMP,,ht4ioise,
1739 NSOL, 9,(NODE(      SCO45,(-1.0*SCO45),      ( 0.5*TPPT6))),TEMP,,gt4ioise,
1740 NSOL,10,(NODE(      SCO45,(-1.0*SCO45),      0.0)),TEMP,,c04ioise,
1741 NSOL,11,(NODE(      SCO45,(-1.0*SCO45),      (-0.33*BTPT4))),TEMP,,gb4ioise,
1742 NSOL,12,(NODE(      SCO45,(-1.0*SCO45),      (-0.66*BTPT4))),TEMP,,gb4hiose,
1743 NSOL,13,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT4))),TEMP,,sb4ioise,
1744 NSOL,14,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT3))),TEMP,,sb4oose,
1745 NSOL,15,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT2))),TEMP,,ib4ioise,
1746 NSOL,16,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT1))),TEMP,,ib4oose,
1747 NSOL,17,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ob4oose,
1748 PRVAR, 2, 3, 4, 5, 6, 7,
1749 PRVAR, 8, 9,10,11,12,13,
1750 PRVAR,14,15,16,17,
1751 /COM,
1752 /COM, *****
1753 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1754 /COM, *****
1755 NSOL, 2,(NODE(      DCORD,0.0,      MIDPT)),TEMP,,otwoose,
1756 NSOL, 3,(NODE(      DCORD,0.0,      TPPT1)),TEMP,,otwioise,
1757 NSOL, 4,(NODE(      DCORD,0.0,      TPPT2)),TEMP,,itwoose,
1758 NSOL, 5,(NODE(      DCORD,0.0,      TPPT3)),TEMP,,itwioise,
1759 NSOL, 6,(NODE(      DCORD,0.0,      TPPT4)),TEMP,,stwoose,
1760 NSOL, 7,(NODE(      DCORD,0.0,      TPPT5)),TEMP,,stwioise,
1761 NSOL, 8,(NODE(      DCORD,0.0,      TPPT6)),TEMP,,htwioise,
1762 NSOL, 9,(NODE(      DCORD,0.0,      ( 0.5*TPPT6))),TEMP,,gtwioise,
1763 NSOL,10,(NODE(      DCORD,0.0,      0.0)),TEMP,,c0wioise,
1764 NSOL,11,(NODE(      DCORD,0.0,      (-0.33*BTPT4))),TEMP,,gbwioise,
1765 NSOL,12,(NODE(      DCORD,0.0,      (-0.66*BTPT4))),TEMP,,gbwoose,
1766 NSOL,13,(NODE(      DCORD,0.0,      (-1.0*BTPT4))),TEMP,,sbwioise,
1767 NSOL,14,(NODE(      DCORD,0.0,      (-1.0*BTPT3))),TEMP,,sbwoose,
1768 NSOL,15,(NODE(      DCORD,0.0,      (-1.0*BTPT2))),TEMP,,ibwioise,

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```

1769 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1770 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1771 PRVAR, 2, 3, 4, 5, 6, 7,
1772 PRVAR, 8, 9,10,11,12,13,
1773 PRVAR,14,15,16,17,
1774 FINISH
1775 /COM, *****
1776 /COM, End of batch input file
1777 /COM, *****
1778 SAVE,
1779 /EXIT,
1780 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP     /input,,inp,
ABBREVIATION= X3D     /show,3d,
ABBREVIATION= X11     /show,x11,
ABBREVIATION= VEC     /show,,,1,
ABBREVIATION= RAS     /show,,,0,

```

ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

* *
 * File name: glsh21b2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 * *
 * Material Property file: propsd1.dat *
 * *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 * *
 * *
 * SNF Heat Loads file: hangls1.dat *
 * Initial Heat Load: 870 W/canister *
 * *
 * Surface Temp. file: c21b5a.parm *
 * 100 MTU/acre (20.5 kgU/m^2) AML (High Thermal Loading) *
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 22.5 m *
 * WP c/c spacing = 19.5 m *
 * *

Increase the number of database pages from 16 (256) to 32 Mb

DONT DO: /CONFIG,nvpag,512,

Work space must also be increased (-m 87) For Radiation Matix

TITLE=

DHLW Glass Form Waste Package

SI UNITS SPECIFIED

LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT = AMPS

Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE ***

CP= .700 TIME= 10:37:06

Restore ANSYS parameters from file= c21b5a.parm.

/INPUT FILE= c21b5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WSPC = 19.50000

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01

PARAMETER IWALL = .2000000E-01

PARAMETER DCORD = .8545000
 PARAMETER DCLN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass hieght; hieght of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000
 PARAMETER BTPT4 = 1.495000
 Top of WP

PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)

FUEL = volumetric heat production (W/m³) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de

TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de

HCI45 = x coord. WP Center Line side of center Glass at

HCO45 = x coord. WP Edge side of center Glass at 45 deg.

CCO45 = x coord. Glass Center Line in Pour Can. at 45 de

SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.

SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.

MI45 = x coord. DCIRD at 45 deg.

MO45 = x coord. DCIRD+IWALL at 45 deg.

DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TCO45 = .1094244

PARAMETER TCI45 = .1161419

PARAMETER HCI45 = .2205462

PARAMETER HCO45 = .4293549

PARAMETER CCO45 = .3249505

PARAMETER SCO45 = .5404767

PARAMETER SCI45 = .5337592

PARAMETER MI45 = .5547253

PARAMETER MO45 = .5688674

PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:37:07 NOV 02, 1995 CP= 1.450
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **

** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSw2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **

** Emissivity EMIS **

** Conductivity: KXX (W/m/K) **

** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1
SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1

SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1	21.11000	37.78000	65.56000
	93.33000	121.1100	148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7	176.6700	204.4400	232.2200
	260.0000	287.7800	315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***

SLOC= 13	343.3300	371.1100	398.8900
	426.6700	454.4400	482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***

SLOC= 19	510.0000	537.7800	565.5600
	593.3300	621.1100	648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***

SLOC= 25	676.6700	704.4400	732.2200
	760.0000	787.7800	815.5600

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 6	
SLOC= 1	13.33000	13.67000	14.19000	14.54000
	15.06000	15.58000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 12	
SLOC= 7	15.92000	16.44000	16.96000	17.31000
	17.83000	18.17000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 18	
SLOC= 13	18.52000	19.04000	19.38000	19.90000
	20.25000	20.77000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 24	
SLOC= 19	21.11000	21.46000	21.98000	22.33000
	22.67000	23.02000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 30	
SLOC= 25	23.54000	23.88000	24.23000	24.58000
	24.92000	25.27000		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 6	
SLOC= 1	481.6800	486.9200	498.0900	499.3800
	509.9800	520.2900		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 12	
SLOC= 7	521.0700	527.3800	536.9200	537.3400
	543.0200	543.3100		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 18	
SLOC= 13	546.9100	552.1400	552.2600	557.2200
	557.2500	565.1100		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 24	
SLOC= 19	565.0100	564.9100	572.3500	572.1400
	574.9200	574.6800		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 30	
SLOC= 25	581.6400	581.3000	583.8600	586.3600
	585.9600	588.3900		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 6	
SLOC= 1	40.84000	41.36000	41.88000	42.23000
	42.23000	42.23000		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 12	
SLOC= 7	42.06000	41.88000	41.36000	41.02000
	40.50000	39.98000		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 18	
SLOC= 13	39.29000	38.77000	38.08000	37.56000
	36.69000	36.17000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	24	
SLOC= 19	35.48000	34.61000	33.92000		33.23000
	32.36000	31.50000			

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	30	
SLOC= 25	30.29000	28.90000	27.35000		26.48000
	26.13000	26.13000			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	6	
SLOC= 1	428.7200	444.9500	460.9400		476.8700
	486.0800	495.6600			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	12	
SLOC= 7	506.0900	517.0700	525.6400		536.9900
	543.6300	550.6200			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	18	
SLOC= 13	562.2100	577.3200	589.1000		600.5700
	611.3500	629.0900			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	24	
SLOC= 19	645.3200	665.1200	682.0700		694.5200
	724.0700	761.9500			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	30	
SLOC= 25	806.3100	888.6000	1095.040		1638.780
	808.6800	736.9000			

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	6 ***
SLOC= 1	93.33000	121.1100
	176.6700	204.4400
		148.8900
		232.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	12 ***
SLOC= 7	260.0000	287.7800
	343.3300	371.1100
		315.5600
		398.8900

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	18 ***
SLOC= 13	426.6700	454.4400
	510.0000	537.7800
		482.2200
		565.5600

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	24 ***
SLOC= 19	593.3300	621.1100
	676.6700	704.4400
		648.8900
		732.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	27 ***
SLOC= 25	760.0000	787.7800
		815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	6	
SLOC= 1	12.29000	12.63000	13.15000		13.67000
	14.02000	14.54000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	12	
SLOC= 7	14.88000	15.40000	15.75000		16.10000
	16.61000	16.96000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	18	
SLOC= 13	17.31000	17.65000	18.00000		18.52000
	18.86000	19.21000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	24	
SLOC= 19	19.73000	20.08000	20.42000		20.94000
	21.46000	21.98000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	27	
--------------------	------	---	--------------	----	--

SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 93.33000 121.1100 148.8900
176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 260.0000 287.7800 315.5600
343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***

SLOC= 13 426.6700 454.4400 482.2200
510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6

SLOC= 1 460.6900 477.4200 501.0200 504.6500
498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12

SLOC= 7 536.8800 559.8500 576.8300 576.2100
581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17

SLOC= 13 619.5800 636.7600 654.2000 678.2500
696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 1 25.00000 50.00000 94.00000
95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 5 105.0000 114.0000 115.0000
155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***

SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4

SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8

SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11

SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, ~10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 -13.15000 6.850000 26.85000
76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 226.8500 276.8500 326.8500
376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***

SLOC= 13	526.8500	626.8500	726.8500	
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6				
SLOC= 1	.1875000	.1750000	.1625000	.1422000
	.1219000	.1097000		
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12				
SLOC= 7	.9750000E-01	.9060000E-01	.8360000E-01	.7670000E-01
	.6970000E-01	.6620000E-01		
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15				
SLOC= 13	.6270000E-01	.5580000E-01	.4880000E-01	
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6				
SLOC= 1	.1370000	.1450000	.1520000	.1700000
	.1870000	.2040000		
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12				
SLOC= 7	.2200000	.2360000	.2520000	.2640000
	.2780000	.2910000		
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15				
SLOC= 13	.3040000	.3300000	.3540000	
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6				
SLOC= 1	1.348000	1.254700	1.161400	.9950000
	.8711000	.7740000		
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12				
SLOC= 7	.6964000	.6329000	.5804000	.5356000
	.4975000	.4643000		
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15				
SLOC= 13	.4354000	.3868000	.3482000	
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6				
SLOC= 1	.2300000E-01	.2500000E-01	.2600000E-01	.3000000E-01
	.3400000E-01	.3700000E-01		
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12				
SLOC= 7	.4100000E-01	.4400000E-01	.4700000E-01	.5000000E-01
	.5200000E-01	.5500000E-01		
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15				
SLOC= 13	.5700000E-01	.6200000E-01	.6700000E-01	
PROPERTY TABLE C MAT= 8 NUM. POINTS= 6				
SLOC= 1	1006.200	1006.600	1007.000	1009.000
	1014.000	1021.000		
PROPERTY TABLE C MAT= 8 NUM. POINTS= 12				
SLOC= 7	1030.000	1040.000	1051.000	1063.000
	1075.000	1087.000		
PROPERTY TABLE C MAT= 8 NUM. POINTS= 15				
SLOC= 13	1099.000	1121.000	1141.000	
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6				
SLOC= 1	1.303700	1.213500	1.123300	.9625000
	.8425000	.7485000		
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12				
SLOC= 7	.6739000	.6124000	.5615000	.5214000
	.4812000	.4512000		
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15				
SLOC= 13	.4211000	.3743000	.3368000	
PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6				

SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
 .3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
 SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
 .5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
 SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
 SLOC= 1 1041.800 1041.400 1041.000 1042.000
 1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
 SLOC= 7 1056.000 1065.000 1075.000 1086.500
 1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
 SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
 SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
 .2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
 SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
 .3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
 SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -73.15000 26.85000 126.8500
 326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
 SLOC= 1 413.0000 401.0000 393.0000 379.0000
 366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
 SLOC= 1 356.0000 385.0000 397.0000 417.0000
 433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
 SLOC= 1 23.00000 50.00000 100.0000
 150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
 SLOC= 1 182.5600 190.1700 199.2200 202.9100
 203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
 SLOC= 1 868.0000 903.0000 946.0000 976.0000
 998.0000

 ** End of Material Property List **

Define new material 15 for low thermal loading
 outer barrier of 70/30 Copper Nickel (C71500)

Density: DENS (kg/m³)
 Emissivity: EMIS
 Conductivity: KXX (W/m/K)
 Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .0000000E+00
 Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
 Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
 Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
 Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
 Calculate the volumetric heat generation
 (Assembly time is in years, FUEL is in seconds)

/INPUT FILE= hangls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
 ** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **

** Executable File Name: MATHCAD.EXE **
 ** Output File Name: hanfgl1.dat **
 ** Execution Date: 04/17/95 **
 ** Start Age (years): 0.0 **
 ** Decay Period (years): 10000 **
 ** Enrichment (kg Pu): N.A. **
 ** Burnup (MWd/MTHM): N.A. **
 ** Assembly Type: SR Pour Canis **
 ** Pu Fract. (kg Pu/KG HM):N.A. **

** ASSY(#,1) is the Pour Canister heat in Watts. **
 ** ASSY(#,0) is the time post emplacement in years. **

PARAMETER ASSY(1,1) =	871.2000 860.1000	868.4000 857.4000	865.6000	862.9000
PARAMETER ASSY(7,1) =	854.8000 844.3000	852.1000 831.8000	849.5000	846.9000
PARAMETER ASSY(13,1) =	819.7000 776.4000	808.2000 766.7000	797.1000	786.6000
PARAMETER ASSY(19,1) =	757.4000 723.7000	748.4000 716.1000	739.9000	731.6000
PARAMETER ASSY(25,1) =	708.9000 682.5000	701.9000 631.9000	695.2000	688.7000
PARAMETER ASSY(31,1) =	596.7000 524.9000	571.3000 514.5000	552.1000	537.1000
PARAMETER ASSY(37,1) =	505.5000 476.4000	497.3000 470.2000	489.9000	483.0000
PARAMETER ASSY(43,1) =	464.3000 442.1000	458.5000 393.8000	452.9000	447.5000
PARAMETER ASSY(49,1) =	351.5000 225.4000	314.1000 202.2000	280.9000	251.5000
PARAMETER ASSY(55,1) =	181.6000 120.0000	163.4000 108.7000	147.2000	132.8000
PARAMETER ASSY(61,1) =	98.57000 68.25000	89.60000 32.95000	81.64000	74.55000
PARAMETER ASSY(67,1) =	21.19000 11.42000	16.60000 10.33000	14.26000	12.69000
PARAMETER ASSY(73,1) =	9.355000 6.318000	8.477000 5.731000	7.684000	6.967000
PARAMETER ASSY(79,1) =	5.199000 3.533000	4.719000 1.390000	4.283000	3.890000
PARAMETER ASSY(85,1) =	.5979000 .1284000	.3034000 .1181000	.1920000	.1478000
PARAMETER ASSY(91,1) =	.1111000 .9000000E-01	.1054000 .8500000E-01	.1002000	.9510000E-01
PARAMETER ASSY(97,1) =	.8000000E-01 .6000000E-01	.7500000E-01	.7000000E-01	.6500000E-01
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000
PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000

```

PARAMETER ASSY(37,0) =    5.000000    5.500000    6.000000    6.500000
                        7.000000    7.500000

PARAMETER ASSY(43,0) =    8.000000    8.500000    9.000000    9.500000
                        10.00000    15.00000

PARAMETER ASSY(49,0) =    20.00000    25.00000    30.00000    35.00000
                        40.00000    45.00000

PARAMETER ASSY(55,0) =    50.00000    55.00000    60.00000    65.00000
                        70.00000    75.00000

PARAMETER ASSY(61,0) =    80.00000    85.00000    90.00000    95.00000
                        100.0000    150.0000

PARAMETER ASSY(67,0) =    200.0000    250.0000    300.0000    350.0000
                        400.0000    450.0000

PARAMETER ASSY(73,0) =    500.0000    550.0000    600.0000    650.0000
                        700.0000    750.0000

PARAMETER ASSY(79,0) =    800.0000    850.0000    900.0000    950.0000
                        1000.000    1500.000

PARAMETER ASSY(85,0) =    2000.000    2500.000    3000.000    3500.000
                        4000.000    4500.000

PARAMETER ASSY(91,0) =    5000.000    5500.000    6000.000    6500.000
                        7000.000    7500.000

PARAMETER ASSY(97,0) =    8000.000    8500.000    9000.000    9500.000
                        10000.00

```

PARAMETER ASSY(0,1) = 1.000000

```

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

```

```

MATRIX COPY RESULT MATRIX= FUEL(1,0)
INPUT MATRIX= ASSY(1,0)
INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

```

```

FACTOR ON VECTOR OPERATION RESULT= 1.6939
FACTOR ON FIRST VECTOR PARAMETER = 1.0000
FACTOR ON SECOND VECTOR PARAMETER= 1.0000
FACTOR ON THIRD VECTOR PARAMETER = 1.0000

```

```

VECTOR PARAMETER OPERATION *VFUN
FUEL(1) = COPY ASSY(1)
SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
VECTOR LENGTH= 101

```

PARAMETER FUEL(0,1) = 1.000000

```

Define LOCAL Coordinate system for canister orientation
if use CSYS,0, the P. Cans are 2x2,
if use CSYS,15, the P. Cans are 1x2x1.

```

LOCAL,15,0,0,0,0,0,0,45.0,0,0,0,0,

```

Construct geometry for a single SRP Pour Canister
(K's 1 - 10 )
(L's 1 - 16 )
(A's 1 - 8 )

```

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.= 1	KP1= 3	TAN1=	-.7071	-.7071	.0000
	KP2= 2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.= 2	KP1= 2	TAN1=	-.7071	.7071	.0000
	KP2= 6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.= 3	KP1= 4	TAN1=	-.7071	.7071	.0000
	KP2= 2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.= 4	KP1= 2	TAN1=	-.7071	-.7071	.0000
	KP2= 5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 5	KP1= 6	TAN1= -.7071
	KP2= 5	TAN2= -.7071
		.7071
		.0000

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 6	KP1= 5	TAN1= .7071
	KP2= 4	TAN2= -.7071
		-.7071
		.0000

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 7	KP1= 4	TAN1= .7071
	KP2= 3	TAN2= .7071
		-.7071
		.0000

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT= 2
RADIUS= .29530		
LINE NO.= 8	KP1= 3	TAN1= -.7071
	KP2= 6	TAN2= .7071
		.7071
		.0000

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.= 9	KP1= 7	TAN1=	-.7071	-.7071	.0000
	KP2= 3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.= 10	KP1= 10	TAN1=	.7071	-.7071	.0000
	KP2= 6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.= 11	KP1= 9	TAN1=	.7071	.7071	.0000
	KP2= 5	TAN2=	-.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	8	4			
LINE NO.= 12	KP1= 8	TAN1=	-.7071	.7071	.0000

```

                KP2=      4  TAN2=      .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      7 AND      8  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      13  KP1=      7  TAN1=      .7071  -.7071  .0000
                  KP2=      8  TAN2=      .7071  .7071  .0000

ARC BETWEEN KEYPOINTS      8 AND      9  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      14  KP1=      8  TAN1=     -.7071  -.7071  .0000
                  KP2=      9  TAN2=      .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      9 AND     10  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      15  KP1=      9  TAN1=     -.7071  .7071  .0000
                  KP2=     10  TAN2=     -.7071  -.7071  .0000

ARC BETWEEN KEYPOINTS     10 AND      7  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      16  KP1=     10  TAN1=      .7071  .7071  .0000
                  KP2=      7  TAN2=     -.7071  .7071  .0000

```

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      2      4      5
(TRAVERSED IN SAME DIRECTION AS LINE      2)

```

AREA NUMBER = 1

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      2      8
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 2

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      3      7
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 3

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      3      4      6
(TRAVERSED IN SAME DIRECTION AS LINE      3)

```

AREA NUMBER = 4

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      5     10     15     11
(TRAVERSED IN SAME DIRECTION AS LINE      5)

```

AREA NUMBER = 5

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      8      9     16     10
(TRAVERSED IN SAME DIRECTION AS LINE      8)

```

AREA NUMBER = 6

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      7     12     13      9
(TRAVERSED IN SAME DIRECTION AS LINE      7)

```

AREA NUMBER = 7

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      6     11     14     12
(TRAVERSED IN SAME DIRECTION AS LINE      6)

```

AREA NUMBER = 8

Interior and WP, Next
 (K's 11 - 19)
 (L's 17 - 34)
 (A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS=	0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS=	0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS=	0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS=	0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS=	0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS=	0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS=	0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS=	0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS=	0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1=	1	TAN1=	-.7071	-.7071
	KP2=	7	TAN2=	.7071	.7071
				.0000	.0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1=	10	TAN1=	-.9125	.4092
	KP2=	11	TAN2=	.9125	-.4092
				.0000	.0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1=	9	TAN1=	-.7071	-.7071
	KP2=	12	TAN2=	.7071	.7071
				.0000	.0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1=	8	TAN1=	.4092	-.9125
	KP2=	13	TAN2=	-.4092	.9125
				.0000	.0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1=	1	TAN1=	.0000	-1.0000
	KP2=	13	TAN2=	.0000	1.0000
				.0000	.0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1=	1	TAN1=	-1.0000	.0000
	KP2=	11	TAN2=	1.0000	.0000
				.0000	.0000

ARC BETWEEN KEYPOINTS	11 AND	12	ORIENTATION KEYPOINT=	1
RADIUS=	.78450			
LINE NO.= 23	KP1=	11	TAN1=	.0000
	KP2=	12	TAN2=	-.7071
				.0000

ARC BETWEEN KEYPOINTS	12 AND	13	ORIENTATION KEYPOINT=	1
RADIUS=	.78450			
LINE NO.= 24	KP1=	12	TAN1=	.7071
	KP2=	13	TAN2=	-1.0000
				.0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1=	11	TAN1=	-1.0000	.0000
	KP2=	14	TAN2=	1.0000	.0000
				.0000	.0000

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1=	12	TAN1=	-.7071	-.7071
	KP2=	15	TAN2=	.7071	.7071
				.0000	.0000

LINE CONNECTS KEYPOINTS	16	13			
LINE NO.= 27	KP1=	16	TAN1=	.0000	1.0000
	KP2=	13	TAN2=	.0000	-1.0000
				.0000	.0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
 KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
 KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17
 LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
 KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18
 LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
 KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16
 LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
 KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
 KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
 KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES
 LINE LIST = 22 18 16 17
 (TRAVERSED IN SAME DIRECTION AS LINE 22)
 AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 19 15 18
 (TRAVERSED IN SAME DIRECTION AS LINE 23)
 AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 20 14 19
 (TRAVERSED IN SAME DIRECTION AS LINE 24)
 AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES
 LINE LIST = 21 17 13 20
 (TRAVERSED IN SAME DIRECTION AS LINE 21)
 AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 25 28 26
 (TRAVERSED IN SAME DIRECTION AS LINE 23)
 AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 26 29 27
 (TRAVERSED IN SAME DIRECTION AS LINE 24)
 AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas
glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.970 TIME= 10:37:08
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.990 TIME= 10:37:08
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.990 TIME= 10:37:08
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.050 TIME= 10:37:08
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.070 TIME= 10:37:08
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.070 TIME= 10:37:08
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
 92 93 94 95 96

NUMBER OF AREAS MESHED = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces
 (K's 20 - 31)
 (L's 35 - 46)
 Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	20				
LINE NO.= 35	KP1=	1	TAN1=	.0000	.0000	1.0000
	KP2=	20	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	20	21				
LINE NO.= 36	KP1=	20	TAN1=	.0000	.0000	1.0000
	KP2=	21	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	21	22				
LINE NO.= 37	KP1=	21	TAN1=	.0000	.0000	1.0000
	KP2=	22	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	22	23				
LINE NO.= 38	KP1=	22	TAN1=	.0000	.0000	1.0000
	KP2=	23	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	23	24				
LINE NO.= 39	KP1=	23	TAN1=	.0000	.0000	1.0000
	KP2=	24	TAN2=	.0000	.0000	-1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
KEYPOINT	26	X,Y,Z=	.000000E+00	.000000E+00	1.21460	IN CSYS= 0

KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 9.75000 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -9.75000 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000

KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000

KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000

KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000

KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000

KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000

KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000
 Back Point
 (K's 40 - 44)
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -9.75000 IN CSYS= 0
 KEYPOINT 41 X,Y,Z= 2.50000 .183300 -9.75000 IN CSYS= 0
 KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -9.75000 IN CSYS= 0
 KEYPOINT 43 X,Y,Z= -2.50000 .183300 -9.75000 IN CSYS= 0
 KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -9.75000 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT 45 X,Y,Z= 1.73494 -1.61670 9.75000 IN CSYS= 0

KEYPOINT 46 X,Y,Z= 2.50000 .183300 9.75000 IN CSYS= 0

KEYPOINT 47 X,Y,Z= .000000E+00 2.68330 9.75000 IN CSYS= 0

KEYPOINT 48 X,Y,Z= -2.50000 .183300 9.75000 IN CSYS= 0

KEYPOINT 49 X,Y,Z= -1.73494 -1.61670 9.75000 IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 59 KP1= 45 TAN1= -.7200 -.6940 .0000
KP2= 46 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 60 KP1= 46 TAN1= .0000 -1.0000 .0000
KP2= 47 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 61 KP1= 47 TAN1= 1.0000 .0000 .0000
KP2= 48 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 62 KP1= 48 TAN1= .0000 1.0000 .0000
KP2= 49 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 49 45

LINE NO.= 63 KP1= 49 TAN1= -1.0000 .0000 .0000
KP2= 45 TAN2= 1.0000 .0000 .0000

Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40

LINE NO.= 64 KP1= 35 TAN1= .0000 .0000 1.0000
KP2= 40 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 36 41

LINE NO.= 65 KP1= 36 TAN1= .0000 .0000 1.0000
KP2= 41 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66 KP1= 37 TAN1= .0000 .0000 1.0000
KP2= 42 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (A's 17 - 26)

DEFINE AREA BY LIST OF LINES

LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.610 TIME= 10:37:09
Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES
LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.650 TIME= 10:37:09
Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES
LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.700 TIME= 10:37:09
Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES
LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.730 TIME= 10:37:09
Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES
LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 3.770 TIME= 10:37:09
Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES
LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 3.810 TIME= 10:37:09
Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES
LINE LIST = 61 72 51 71
(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 3.850 TIME= 10:37:09
 Lines 61, 72, 51, and 71 do not lie on a common
 coordinate value in the currently active coordinate system
 (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES
 LINE LIST = 62 73 52 72
 (TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.890 TIME= 10:37:09
 Lines 62, 73, 52, and 72 do not lie on a common
 coordinate value in the currently active coordinate system
 (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES
 LINE LIST = 53 64 58 68
 (TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES
 LINE LIST = 63 69 53 73
 (TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
 4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
 IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
 MAXIMUM NODE NUMBER = 430
 MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
 IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 481
 MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES

TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end

(K's 50 - 55)

KEYPOINT 50 X,Y,Z= .784500 .000000E+00 1.23460 IN CSYS= 0

KEYPOINT 51 X,Y,Z= .000000E+00 .784500 1.23460 IN CSYS= 0

KEYPOINT 52 X,Y,Z= .804500 .000000E+00 1.23460 IN CSYS= 0

KEYPOINT 53 X,Y,Z= .000000E+00 .804500 1.23460 IN CSYS= 0

KEYPOINT 54 X,Y,Z= .854500 .000000E+00 1.23460 IN CSYS= 0

KEYPOINT 55 X,Y,Z= .000000E+00 .854500 1.23460 IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS 27 50
LINE NO.= 74 KP1= 27 TAN1= -1.0000 .0000 .0000
KP2= 50 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 27 51
LINE NO.= 75 KP1= 27 TAN1= .0000 -1.0000 .0000
KP2= 51 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 50 52
LINE NO.= 76 KP1= 50 TAN1= -1.0000 .0000 .0000
KP2= 52 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 51 53
LINE NO.= 77 KP1= 51 TAN1= .0000 -1.0000 .0000
KP2= 53 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 52 54
LINE NO.= 78 KP1= 52 TAN1= -1.0000 .0000 .0000
KP2= 54 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 53 55
LINE NO.= 79 KP1= 53 TAN1= .0000 -1.0000 .0000
KP2= 55 TAN2= .0000 1.0000 .0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS 50 AND 51 ORIENTATION KEYPOINT= 27
RADIUS= .78450
LINE NO.= 80 KP1= 50 TAN1= .0000 -1.0000 .0000
KP2= 51 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
 RADIUS= .80450
 LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
 KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
 RADIUS= .85450
 LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
 KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 74 TO 75 STEP 1

2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 80 TO 82 STEP 1

5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 76 TO 79 STEP 1

4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 82 STEP 1

82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 55 STEP 1

55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
 (A's 27 - 29)

DEFINE AREA BY LIST OF LINES
 LINE LIST = 74 75 80
 (TRAVERSED IN SAME DIRECTION AS LINE 74)

AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
 LINE LIST = 80 76 81 77
 (TRAVERSED IN SAME DIRECTION AS LINE 80)

AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
 LINE LIST = 81 78 82 79
 (TRAVERSED IN SAME DIRECTION AS LINE 81)

AREA NUMBER = 29

Construct geometry for WP Bottom end
 (K's 56 - 61)

KEYPOINT 56 X,Y,Z= .78450 .000000E+00 -1.51000 IN CSYS= 0

KEYPOINT 57 X,Y,Z= .000000E+00 .784500 -1.51000 IN CSYS= 0
 KEYPOINT 58 X,Y,Z= .804500 .000000E+00 -1.51000 IN CSYS= 0
 KEYPOINT 59 X,Y,Z= .000000E+00 .804500 -1.51000 IN CSYS= 0
 KEYPOINT 60 X,Y,Z= .854500 .000000E+00 -1.51000 IN CSYS= 0
 KEYPOINT 61 X,Y,Z= .000000E+00 .854500 -1.51000 IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS 21 56
 LINE NO.= 83 KP1= 21 TAN1= -1.0000 .0000 .0000
 KP2= 56 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 21 57
 LINE NO.= 84 KP1= 21 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 56 58
 LINE NO.= 85 KP1= 56 TAN1= -1.0000 .0000 .0000
 KP2= 58 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 57 59
 LINE NO.= 86 KP1= 57 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 58 60
 LINE NO.= 87 KP1= 58 TAN1= -1.0000 .0000 .0000
 KP2= 60 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 59 61
 LINE NO.= 88 KP1= 59 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= .0000 1.0000 .0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS 56 AND 57 ORIENTATION KEYPOINT= 21
 RADIUS= .78450
 LINE NO.= 89 KP1= 56 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 58 AND 59 ORIENTATION KEYPOINT= 21
 RADIUS= .80450
 LINE NO.= 90 KP1= 58 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 60 AND 61 ORIENTATION KEYPOINT= 21
 RADIUS= .85450
 LINE NO.= 91 KP1= 60 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=

IN RANGE 85 TO 88 STEP 1

4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 29 STEP 1

29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 91 STEP 1

91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 61 STEP 1

61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
(A's 30 - 32)

DEFINE AREA BY LIST OF LINES
LINE LIST = 83 84 89
(TRAVERSED IN SAME DIRECTION AS LINE 83)

AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
LINE LIST = 89 85 90 86
(TRAVERSED IN SAME DIRECTION AS LINE 89)

AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
LINE LIST = 90 87 91 88
(TRAVERSED IN SAME DIRECTION AS LINE 90)

AREA NUMBER = 32

Mesh areas

Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6

MAXIMUM NODE NUMBER = 675

MAXIMUM ELEMENT NUMBER = 928

Extrude 2-D WP Interior into 3-D Space
(V's 1 - 32)

Bottom WP Area

DRAG AREAS
1, 2, 3, 4,
ALONG LINES
35, 36,

DRAG AREAS
5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 35, 36,

DRAG AREAS
 13, 14,
 ALONG LINES
 35, 36,

DRAG AREAS
 15, 16,
 ALONG LINES
 35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.730 TIME= 10:37:14
 Unmeshed line 178 is merged into meshed line 83.
 LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.730 TIME= 10:37:14
 Unmeshed line 196 is merged into meshed line 84.
 LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.730 TIME= 10:37:14
 Unmeshed line 218 is merged into meshed line 85.
 LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.730 TIME= 10:37:14
 Unmeshed line 221 is merged into meshed line 86.
 LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 8.730 TIME= 10:37:14

Unmeshed line 244 is merged into meshed line 87.
 LINE 88 USED FOR LINE(S) 247

*** WARNING *** CP= 8.740 TIME= 10:37:14

Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119
 LINE 95 USED FOR LINE(S) 118
 LINE 96 USED FOR LINE(S) 120
 LINE 99 USED FOR LINE(S) 127
 LINE 100 USED FOR LINE(S) 126
 LINE 102 USED FOR LINE(S) 132
 LINE 103 USED FOR LINE(S) 131
 LINE 104 USED FOR LINE(S) 136
 LINE 107 USED FOR LINE(S) 139
 LINE 108 USED FOR LINE(S) 138
 LINE 109 USED FOR LINE(S) 140
 LINE 112 USED FOR LINE(S) 147
 LINE 113 USED FOR LINE(S) 146
 LINE 115 USED FOR LINE(S) 152
 LINE 116 USED FOR LINE(S) 151
 LINE 117 USED FOR LINE(S) 156
 LINE 122 USED FOR LINE(S) 169
 LINE 123 USED FOR LINE(S) 170
 LINE 124 USED FOR LINE(S) 162
 LINE 128 USED FOR LINE(S) 163
 LINE 129 USED FOR LINE(S) 164
 LINE 133 USED FOR LINE(S) 177
 LINE 134 USED FOR LINE(S) 174
 LINE 137 USED FOR LINE(S) 175
 LINE 142 USED FOR LINE(S) 189
 LINE 143 USED FOR LINE(S) 190
 LINE 144 USED FOR LINE(S) 182
 LINE 148 USED FOR LINE(S) 183
 LINE 149 USED FOR LINE(S) 184
 LINE 153 USED FOR LINE(S) 197
 LINE 154 USED FOR LINE(S) 194
 LINE 157 USED FOR LINE(S) 195
 LINE 160 USED FOR LINE(S) 199
 LINE 166 USED FOR LINE(S) 198
 LINE 167 USED FOR LINE(S) 200
 LINE 171 USED FOR LINE(S) 206
 LINE 172 USED FOR LINE(S) 207
 LINE 180 USED FOR LINE(S) 212
 LINE 186 USED FOR LINE(S) 211
 LINE 187 USED FOR LINE(S) 213
 LINE 191 USED FOR LINE(S) 219
 LINE 192 USED FOR LINE(S) 220
 LINE 202 USED FOR LINE(S) 226
 LINE 203 USED FOR LINE(S) 224
 LINE 204 USED FOR LINE(S) 225
 LINE 209 USED FOR LINE(S) 233
 LINE 210 USED FOR LINE(S) 232
 LINE 215 USED FOR LINE(S) 239
 LINE 216 USED FOR LINE(S) 237
 LINE 217 USED FOR LINE(S) 238
 LINE 222 USED FOR LINE(S) 246
 LINE 223 USED FOR LINE(S) 245
 AREA 34 USED FOR AREA(S) 57
 AREA 38 USED FOR AREA(S) 62
 AREA 41 USED FOR AREA(S) 66
 AREA 43 USED FOR AREA(S) 70
 AREA 46 USED FOR AREA(S) 73
 AREA 50 USED FOR AREA(S) 78
 AREA 53 USED FOR AREA(S) 82
 AREA 55 USED FOR AREA(S) 86
 AREA 59 USED FOR AREA(S) 96
 AREA 63 USED FOR AREA(S) 91
 AREA 67 USED FOR AREA(S) 103
 AREA 71 USED FOR AREA(S) 100
 AREA 75 USED FOR AREA(S) 112

AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153
 (V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	25 USED FOR KEYPOINT(S)	131	
KEYPOINT	26 USED FOR KEYPOINT(S)	139	
KEYPOINT	27 USED FOR KEYPOINT(S)	147	
KEYPOINT	50 USED FOR KEYPOINT(S)	148	167
KEYPOINT	51 USED FOR KEYPOINT(S)	153	171
KEYPOINT	52 USED FOR KEYPOINT(S)	170	185
KEYPOINT	53 USED FOR KEYPOINT(S)	172	189
KEYPOINT	54 USED FOR KEYPOINT(S)	188	
KEYPOINT	55 USED FOR KEYPOINT(S)	190	
KEYPOINT	73 USED FOR KEYPOINT(S)	98	
KEYPOINT	76 USED FOR KEYPOINT(S)	99	
KEYPOINT	78 USED FOR KEYPOINT(S)	103	
KEYPOINT	80 USED FOR KEYPOINT(S)	105	
KEYPOINT	84 USED FOR KEYPOINT(S)	110	
KEYPOINT	86 USED FOR KEYPOINT(S)	111	
KEYPOINT	88 USED FOR KEYPOINT(S)	115	
KEYPOINT	90 USED FOR KEYPOINT(S)	117	
KEYPOINT	93 USED FOR KEYPOINT(S)	122	
KEYPOINT	95 USED FOR KEYPOINT(S)	123	
KEYPOINT	96 USED FOR KEYPOINT(S)	127	
KEYPOINT	97 USED FOR KEYPOINT(S)	129	
KEYPOINT	101 USED FOR KEYPOINT(S)	136	
KEYPOINT	102 USED FOR KEYPOINT(S)	133	
KEYPOINT	104 USED FOR KEYPOINT(S)	134	
KEYPOINT	108 USED FOR KEYPOINT(S)	138	
KEYPOINT	113 USED FOR KEYPOINT(S)	144	
KEYPOINT	114 USED FOR KEYPOINT(S)	141	
KEYPOINT	116 USED FOR KEYPOINT(S)	142	
KEYPOINT	120 USED FOR KEYPOINT(S)	146	
KEYPOINT	125 USED FOR KEYPOINT(S)	152	

KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 12.800 TIME= 10:37:18
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.800 TIME= 10:37:18
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.810 TIME= 10:37:18
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.810 TIME= 10:37:18
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.810 TIME= 10:37:18
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.810 TIME= 10:37:18
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282
 LINE 200 USED FOR LINE(S) 287
 LINE 213 USED FOR LINE(S) 300
 LINE 218 USED FOR LINE(S) 301

LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231
AREA	183	USED FOR AREA(S)	228
AREA	187	USED FOR AREA(S)	240
AREA	191	USED FOR AREA(S)	235

AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)
 Bottom WP Area

DRAG AREAS
 30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310
 (V's 90 - 101)
 Top WP Area

DRAG AREAS
 27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

 Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846
 MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS

IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 960
 MAXIMUM ELEMENT NUMBER = 1168
 SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1017
 MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
 IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.550 TIME= 10:37:23
 Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.550 TIME= 10:37:23
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.590 TIME= 10:37:23
 Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.590 TIME= 10:37:23
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.690 TIME= 10:37:23
 Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.690 TIME= 10:37:23
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.790 TIME= 10:37:23
 Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.790 TIME= 10:37:23
 Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
 MAXIMUM NODE NUMBER = 1081
 MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
 IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1195
 MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
 IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.300 TIME= 10:37:24
 Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.300 TIME= 10:37:24
 Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.330 TIME= 10:37:24
 Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.330 TIME= 10:37:24
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.420 TIME= 10:37:25
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.420 TIME= 10:37:25
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.500 TIME= 10:37:25
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.500 TIME= 10:37:25
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.650 TIME= 10:37:25
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.650 TIME= 10:37:25
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.690 TIME= 10:37:25
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.690 TIME= 10:37:25
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.790 TIME= 10:37:25
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.790 TIME= 10:37:25
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.890 TIME= 10:37:25
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.890 TIME= 10:37:25
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 20.520 TIME= 10:37:26
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.520 TIME= 10:37:26
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.570 TIME= 10:37:26
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.570 TIME= 10:37:26
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.690 TIME= 10:37:26
Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.690 TIME= 10:37:26
Worst aspect ratio is 49.8333333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.350 TIME= 10:37:27
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.350 TIME= 10:37:27
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.390 TIME= 10:37:27
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.390 TIME= 10:37:27
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.490 TIME= 10:37:27
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.500 TIME= 10:37:27
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.640 TIME= 10:37:27
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.640 TIME= 10:37:27
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.680 TIME= 10:37:27
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.680 TIME= 10:37:27
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.780 TIME= 10:37:27
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.790 TIME= 10:37:27
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888
Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2532

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 28.580 TIME= 10:37:34
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 10:37:34
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 10:37:34
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 10:37:34
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 10:37:34
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.610 TIME= 10:37:34
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.610 TIME= 10:37:34
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.610 TIME= 10:37:34
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.630 TIME= 10:37:34
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.640 TIME= 10:37:34
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.640 TIME= 10:37:34
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.640 TIME= 10:37:34
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.670 TIME= 10:37:34
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.680 TIME= 10:37:34
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.700 TIME= 10:37:34
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.710 TIME= 10:37:34

Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373
NODE 557	USED FOR NODES	1507
NODE 654	USED FOR NODES	1378
NODE 549	USED FOR NODES	1506

NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.160 TIME= 10:37:35
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE	3488	USED FOR NODES	5848
NODE	4099	USED FOR NODES	6471
NODE	4100	USED FOR NODES	6472
NODE	4539	USED FOR NODES	6911
NODE	4540	USED FOR NODES	6912
NODE	4037	USED FOR NODES	6397
NODE	5238	USED FOR NODES	7610
NODE	5239	USED FOR NODES	7611
NODE	4011	USED FOR NODES	6363
NODE	4012	USED FOR NODES	6364
NODE	3446	USED FOR NODES	5782
NODE	4920	USED FOR NODES	7292
NODE	4656	USED FOR NODES	7030
NODE	4657	USED FOR NODES	7031
NODE	4974	USED FOR NODES	7346
NODE	4345	USED FOR NODES	6717
NODE	4346	USED FOR NODES	6718
NODE	3448	USED FOR NODES	5786
NODE	3449	USED FOR NODES	5787
NODE	3450	USED FOR NODES	5788
NODE	4658	USED FOR NODES	7032
NODE	3975	USED FOR NODES	6327
NODE	3976	USED FOR NODES	6328
NODE	4921	USED FOR NODES	7293
NODE	4975	USED FOR NODES	7347
NODE	4660	USED FOR NODES	7055
NODE	3453	USED FOR NODES	5801
NODE	3452	USED FOR NODES	5800
NODE	4102	USED FOR NODES	6488
NODE	4014	USED FOR NODES	6372
NODE	4923	USED FOR NODES	7309
NODE	3978	USED FOR NODES	6336
NODE	4348	USED FOR NODES	6734
NODE	4541	USED FOR NODES	6927
NODE	4013	USED FOR NODES	6371
NODE	5240	USED FOR NODES	7626
NODE	3447	USED FOR NODES	5798
NODE	4038	USED FOR NODES	6401
NODE	4976	USED FOR NODES	7362
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NODE	7132	USED	FOR	NODES	9458
NODE	6795	USED	FOR	NODES	9129
NODE	7434	USED	FOR	NODES	9749
NODE	6550	USED	FOR	NODES	8873
NODE	6564	USED	FOR	NODES	8891
NODE	7448	USED	FOR	NODES	9767
NODE	6788	USED	FOR	NODES	9121
NODE	7139	USED	FOR	NODES	9466
NODE	2696	USED	FOR	NODES	5015
NODE	2703	USED	FOR	NODES	5025
NODE	1913	USED	FOR	NODES	4714
NODE	1622	USED	FOR	NODES	4139
NODE	1920	USED	FOR	NODES	4724
NODE	2341	USED	FOR	NODES	4387
NODE	1629	USED	FOR	NODES	4149
NODE	2348	USED	FOR	NODES	4395
NODE	2710	USED	FOR	NODES	5033
NODE	1927	USED	FOR	NODES	4732
NODE	1636	USED	FOR	NODES	4157
NODE	2349	USED	FOR	NODES	4394
NODE	2711	USED	FOR	NODES	5032
NODE	1921	USED	FOR	NODES	4723
NODE	1914	USED	FOR	NODES	4713
NODE	2342	USED	FOR	NODES	4386
NODE	1637	USED	FOR	NODES	4156
NODE	1928	USED	FOR	NODES	4731
NODE	1623	USED	FOR	NODES	4138

NODE 2704	USED FOR NODES	5024		
NODE 1630	USED FOR NODES	4148		
NODE 2697	USED FOR NODES	5014		
NODE 6551	USED FOR NODES	8872		
NODE 7126	USED FOR NODES	9447		
NODE 7133	USED FOR NODES	9457		
NODE 6796	USED FOR NODES	9128		
NODE 7435	USED FOR NODES	9748		
NODE 6789	USED FOR NODES	9120		
NODE 7442	USED FOR NODES	9758		
NODE 6558	USED FOR NODES	8882		
NODE 7140	USED FOR NODES	9465		
NODE 6565	USED FOR NODES	8890		
NODE 7449	USED FOR NODES	9766		
NODE 1929	USED FOR NODES	4730		
NODE 1638	USED FOR NODES	4155		
NODE 1624	USED FOR NODES	4137		
NODE 2698	USED FOR NODES	5013		
NODE 1922	USED FOR NODES	4722		
NODE 1915	USED FOR NODES	4712		
NODE 2705	USED FOR NODES	5023		
NODE 2343	USED FOR NODES	4385		
NODE 1631	USED FOR NODES	4147		
NODE 2350	USED FOR NODES	4393		
NODE 2712	USED FOR NODES	5031		
NODE 2344	USED FOR NODES	4384		
NODE 1632	USED FOR NODES	4146		
NODE 1923	USED FOR NODES	4721		
NODE 1625	USED FOR NODES	4136		
NODE 1916	USED FOR NODES	4711		
NODE 2706	USED FOR NODES	5022		
NODE 2699	USED FOR NODES	5012		
NODE 1639	USED FOR NODES	4154		
NODE 2713	USED FOR NODES	5030		
NODE 1930	USED FOR NODES	4729		
NODE 2351	USED FOR NODES	4392		
NODE 1868	USED FOR NODES	4710	7078	9446
NODE 1595	USED FOR NODES	4153	6521	8889
NODE 2653	USED FOR NODES	5021	7389	9757
NODE 117	USED FOR NODES	3315		
NODE 2314	USED FOR NODES	4391	6759	9127
NODE 1878	USED FOR NODES	4720	7088	9456
NODE 1886	USED FOR NODES	4728	7096	9464
NODE 116	USED FOR NODES	3299		
NODE 659	USED FOR NODES	3484		
NODE 588	USED FOR NODES	3380		
NODE 2306	USED FOR NODES	4383	6751	9119
NODE 2642	USED FOR NODES	5010	7378	9746
NODE 2661	USED FOR NODES	5029	7397	9765
NODE 491	USED FOR NODES	3929		
NODE 134	USED FOR NODES	3414		
NODE 1577	USED FOR NODES	4135	6503	8871
NODE 1587	USED FOR NODES	4145	6513	8881
NODE 543	USED FOR NODES	3935		
NODE 658	USED FOR NODES	3480		
NODE 135	USED FOR NODES	3430		
NODE 561	USED FOR NODES	4029		
NODE 544	USED FOR NODES	3939		
NODE 562	USED FOR NODES	4033		
NODE 640	USED FOR NODES	3386		
NODE 92	USED FOR NODES	3271		
NODE 641	USED FOR NODES	3390		
NODE 2654	USED FOR NODES	9810		
NODE 2644	USED FOR NODES	9803		
NODE 2315	USED FOR NODES	9164		
NODE 1588	USED FOR NODES	8926		
NODE 1578	USED FOR NODES	8919		
NODE 1887	USED FOR NODES	9508		
NODE 1879	USED FOR NODES	9501		
NODE 2662	USED FOR NODES	9817		

NODE	1869	USED	FOR	NODES	9494
NODE	2307	USED	FOR	NODES	9157
NODE	1596	USED	FOR	NODES	8933
NODE	2316	USED	FOR	NODES	9163
NODE	1579	USED	FOR	NODES	8918
NODE	1880	USED	FOR	NODES	9500
NODE	2663	USED	FOR	NODES	9816
NODE	1888	USED	FOR	NODES	9507
NODE	1597	USED	FOR	NODES	8932
NODE	2655	USED	FOR	NODES	9809
NODE	1870	USED	FOR	NODES	9493
NODE	1589	USED	FOR	NODES	8925
NODE	2308	USED	FOR	NODES	9156
NODE	2645	USED	FOR	NODES	9802
NODE	2664	USED	FOR	NODES	9815
NODE	2646	USED	FOR	NODES	9801
NODE	1590	USED	FOR	NODES	8924
NODE	2309	USED	FOR	NODES	9155
NODE	1881	USED	FOR	NODES	9499
NODE	1889	USED	FOR	NODES	9506
NODE	2317	USED	FOR	NODES	9162
NODE	2656	USED	FOR	NODES	9808
NODE	1580	USED	FOR	NODES	8917
NODE	1598	USED	FOR	NODES	8931
NODE	1871	USED	FOR	NODES	9492
NODE	2657	USED	FOR	NODES	9807
NODE	2665	USED	FOR	NODES	9814
NODE	2318	USED	FOR	NODES	9161
NODE	1591	USED	FOR	NODES	8923
NODE	1581	USED	FOR	NODES	8916
NODE	1872	USED	FOR	NODES	9491
NODE	1882	USED	FOR	NODES	9498
NODE	1599	USED	FOR	NODES	8930
NODE	1890	USED	FOR	NODES	9505
NODE	2310	USED	FOR	NODES	9154
NODE	2647	USED	FOR	NODES	9800
NODE	2319	USED	FOR	NODES	9160
NODE	2666	USED	FOR	NODES	9813
NODE	2311	USED	FOR	NODES	9153
NODE	2648	USED	FOR	NODES	9799
NODE	1582	USED	FOR	NODES	8915
NODE	1883	USED	FOR	NODES	9497
NODE	1592	USED	FOR	NODES	8922
NODE	2658	USED	FOR	NODES	9806
NODE	1873	USED	FOR	NODES	9490
NODE	1600	USED	FOR	NODES	8929
NODE	1891	USED	FOR	NODES	9504
NODE	2667	USED	FOR	NODES	9812
NODE	1884	USED	FOR	NODES	9496
NODE	2649	USED	FOR	NODES	9798
NODE	2312	USED	FOR	NODES	9152
NODE	2320	USED	FOR	NODES	9159
NODE	1892	USED	FOR	NODES	9503
NODE	1601	USED	FOR	NODES	8928
NODE	1593	USED	FOR	NODES	8921
NODE	1583	USED	FOR	NODES	8914
NODE	2659	USED	FOR	NODES	9805
NODE	1874	USED	FOR	NODES	9489
NODE	1893	USED	FOR	NODES	9502
NODE	1602	USED	FOR	NODES	8927
NODE	2668	USED	FOR	NODES	9811
NODE	2313	USED	FOR	NODES	9151
NODE	1885	USED	FOR	NODES	9495
NODE	1584	USED	FOR	NODES	8913
NODE	1875	USED	FOR	NODES	9488
NODE	1594	USED	FOR	NODES	8920
NODE	2321	USED	FOR	NODES	9158
NODE	2650	USED	FOR	NODES	9797
NODE	2660	USED	FOR	NODES	9804
NODE	1295	USED	FOR	NODES	8071

NODE	1450	USED	FOR	NODES	8640
NODE	1454	USED	FOR	NODES	8641
NODE	1400	USED	FOR	NODES	8587
NODE	1396	USED	FOR	NODES	8586
NODE	1586	USED	FOR	NODES	8898
NODE	1299	USED	FOR	NODES	8072
NODE	1877	USED	FOR	NODES	9473
NODE	1300	USED	FOR	NODES	8073
NODE	483	USED	FOR	NODES	8679
NODE	2651	USED	FOR	NODES	9781
NODE	1876	USED	FOR	NODES	9472
NODE	2643	USED	FOR	NODES	9773
NODE	580	USED	FOR	NODES	8130
NODE	1525	USED	FOR	NODES	8781
NODE	2652	USED	FOR	NODES	9782
NODE	75	USED	FOR	NODES	8067
NODE	1790	USED	FOR	NODES	9311
NODE	1798	USED	FOR	NODES	9312
NODE	1799	USED	FOR	NODES	9313
NODE	2304	USED	FOR	NODES	9135
NODE	1533	USED	FOR	NODES	8782
NODE	2305	USED	FOR	NODES	9136
NODE	1585	USED	FOR	NODES	8897
NODE	1471	USED	FOR	NODES	8651
NODE	1562	USED	FOR	NODES	8802
NODE	1772	USED	FOR	NODES	9048
NODE	1846	USED	FOR	NODES	9343
NODE	1417	USED	FOR	NODES	8597
NODE	1845	USED	FOR	NODES	9342
NODE	2063	USED	FOR	NODES	9623
NODE	2847	USED	FOR	NODES	9932
NODE	650	USED	FOR	NODES	8135
NODE	1416	USED	FOR	NODES	8596
NODE	553	USED	FOR	NODES	8684
NODE	1771	USED	FOR	NODES	9047
NODE	112	USED	FOR	NODES	8084
NODE	1470	USED	FOR	NODES	8650
NODE	1325	USED	FOR	NODES	8088
NODE	2446	USED	FOR	NODES	9241
NODE	2062	USED	FOR	NODES	9622
NODE	2846	USED	FOR	NODES	9929
NODE	2848	USED	FOR	NODES	9933
NODE	1844	USED	FOR	NODES	9341
NODE	2447	USED	FOR	NODES	9242
NODE	1561	USED	FOR	NODES	8801
NODE	1326	USED	FOR	NODES	8089
NODE	1327	USED	FOR	NODES	8090
NODE	1545	USED	FOR	NODES	8799
NODE	545	USED	FOR	NODES	8683
NODE	1546	USED	FOR	NODES	8800
NODE	642	USED	FOR	NODES	8134
NODE	1313	USED	FOR	NODES	8085
NODE	2046	USED	FOR	NODES	9620
NODE	2047	USED	FOR	NODES	9621
NODE	1408	USED	FOR	NODES	8594
NODE	1409	USED	FOR	NODES	8595
NODE	1462	USED	FOR	NODES	8648
NODE	108	USED	FOR	NODES	8083
NODE	1463	USED	FOR	NODES	8649
NODE	2430	USED	FOR	NODES	9239
NODE	2588	USED	FOR	NODES	9694
NODE	2431	USED	FOR	NODES	9240
NODE	2830	USED	FOR	NODES	9930
NODE	1315	USED	FOR	NODES	8087
NODE	1756	USED	FOR	NODES	9046
NODE	1820	USED	FOR	NODES	9338
NODE	1822	USED	FOR	NODES	9340
NODE	2831	USED	FOR	NODES	9931
NODE	1755	USED	FOR	NODES	9045
NODE	2589	USED	FOR	NODES	9702

NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING ***

CP= 62.510 TIME= 10:38:08

Same node numbers associated with more than one solid model entity.

Future mesh clearing operations could produce unexpected results.

NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 1 USED FOR KEYPOINT(S) 209 372 535
 KEYPOINT 11 USED FOR KEYPOINT(S) 541
 KEYPOINT 13 USED FOR KEYPOINT(S) 210
 KEYPOINT 14 USED FOR KEYPOINT(S) 551
 KEYPOINT 16 USED FOR KEYPOINT(S) 223
 KEYPOINT 17 USED FOR KEYPOINT(S) 560
 KEYPOINT 19 USED FOR KEYPOINT(S) 232
 KEYPOINT 20 USED FOR KEYPOINT(S) 212 375 538
 KEYPOINT 21 USED FOR KEYPOINT(S) 218 381 544
 KEYPOINT 22 USED FOR KEYPOINT(S) 297 460 623
 KEYPOINT 23 USED FOR KEYPOINT(S) 304 467 630

KEYPOINT	24 USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25 USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26 USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27 USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28 USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29 USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30 USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31 USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50 USED FOR KEYPOINT(S)	603		
KEYPOINT	51 USED FOR KEYPOINT(S)	274		
KEYPOINT	52 USED FOR KEYPOINT(S)	612		
KEYPOINT	53 USED FOR KEYPOINT(S)	285		
KEYPOINT	54 USED FOR KEYPOINT(S)	621		
KEYPOINT	55 USED FOR KEYPOINT(S)	294		
KEYPOINT	56 USED FOR KEYPOINT(S)	546		
KEYPOINT	57 USED FOR KEYPOINT(S)	217		
KEYPOINT	58 USED FOR KEYPOINT(S)	555		
KEYPOINT	59 USED FOR KEYPOINT(S)	228		
KEYPOINT	60 USED FOR KEYPOINT(S)	564		
KEYPOINT	61 USED FOR KEYPOINT(S)	237		
KEYPOINT	89 USED FOR KEYPOINT(S)	542		
KEYPOINT	94 USED FOR KEYPOINT(S)	211		
KEYPOINT	99 USED FOR KEYPOINT(S)	624		
KEYPOINT	103 USED FOR KEYPOINT(S)	296		
KEYPOINT	105 USED FOR KEYPOINT(S)	300		
KEYPOINT	107 USED FOR KEYPOINT(S)	552		
KEYPOINT	109 USED FOR KEYPOINT(S)	224		
KEYPOINT	110 USED FOR KEYPOINT(S)	625		
KEYPOINT	111 USED FOR KEYPOINT(S)	302		
KEYPOINT	115 USED FOR KEYPOINT(S)	627		
KEYPOINT	117 USED FOR KEYPOINT(S)	645		
KEYPOINT	119 USED FOR KEYPOINT(S)	561		
KEYPOINT	121 USED FOR KEYPOINT(S)	233		
KEYPOINT	122 USED FOR KEYPOINT(S)	631		
KEYPOINT	123 USED FOR KEYPOINT(S)	303		
KEYPOINT	127 USED FOR KEYPOINT(S)	307		
KEYPOINT	129 USED FOR KEYPOINT(S)	632		
KEYPOINT	131 USED FOR KEYPOINT(S)	309		
KEYPOINT	132 USED FOR KEYPOINT(S)	595		
KEYPOINT	133 USED FOR KEYPOINT(S)	634		
KEYPOINT	134 USED FOR KEYPOINT(S)	317		
KEYPOINT	136 USED FOR KEYPOINT(S)	638		
KEYPOINT	137 USED FOR KEYPOINT(S)	266		
KEYPOINT	138 USED FOR KEYPOINT(S)	310		
KEYPOINT	139 USED FOR KEYPOINT(S)	314		
KEYPOINT	140 USED FOR KEYPOINT(S)	599		
KEYPOINT	141 USED FOR KEYPOINT(S)	639		
KEYPOINT	142 USED FOR KEYPOINT(S)	316		
KEYPOINT	144 USED FOR KEYPOINT(S)	641		
KEYPOINT	145 USED FOR KEYPOINT(S)	270		
KEYPOINT	146 USED FOR KEYPOINT(S)	321		
KEYPOINT	147 USED FOR KEYPOINT(S)	646		
KEYPOINT	148 USED FOR KEYPOINT(S)	323		
KEYPOINT	149 USED FOR KEYPOINT(S)	648		
KEYPOINT	152 USED FOR KEYPOINT(S)	652		
KEYPOINT	153 USED FOR KEYPOINT(S)	324		
KEYPOINT	154 USED FOR KEYPOINT(S)	328		
KEYPOINT	155 USED FOR KEYPOINT(S)	653		
KEYPOINT	156 USED FOR KEYPOINT(S)	330		
KEYPOINT	158 USED FOR KEYPOINT(S)	606		
KEYPOINT	159 USED FOR KEYPOINT(S)	655		
KEYPOINT	160 USED FOR KEYPOINT(S)	279		
KEYPOINT	162 USED FOR KEYPOINT(S)	659		
KEYPOINT	164 USED FOR KEYPOINT(S)	609		
KEYPOINT	165 USED FOR KEYPOINT(S)	331		
KEYPOINT	166 USED FOR KEYPOINT(S)	282		
KEYPOINT	167 USED FOR KEYPOINT(S)	335		
KEYPOINT	168 USED FOR KEYPOINT(S)	660		
KEYPOINT	170 USED FOR KEYPOINT(S)	337		
KEYPOINT	171 USED FOR KEYPOINT(S)	662		

KEYPOINT	173	USED	FOR	KEYPOINT(S)	666
KEYPOINT	174	USED	FOR	KEYPOINT(S)	338
KEYPOINT	176	USED	FOR	KEYPOINT(S)	615
KEYPOINT	177	USED	FOR	KEYPOINT(S)	342
KEYPOINT	178	USED	FOR	KEYPOINT(S)	288
KEYPOINT	179	USED	FOR	KEYPOINT(S)	667
KEYPOINT	180	USED	FOR	KEYPOINT(S)	344
KEYPOINT	182	USED	FOR	KEYPOINT(S)	618
KEYPOINT	183	USED	FOR	KEYPOINT(S)	669
KEYPOINT	184	USED	FOR	KEYPOINT(S)	291
KEYPOINT	215	USED	FOR	KEYPOINT(S)	373
KEYPOINT	216	USED	FOR	KEYPOINT(S)	374
KEYPOINT	220	USED	FOR	KEYPOINT(S)	380
KEYPOINT	225	USED	FOR	KEYPOINT(S)	386
KEYPOINT	226	USED	FOR	KEYPOINT(S)	387
KEYPOINT	229	USED	FOR	KEYPOINT(S)	391
KEYPOINT	234	USED	FOR	KEYPOINT(S)	395
KEYPOINT	235	USED	FOR	KEYPOINT(S)	396
KEYPOINT	238	USED	FOR	KEYPOINT(S)	400
KEYPOINT	269	USED	FOR	KEYPOINT(S)	429
KEYPOINT	273	USED	FOR	KEYPOINT(S)	433
KEYPOINT	277	USED	FOR	KEYPOINT(S)	437
KEYPOINT	280	USED	FOR	KEYPOINT(S)	442
KEYPOINT	283	USED	FOR	KEYPOINT(S)	445
KEYPOINT	286	USED	FOR	KEYPOINT(S)	448
KEYPOINT	289	USED	FOR	KEYPOINT(S)	451
KEYPOINT	292	USED	FOR	KEYPOINT(S)	454
KEYPOINT	295	USED	FOR	KEYPOINT(S)	457
KEYPOINT	298	USED	FOR	KEYPOINT(S)	459
KEYPOINT	299	USED	FOR	KEYPOINT(S)	463
KEYPOINT	301	USED	FOR	KEYPOINT(S)	465
KEYPOINT	305	USED	FOR	KEYPOINT(S)	466
KEYPOINT	306	USED	FOR	KEYPOINT(S)	470
KEYPOINT	308	USED	FOR	KEYPOINT(S)	472
KEYPOINT	312	USED	FOR	KEYPOINT(S)	473
KEYPOINT	313	USED	FOR	KEYPOINT(S)	477
KEYPOINT	315	USED	FOR	KEYPOINT(S)	479
KEYPOINT	319	USED	FOR	KEYPOINT(S)	480
KEYPOINT	320	USED	FOR	KEYPOINT(S)	484
KEYPOINT	322	USED	FOR	KEYPOINT(S)	486
KEYPOINT	326	USED	FOR	KEYPOINT(S)	487
KEYPOINT	327	USED	FOR	KEYPOINT(S)	491
KEYPOINT	329	USED	FOR	KEYPOINT(S)	493
KEYPOINT	333	USED	FOR	KEYPOINT(S)	494
KEYPOINT	334	USED	FOR	KEYPOINT(S)	498
KEYPOINT	336	USED	FOR	KEYPOINT(S)	500
KEYPOINT	340	USED	FOR	KEYPOINT(S)	501
KEYPOINT	341	USED	FOR	KEYPOINT(S)	505
KEYPOINT	343	USED	FOR	KEYPOINT(S)	507
KEYPOINT	378	USED	FOR	KEYPOINT(S)	536
KEYPOINT	379	USED	FOR	KEYPOINT(S)	537
KEYPOINT	383	USED	FOR	KEYPOINT(S)	543
KEYPOINT	388	USED	FOR	KEYPOINT(S)	549
KEYPOINT	389	USED	FOR	KEYPOINT(S)	550
KEYPOINT	392	USED	FOR	KEYPOINT(S)	554
KEYPOINT	397	USED	FOR	KEYPOINT(S)	558
KEYPOINT	398	USED	FOR	KEYPOINT(S)	559
KEYPOINT	401	USED	FOR	KEYPOINT(S)	563
KEYPOINT	432	USED	FOR	KEYPOINT(S)	592
KEYPOINT	436	USED	FOR	KEYPOINT(S)	596
KEYPOINT	440	USED	FOR	KEYPOINT(S)	600
KEYPOINT	443	USED	FOR	KEYPOINT(S)	605
KEYPOINT	446	USED	FOR	KEYPOINT(S)	608
KEYPOINT	449	USED	FOR	KEYPOINT(S)	611
KEYPOINT	452	USED	FOR	KEYPOINT(S)	614
KEYPOINT	455	USED	FOR	KEYPOINT(S)	617
KEYPOINT	458	USED	FOR	KEYPOINT(S)	620
KEYPOINT	461	USED	FOR	KEYPOINT(S)	622
KEYPOINT	462	USED	FOR	KEYPOINT(S)	626
KEYPOINT	464	USED	FOR	KEYPOINT(S)	628

KEYPOINT	468	USED	FOR	KEYPOINT(S)	629
KEYPOINT	469	USED	FOR	KEYPOINT(S)	633
KEYPOINT	471	USED	FOR	KEYPOINT(S)	635
KEYPOINT	475	USED	FOR	KEYPOINT(S)	636
KEYPOINT	476	USED	FOR	KEYPOINT(S)	640
KEYPOINT	478	USED	FOR	KEYPOINT(S)	642
KEYPOINT	482	USED	FOR	KEYPOINT(S)	643
KEYPOINT	483	USED	FOR	KEYPOINT(S)	647
KEYPOINT	485	USED	FOR	KEYPOINT(S)	649
KEYPOINT	489	USED	FOR	KEYPOINT(S)	650
KEYPOINT	490	USED	FOR	KEYPOINT(S)	654
KEYPOINT	492	USED	FOR	KEYPOINT(S)	656
KEYPOINT	496	USED	FOR	KEYPOINT(S)	657
KEYPOINT	497	USED	FOR	KEYPOINT(S)	661
KEYPOINT	499	USED	FOR	KEYPOINT(S)	663
KEYPOINT	503	USED	FOR	KEYPOINT(S)	664
KEYPOINT	504	USED	FOR	KEYPOINT(S)	668
KEYPOINT	506	USED	FOR	KEYPOINT(S)	670
LINE	21	USED	FOR	LINE(S)	511
LINE	22	USED	FOR	LINE(S)	1363
LINE	25	USED	FOR	LINE(S)	1385
LINE	27	USED	FOR	LINE(S)	549
LINE	30	USED	FOR	LINE(S)	1406
LINE	32	USED	FOR	LINE(S)	570
LINE	35	USED	FOR	LINE(S)	514 931 1348
LINE	36	USED	FOR	LINE(S)	533 950 1367
LINE	37	USED	FOR	LINE(S)	746 1163 1580
LINE	38	USED	FOR	LINE(S)	765 1182 1599
LINE	39	USED	FOR	LINE(S)	781 1198 1615
LINE	40	USED	FOR	LINE(S)	662 1079 1496
LINE	41	USED	FOR	LINE(S)	674 1091 1508
LINE	42	USED	FOR	LINE(S)	686 1103 1520
LINE	43	USED	FOR	LINE(S)	797 1214 1631
LINE	44	USED	FOR	LINE(S)	816 1233 1650
LINE	45	USED	FOR	LINE(S)	832 1249 1666
LINE	46	USED	FOR	LINE(S)	848 1265 1682
LINE	74	USED	FOR	LINE(S)	1529
LINE	75	USED	FOR	LINE(S)	685
LINE	76	USED	FOR	LINE(S)	1552
LINE	77	USED	FOR	LINE(S)	716
LINE	78	USED	FOR	LINE(S)	1576
LINE	79	USED	FOR	LINE(S)	740
LINE	83	USED	FOR	LINE(S)	1376
LINE	84	USED	FOR	LINE(S)	532
LINE	85	USED	FOR	LINE(S)	1396
LINE	86	USED	FOR	LINE(S)	560
LINE	87	USED	FOR	LINE(S)	1417
LINE	88	USED	FOR	LINE(S)	581
LINE	158	USED	FOR	LINE(S)	1364
LINE	160	USED	FOR	LINE(S)	1359
LINE	172	USED	FOR	LINE(S)	512
LINE	176	USED	FOR	LINE(S)	513
LINE	180	USED	FOR	LINE(S)	1373
LINE	192	USED	FOR	LINE(S)	531
LINE	204	USED	FOR	LINE(S)	1386
LINE	205	USED	FOR	LINE(S)	1387
LINE	206	USED	FOR	LINE(S)	1584
LINE	207	USED	FOR	LINE(S)	1635
LINE	208	USED	FOR	LINE(S)	550
LINE	209	USED	FOR	LINE(S)	547
LINE	211	USED	FOR	LINE(S)	1582
LINE	217	USED	FOR	LINE(S)	1395
LINE	222	USED	FOR	LINE(S)	558
LINE	224	USED	FOR	LINE(S)	744
LINE	230	USED	FOR	LINE(S)	1407
LINE	231	USED	FOR	LINE(S)	1408
LINE	233	USED	FOR	LINE(S)	745
LINE	234	USED	FOR	LINE(S)	571
LINE	235	USED	FOR	LINE(S)	568
LINE	237	USED	FOR	LINE(S)	756

LINE	243	USED FOR LINE(S)	1416
LINE	245	USED FOR LINE(S)	754
LINE	248	USED FOR LINE(S)	579
LINE	250	USED FOR LINE(S)	1585
LINE	251	USED FOR LINE(S)	1586
LINE	257	USED FOR LINE(S)	762
LINE	258	USED FOR LINE(S)	760
LINE	263	USED FOR LINE(S)	1591
LINE	267	USED FOR LINE(S)	1592
LINE	269	USED FOR LINE(S)	1602
LINE	271	USED FOR LINE(S)	1600
LINE	278	USED FOR LINE(S)	763
LINE	282	USED FOR LINE(S)	764
LINE	283	USED FOR LINE(S)	773
LINE	287	USED FOR LINE(S)	771
LINE	289	USED FOR LINE(S)	1505
LINE	291	USED FOR LINE(S)	1502
LINE	293	USED FOR LINE(S)	1603
LINE	294	USED FOR LINE(S)	1604
LINE	295	USED FOR LINE(S)	778
LINE	300	USED FOR LINE(S)	776
LINE	303	USED FOR LINE(S)	660
LINE	305	USED FOR LINE(S)	1608
LINE	306	USED FOR LINE(S)	1609
LINE	307	USED FOR LINE(S)	661
LINE	308	USED FOR LINE(S)	1618
LINE	309	USED FOR LINE(S)	1517
LINE	310	USED FOR LINE(S)	1633
LINE	311	USED FOR LINE(S)	1514
LINE	313	USED FOR LINE(S)	1616
LINE	315	USED FOR LINE(S)	779
LINE	320	USED FOR LINE(S)	780
LINE	321	USED FOR LINE(S)	789
LINE	323	USED FOR LINE(S)	672
LINE	325	USED FOR LINE(S)	787
LINE	327	USED FOR LINE(S)	673
LINE	328	USED FOR LINE(S)	1619
LINE	329	USED FOR LINE(S)	1620
LINE	330	USED FOR LINE(S)	794
LINE	331	USED FOR LINE(S)	1526
LINE	333	USED FOR LINE(S)	792
LINE	335	USED FOR LINE(S)	1624
LINE	340	USED FOR LINE(S)	1625
LINE	343	USED FOR LINE(S)	684
LINE	345	USED FOR LINE(S)	795
LINE	346	USED FOR LINE(S)	796
LINE	347	USED FOR LINE(S)	807
LINE	348	USED FOR LINE(S)	805
LINE	350	USED FOR LINE(S)	1636
LINE	351	USED FOR LINE(S)	1637
LINE	355	USED FOR LINE(S)	1535
LINE	356	USED FOR LINE(S)	1536
LINE	357	USED FOR LINE(S)	813
LINE	358	USED FOR LINE(S)	811
LINE	359	USED FOR LINE(S)	700
LINE	360	USED FOR LINE(S)	698
LINE	363	USED FOR LINE(S)	1642
LINE	364	USED FOR LINE(S)	1643
LINE	368	USED FOR LINE(S)	1543
LINE	369	USED FOR LINE(S)	1544
LINE	370	USED FOR LINE(S)	1653
LINE	372	USED FOR LINE(S)	708
LINE	373	USED FOR LINE(S)	706
LINE	375	USED FOR LINE(S)	1651
LINE	377	USED FOR LINE(S)	814
LINE	381	USED FOR LINE(S)	1551
LINE	382	USED FOR LINE(S)	815
LINE	383	USED FOR LINE(S)	824
LINE	384	USED FOR LINE(S)	822
LINE	386	USED FOR LINE(S)	714

LINE	388	USED	FOR	LINE(S)	1654
LINE	389	USED	FOR	LINE(S)	1655
LINE	390	USED	FOR	LINE(S)	829
LINE	394	USED	FOR	LINE(S)	1559
LINE	395	USED	FOR	LINE(S)	1560
LINE	396	USED	FOR	LINE(S)	827
LINE	398	USED	FOR	LINE(S)	724
LINE	399	USED	FOR	LINE(S)	722
LINE	401	USED	FOR	LINE(S)	1659
LINE	402	USED	FOR	LINE(S)	1660
LINE	403	USED	FOR	LINE(S)	1669
LINE	407	USED	FOR	LINE(S)	1567
LINE	408	USED	FOR	LINE(S)	1568
LINE	410	USED	FOR	LINE(S)	1667
LINE	411	USED	FOR	LINE(S)	732
LINE	412	USED	FOR	LINE(S)	730
LINE	415	USED	FOR	LINE(S)	830
LINE	416	USED	FOR	LINE(S)	831
LINE	420	USED	FOR	LINE(S)	1575
LINE	421	USED	FOR	LINE(S)	840
LINE	422	USED	FOR	LINE(S)	838
LINE	424	USED	FOR	LINE(S)	1670
LINE	425	USED	FOR	LINE(S)	738
LINE	427	USED	FOR	LINE(S)	1671
LINE	428	USED	FOR	LINE(S)	845
LINE	429	USED	FOR	LINE(S)	843
LINE	431	USED	FOR	LINE(S)	1675
LINE	432	USED	FOR	LINE(S)	1676
LINE	433	USED	FOR	LINE(S)	1685
LINE	435	USED	FOR	LINE(S)	1683
LINE	437	USED	FOR	LINE(S)	846
LINE	438	USED	FOR	LINE(S)	847
LINE	439	USED	FOR	LINE(S)	856
LINE	440	USED	FOR	LINE(S)	854
LINE	442	USED	FOR	LINE(S)	1686
LINE	443	USED	FOR	LINE(S)	1687
LINE	444	USED	FOR	LINE(S)	861
LINE	445	USED	FOR	LINE(S)	859
LINE	447	USED	FOR	LINE(S)	1691
LINE	448	USED	FOR	LINE(S)	1692
LINE	525	USED	FOR	LINE(S)	929
LINE	529	USED	FOR	LINE(S)	928
LINE	530	USED	FOR	LINE(S)	930
LINE	539	USED	FOR	LINE(S)	948
LINE	542	USED	FOR	LINE(S)	949
LINE	551	USED	FOR	LINE(S)	966
LINE	552	USED	FOR	LINE(S)	964
LINE	553	USED	FOR	LINE(S)	967
LINE	561	USED	FOR	LINE(S)	975
LINE	562	USED	FOR	LINE(S)	977
LINE	572	USED	FOR	LINE(S)	987
LINE	573	USED	FOR	LINE(S)	985
LINE	574	USED	FOR	LINE(S)	988
LINE	582	USED	FOR	LINE(S)	996
LINE	583	USED	FOR	LINE(S)	998
LINE	668	USED	FOR	LINE(S)	1077
LINE	671	USED	FOR	LINE(S)	1078
LINE	680	USED	FOR	LINE(S)	1089
LINE	683	USED	FOR	LINE(S)	1090
LINE	692	USED	FOR	LINE(S)	1101
LINE	695	USED	FOR	LINE(S)	1102
LINE	701	USED	FOR	LINE(S)	1115
LINE	702	USED	FOR	LINE(S)	1117
LINE	709	USED	FOR	LINE(S)	1123
LINE	710	USED	FOR	LINE(S)	1125
LINE	717	USED	FOR	LINE(S)	1131
LINE	718	USED	FOR	LINE(S)	1133
LINE	725	USED	FOR	LINE(S)	1139
LINE	726	USED	FOR	LINE(S)	1141
LINE	733	USED	FOR	LINE(S)	1147

LINE	734	USED	FOR	LINE(S)	1149
LINE	741	USED	FOR	LINE(S)	1155
LINE	742	USED	FOR	LINE(S)	1157
LINE	748	USED	FOR	LINE(S)	1161
LINE	750	USED	FOR	LINE(S)	1162
LINE	751	USED	FOR	LINE(S)	1171
LINE	752	USED	FOR	LINE(S)	1173
LINE	757	USED	FOR	LINE(S)	1177
LINE	758	USED	FOR	LINE(S)	1179
LINE	766	USED	FOR	LINE(S)	1180
LINE	768	USED	FOR	LINE(S)	1181
LINE	769	USED	FOR	LINE(S)	1188
LINE	770	USED	FOR	LINE(S)	1190
LINE	774	USED	FOR	LINE(S)	1193
LINE	775	USED	FOR	LINE(S)	1195
LINE	782	USED	FOR	LINE(S)	1196
LINE	784	USED	FOR	LINE(S)	1197
LINE	785	USED	FOR	LINE(S)	1204
LINE	786	USED	FOR	LINE(S)	1206
LINE	790	USED	FOR	LINE(S)	1209
LINE	791	USED	FOR	LINE(S)	1211
LINE	799	USED	FOR	LINE(S)	1212
LINE	801	USED	FOR	LINE(S)	1213
LINE	802	USED	FOR	LINE(S)	1222
LINE	803	USED	FOR	LINE(S)	1224
LINE	808	USED	FOR	LINE(S)	1228
LINE	809	USED	FOR	LINE(S)	1230
LINE	817	USED	FOR	LINE(S)	1231
LINE	819	USED	FOR	LINE(S)	1232
LINE	820	USED	FOR	LINE(S)	1239
LINE	821	USED	FOR	LINE(S)	1241
LINE	825	USED	FOR	LINE(S)	1244
LINE	826	USED	FOR	LINE(S)	1246
LINE	833	USED	FOR	LINE(S)	1247
LINE	835	USED	FOR	LINE(S)	1248
LINE	836	USED	FOR	LINE(S)	1255
LINE	837	USED	FOR	LINE(S)	1257
LINE	841	USED	FOR	LINE(S)	1260
LINE	842	USED	FOR	LINE(S)	1262
LINE	849	USED	FOR	LINE(S)	1263
LINE	851	USED	FOR	LINE(S)	1264
LINE	852	USED	FOR	LINE(S)	1271
LINE	853	USED	FOR	LINE(S)	1273
LINE	857	USED	FOR	LINE(S)	1276
LINE	858	USED	FOR	LINE(S)	1278
LINE	942	USED	FOR	LINE(S)	1346
LINE	946	USED	FOR	LINE(S)	1345
LINE	947	USED	FOR	LINE(S)	1347
LINE	956	USED	FOR	LINE(S)	1365
LINE	959	USED	FOR	LINE(S)	1366
LINE	968	USED	FOR	LINE(S)	1383
LINE	969	USED	FOR	LINE(S)	1381
LINE	970	USED	FOR	LINE(S)	1384
LINE	978	USED	FOR	LINE(S)	1392
LINE	979	USED	FOR	LINE(S)	1394
LINE	989	USED	FOR	LINE(S)	1404
LINE	990	USED	FOR	LINE(S)	1402
LINE	991	USED	FOR	LINE(S)	1405
LINE	999	USED	FOR	LINE(S)	1413
LINE	1000	USED	FOR	LINE(S)	1415
LINE	1085	USED	FOR	LINE(S)	1494
LINE	1088	USED	FOR	LINE(S)	1495
LINE	1097	USED	FOR	LINE(S)	1506
LINE	1100	USED	FOR	LINE(S)	1507
LINE	1109	USED	FOR	LINE(S)	1518
LINE	1112	USED	FOR	LINE(S)	1519
LINE	1118	USED	FOR	LINE(S)	1532
LINE	1119	USED	FOR	LINE(S)	1534
LINE	1126	USED	FOR	LINE(S)	1540
LINE	1127	USED	FOR	LINE(S)	1542

LINE	1134	USED	FOR LINE(S)	1548
LINE	1135	USED	FOR LINE(S)	1550
LINE	1142	USED	FOR LINE(S)	1556
LINE	1143	USED	FOR LINE(S)	1558
LINE	1150	USED	FOR LINE(S)	1564
LINE	1151	USED	FOR LINE(S)	1566
LINE	1158	USED	FOR LINE(S)	1572
LINE	1159	USED	FOR LINE(S)	1574
LINE	1165	USED	FOR LINE(S)	1578
LINE	1167	USED	FOR LINE(S)	1579
LINE	1168	USED	FOR LINE(S)	1588
LINE	1169	USED	FOR LINE(S)	1590
LINE	1174	USED	FOR LINE(S)	1594
LINE	1175	USED	FOR LINE(S)	1596
LINE	1183	USED	FOR LINE(S)	1597
LINE	1185	USED	FOR LINE(S)	1598
LINE	1186	USED	FOR LINE(S)	1605
LINE	1187	USED	FOR LINE(S)	1607
LINE	1191	USED	FOR LINE(S)	1610
LINE	1192	USED	FOR LINE(S)	1612
LINE	1199	USED	FOR LINE(S)	1613
LINE	1201	USED	FOR LINE(S)	1614
LINE	1202	USED	FOR LINE(S)	1621
LINE	1203	USED	FOR LINE(S)	1623
LINE	1207	USED	FOR LINE(S)	1626
LINE	1208	USED	FOR LINE(S)	1628
LINE	1216	USED	FOR LINE(S)	1629
LINE	1218	USED	FOR LINE(S)	1630
LINE	1219	USED	FOR LINE(S)	1639
LINE	1220	USED	FOR LINE(S)	1641
LINE	1225	USED	FOR LINE(S)	1645
LINE	1226	USED	FOR LINE(S)	1647
LINE	1234	USED	FOR LINE(S)	1648
LINE	1236	USED	FOR LINE(S)	1649
LINE	1237	USED	FOR LINE(S)	1656
LINE	1238	USED	FOR LINE(S)	1658
LINE	1242	USED	FOR LINE(S)	1661
LINE	1243	USED	FOR LINE(S)	1663
LINE	1250	USED	FOR LINE(S)	1664
LINE	1252	USED	FOR LINE(S)	1665
LINE	1253	USED	FOR LINE(S)	1672
LINE	1254	USED	FOR LINE(S)	1674
LINE	1258	USED	FOR LINE(S)	1677
LINE	1259	USED	FOR LINE(S)	1679
LINE	1266	USED	FOR LINE(S)	1680
LINE	1268	USED	FOR LINE(S)	1681
LINE	1269	USED	FOR LINE(S)	1688
LINE	1270	USED	FOR LINE(S)	1690
LINE	1274	USED	FOR LINE(S)	1693
LINE	1275	USED	FOR LINE(S)	1695
AREA	89	USED	FOR AREA(S)	1148
AREA	102	USED	FOR AREA(S)	423
AREA	105	USED	FOR AREA(S)	1161
AREA	118	USED	FOR AREA(S)	439
AREA	124	USED	FOR AREA(S)	1168
AREA	127	USED	FOR AREA(S)	453
AREA	133	USED	FOR AREA(S)	1176
AREA	136	USED	FOR AREA(S)	462
AREA	142	USED	FOR AREA(S)	1184
AREA	145	USED	FOR AREA(S)	469
AREA	151	USED	FOR AREA(S)	1192
AREA	154	USED	FOR AREA(S)	478
AREA	169	USED	FOR AREA(S)	1347
AREA	178	USED	FOR AREA(S)	633
AREA	185	USED	FOR AREA(S)	640
AREA	194	USED	FOR AREA(S)	1350
AREA	201	USED	FOR AREA(S)	645
AREA	210	USED	FOR AREA(S)	1355
AREA	217	USED	FOR AREA(S)	1277
AREA	219	USED	FOR AREA(S)	1362

AREA	228	USED	FOR AREA(S)	648
AREA	230	USED	FOR AREA(S)	555
AREA	233	USED	FOR AREA(S)	1289
AREA	235	USED	FOR AREA(S)	654
AREA	244	USED	FOR AREA(S)	1364
AREA	246	USED	FOR AREA(S)	567
AREA	249	USED	FOR AREA(S)	1301
AREA	251	USED	FOR AREA(S)	658
AREA	260	USED	FOR AREA(S)	1368
AREA	262	USED	FOR AREA(S)	579
AREA	265	USED	FOR AREA(S)	1374
AREA	268	USED	FOR AREA(S)	1307
AREA	271	USED	FOR AREA(S)	593
AREA	274	USED	FOR AREA(S)	660
AREA	277	USED	FOR AREA(S)	1314
AREA	280	USED	FOR AREA(S)	600
AREA	283	USED	FOR AREA(S)	666
AREA	286	USED	FOR AREA(S)	1321
AREA	289	USED	FOR AREA(S)	607
AREA	292	USED	FOR AREA(S)	1376
AREA	295	USED	FOR AREA(S)	1328
AREA	298	USED	FOR AREA(S)	614
AREA	301	USED	FOR AREA(S)	670
AREA	304	USED	FOR AREA(S)	1335
AREA	307	USED	FOR AREA(S)	621
AREA	310	USED	FOR AREA(S)	1380
AREA	313	USED	FOR AREA(S)	1342
AREA	316	USED	FOR AREA(S)	628
AREA	319	USED	FOR AREA(S)	1386
AREA	321	USED	FOR AREA(S)	672
AREA	323	USED	FOR AREA(S)	679
AREA	325	USED	FOR AREA(S)	1389
AREA	327	USED	FOR AREA(S)	684
AREA	329	USED	FOR AREA(S)	1394
AREA	331	USED	FOR AREA(S)	1401
AREA	333	USED	FOR AREA(S)	687
AREA	335	USED	FOR AREA(S)	693
AREA	337	USED	FOR AREA(S)	1403
AREA	339	USED	FOR AREA(S)	697
AREA	341	USED	FOR AREA(S)	1407
AREA	343	USED	FOR AREA(S)	1413
AREA	345	USED	FOR AREA(S)	699
AREA	347	USED	FOR AREA(S)	705
AREA	349	USED	FOR AREA(S)	1415
AREA	351	USED	FOR AREA(S)	709
AREA	353	USED	FOR AREA(S)	1419
AREA	355	USED	FOR AREA(S)	1425
AREA	357	USED	FOR AREA(S)	711
AREA	359	USED	FOR AREA(S)	717
AREA	361	USED	FOR AREA(S)	1427
AREA	363	USED	FOR AREA(S)	721
AREA	365	USED	FOR AREA(S)	1431
AREA	436	USED	FOR AREA(S)	779
AREA	449	USED	FOR AREA(S)	795
AREA	456	USED	FOR AREA(S)	809
AREA	464	USED	FOR AREA(S)	818
AREA	472	USED	FOR AREA(S)	825
AREA	480	USED	FOR AREA(S)	834
AREA	565	USED	FOR AREA(S)	911
AREA	577	USED	FOR AREA(S)	923
AREA	589	USED	FOR AREA(S)	935
AREA	595	USED	FOR AREA(S)	949
AREA	602	USED	FOR AREA(S)	956
AREA	609	USED	FOR AREA(S)	963
AREA	616	USED	FOR AREA(S)	970
AREA	623	USED	FOR AREA(S)	977
AREA	630	USED	FOR AREA(S)	984
AREA	635	USED	FOR AREA(S)	989
AREA	638	USED	FOR AREA(S)	996
AREA	643	USED	FOR AREA(S)	1001

AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000

ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)

XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)

XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0

```

NSLA,S,1,
ESURF,
                                Inner SS. Side of Can. #1
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
*****
                                Define Elements for radiation
                                In Pour Canister First; Glass Surf. Can #2
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
                                Inner SS. Lid of Can. #2
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
                                Inner SS. Side of Can. #2
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
*****
                                Define Elements for radiation
                                In Pour Canister First; Glass Surf. Can #3
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
                                Inner SS. Lid of Can. #3
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

```

Inner SS. Side of Can. #3

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation - Between Can and IB
Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1
```

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

```
UNSELECT    FOR ITEM=LOC COMPONENT=X    BETWEEN .30490    AND    100.00
KABS= 0. TOLERANCE= .000000E+00
```

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

```
SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO    31 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO    0 (CARTESIAN)

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -1.5099     AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
-----
Top Can #2

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO    32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO    0 (CARTESIAN)

RESELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN 1.2346     AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #2

ELEMENT TYPE SET TO 26
```

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN 1.2336      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -100.00      AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .000000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -1.5099      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
```

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.240 TIME= 10:38:22
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360
KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
"top-of-inner-barrier" lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.160

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21b2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:38:54 NOV 02, 1995 CP= 107.290
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.720 TIME= 10:38:54
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5872.590

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:15:04 NOV 02, 1995 CP= 5872.590
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5873.250 TIME= 12:15:04
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7854.520

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH
/COM,
/AUX12,
ESEL,S,TYPE,,6,

NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,glscangap,

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:48:10 NOV 02, 1995 CP= 7854.600
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE SET TO 18
SE,glscangap,
SE,iobargap,

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 6 TO 6 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 16 TO 16 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7857.360

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21b2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....

DONT MESH; Either Assume its VOID or its meshed earlier

This section used only if both rad. and He conducti
is used in the model.

He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,
VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:48:26 NOV 02, 1995 CP= 7866.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****

View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

```
        6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

        3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
        6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph      - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph      - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP =      7876.530

*****
      Set solution parameters and apply B.C.'s

      Solve steady-state for initial conditions
      with WP surface equal to drift ambient
      temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE ***                      CP= 7876.540 TIME= 12:48:36
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
      Apply Drift Wall Temp. BC

SELECT      FOR ITEM=AREA COMPONENT=
IN RANGE    17 TO      26 STEP      1

        10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

        340 NODES (OF 8979 DEFINED) SELECTED FROM
        10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES      1 TO 10009 BY      1
REAL= 26.1377204      IMAG= .000000000E+00

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      1434 STEP      1

        1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
```

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7878.880 TIME= 12:48:38
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:48:38 NOV 02, 1995 CP= 7878.880
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM. TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO 273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7880.320 TIME= 12:48:40
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7880.760 TIME= 12:48:40
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19848.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.46977E-12	IXX = .2948E+05	IXX = .2919E+05
YC = -.12666E-01	IYY = .2922E+05	IYY = .2893E+05
ZC = -.11998	IZZ = 9905.	IZZ = 9902.
	IXY = .8715E-08	IXY = .8833E-08
	IYZ = .4600E-10	IYZ = 30.16
	IZX = -.2956E-08	IZX = -.1837E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	155.854

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7919.550 TIME= 12:50:13
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	21.990	.003
11	320	SHELL57	.780	.002
18	2	MATRIX50	5.680	2.840

Time at end of element matrix formulation CP= 7919.55.
HT FLOW CONVERGENCE VALUE= 155.6 CRITERION= .1556

Estimated number of active DOF= 8639.
Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8993.67.

Equation solver maximum pivot= 45.7730779 at node 8097 TEMP.
Equation solver minimum pivot= 0.217832933 at node 3498 TEMP.
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.7
HT FLOW CONVERGENCE VALUE= 461.7 CRITERION= .9967E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.28
HT FLOW CONVERGENCE VALUE= 55.59 CRITERION= .9967E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.29
HT FLOW CONVERGENCE VALUE= 10.34 CRITERION= .9967E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.005
HT FLOW CONVERGENCE VALUE= .6919 CRITERION= .9967E-01
EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2124
HT FLOW CONVERGENCE VALUE= .1711 CRITERION= .9967E-01
EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1616E-01
HT FLOW CONVERGENCE VALUE= .1000E-01 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.540	.002
11	320	SHELL57	.400	.001
18	2	MATRIX50	8.540	4.270

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.100	.000
11	320	SHELL57	.070	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS
ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 4096
57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21b2.emat
5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21b2.esav
58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21b2.tri
.047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21b2.dsub
5.297 MB WRITTEN ON RESULTS FILE: glsh21b2.rth

Solve steady-state for initial conditions
with WP surface temperatures from repository
steady-state solution.
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1378800 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14575.990 TIME= 15:00:36
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14576.430 TIME= 15:00:37
The step data was checked and warning messages were found.
Please review output or errors file (glsh21b2.err) for these warning messages.

*** NOTE *** CP= 14576.440 TIME= 15:00:37
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:00:37 NOV 02, 1995 CP= 14576.440
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .1004E-01 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3102E-02
HT FLOW CONVERGENCE VALUE= .2411E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21b2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,4,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07

TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

```

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION      1
1475.75403      .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1378800 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14865.900 TIME= 15:11:00
This load step will be a static (steady-state) step.

```

*** NOTE *** CP= 14866.340 TIME= 15:11:00
The step data was checked and warning messages were found.
Please review output or errors file (glsh21b2.err) for these warning messages.

*** NOTE *** CP= 14866.340 TIME= 15:11:00
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:11:00 NOV 02, 1995 CP= 14866.340
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .2411E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2620E-03
HT FLOW CONVERGENCE VALUE= .1560E-03 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 8
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15140.800 TIME= 15:21:01
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:21:01 NOV 02, 1995 CP= 15141.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 99.13 CRITERION= .1384
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 14.37
HT FLOW CONVERGENCE VALUE= 16.23 CRITERION= .9659E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.111
HT FLOW CONVERGENCE VALUE= 2.358 CRITERION= .9659E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1835
HT FLOW CONVERGENCE VALUE= .1238 CRITERION= .9659E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3692E-01
HT FLOW CONVERGENCE VALUE= .2769E-01 CRITERION= .9659E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4
*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 12
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15973.070 TIME= 15:49:36
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:49:36 NOV 02, 1995 CP= 15973.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 54.83 CRITERION= .1086
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 7.068
HT FLOW CONVERGENCE VALUE= 7.432 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.438
HT FLOW CONVERGENCE VALUE= 1.071 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7665E-01
HT FLOW CONVERGENCE VALUE= .5267E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16603.720 TIME= 16:12:04
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:12:04 NOV 02, 1995 CP= 16604.160
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.51 CRITERION= .9975E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.937
HT FLOW CONVERGENCE VALUE= 4.923 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9523
HT FLOW CONVERGENCE VALUE= .6914 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5150E-01
HT FLOW CONVERGENCE VALUE= .3249E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17242.630 TIME= 16:34:20
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:34:20 NOV 02, 1995 CP= 17243.070
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.05 CRITERION= .9474E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.876
HT FLOW CONVERGENCE VALUE= 3.698 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7145
HT FLOW CONVERGENCE VALUE= .5053 CRITERION= .8883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3853E-01
HT FLOW CONVERGENCE VALUE= .2282E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17883.220 TIME= 16:56:37
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:56:37 NOV 02, 1995 CP= 17883.660
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.18 CRITERION= .9109E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.208
HT FLOW CONVERGENCE VALUE= 2.948 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5684
HT FLOW CONVERGENCE VALUE= .3918 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3031E-01
HT FLOW CONVERGENCE VALUE= .1706E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18523.770 TIME= 17:18:52
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:18:52 NOV 02, 1995 CP= 18524.210
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 24.73 CRITERION= .8816E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.747
HT FLOW CONVERGENCE VALUE= 2.442 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4697
HT FLOW CONVERGENCE VALUE= .3157 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2464E-01
HT FLOW CONVERGENCE VALUE= .1329E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 27
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19164.190 TIME= 17:41:07
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:41:07 NOV 02, 1995 CP= 19164.640
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.17 CRITERION= .8569E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.413
HT FLOW CONVERGENCE VALUE= 2.083 CRITERION= .8280E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3995
HT FLOW CONVERGENCE VALUE= .2620 CRITERION= .8280E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2056E-01

HT FLOW CONVERGENCE VALUE= .1067E-01 CRITERION= .8280E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 30
*** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19804.130 TIME= 18:03:22
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:03:22 NOV 02, 1995 CP= 19804.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 20.24 CRITERION= .8357E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.164
HT FLOW CONVERGENCE VALUE= 1.825 CRITERION= .8110E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3486
HT FLOW CONVERGENCE VALUE= .2227 CRITERION= .8110E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1743E-01
HT FLOW CONVERGENCE VALUE= .8768E-02 CRITERION= .8110E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 33
*** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20451.280 TIME= 18:25:43
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:25:44 NOV 02, 1995 CP= 20451.720
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 18.73 CRITERION= .8170E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.971
HT FLOW CONVERGENCE VALUE= 1.625 CRITERION= .7954E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3093
HT FLOW CONVERGENCE VALUE= .1929 CRITERION= .7954E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1506E-01
HT FLOW CONVERGENCE VALUE= .7354E-02 CRITERION= .7954E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 36
*** TIME = .284019E+08 TIME INC = .315576E+07

Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08

TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1156.10879 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 70.7081776 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21097.730 TIME= 18:48:05
This load step will be a static (steady-state) step.

*** NOTE *** CP= 21098.170 TIME= 18:48:05
The step data was checked and warning messages were found.
Please review output or errors file (glsh21b2.err) for these warning
messages.

*** NOTE *** CP= 21098.180 TIME= 18:48:05
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:48:05 NOV 02, 1995 CP= 21098.180
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 17.53 CRITERION= .8001E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.818
HT FLOW CONVERGENCE VALUE= 1.470 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2786
HT FLOW CONVERGENCE VALUE= .1697 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1317E-01
HT FLOW CONVERGENCE VALUE= .6267E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 39
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21745.240 TIME= 19:10:26
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:10:27 NOV 02, 1995 CP= 21745.680
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 131.6 CRITERION= .1479
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 13.47
HT FLOW CONVERGENCE VALUE= 8.227 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.619
HT FLOW CONVERGENCE VALUE= .7139 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5765E-01
HT FLOW CONVERGENCE VALUE= .2626E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 42
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22388.250 TIME= 19:32:44
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:32:44 NOV 02, 1995 CP= 22388.690
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 99.76 CRITERION= .1180
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.259
HT FLOW CONVERGENCE VALUE= 4.562 CRITERION= .6316E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.038
HT FLOW CONVERGENCE VALUE= .4136 CRITERION= .6316E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2998E-01
HT FLOW CONVERGENCE VALUE= .1267E-01 CRITERION= .6316E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23040.770 TIME= 19:55:10
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:55:11 NOV 02, 1995 CP= 23041.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 77.11 CRITERION= .9769E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.684
HT FLOW CONVERGENCE VALUE= 2.992 CRITERION= .6005E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7104
HT FLOW CONVERGENCE VALUE= .2613 CRITERION= .6005E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1813E-01
HT FLOW CONVERGENCE VALUE= .7119E-02 CRITERION= .6005E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23686.090 TIME= 20:17:30
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:17:31 NOV 02, 1995 CP= 23686.530
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 65.22 CRITERION= .8714E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.382
HT FLOW CONVERGENCE VALUE= 2.363 CRITERION= .5783E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5437
HT FLOW CONVERGENCE VALUE= .1882 CRITERION= .5783E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1264E-01
HT FLOW CONVERGENCE VALUE= .4687E-02 CRITERION= .5783E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 51
*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24337.600 TIME= 20:39:55
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:39:56 NOV 02, 1995 CP= 24338.040
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 57.25 CRITERION= .8010E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.541
HT FLOW CONVERGENCE VALUE= 1.942 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4371
HT FLOW CONVERGENCE VALUE= .1441 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9481E-02
HT FLOW CONVERGENCE VALUE= .3343E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24989.540 TIME= 21:02:22
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:02:22 NOV 02, 1995 CP= 24989.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 51.14 CRITERION= .7472E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.924
HT FLOW CONVERGENCE VALUE= 1.568 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3607
HT FLOW CONVERGENCE VALUE= .1072 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7406E-02
HT FLOW CONVERGENCE VALUE= .2603E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 57
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25641.650 TIME= 21:24:49
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:24:49 NOV 02, 1995 CP= 25642.090
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.11 CRITERION= .7099E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.513
HT FLOW CONVERGENCE VALUE= 1.319 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3093
HT FLOW CONVERGENCE VALUE= .8850E-01 CRITERION= .5312E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6047E-02
HT FLOW CONVERGENCE VALUE= .2039E-02 CRITERION= .5312E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 60

*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26286.360 TIME= 21:47:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:47:10 NOV 02, 1995 CP= 26286.810
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 38.58 CRITERION= .6459E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.805
HT FLOW CONVERGENCE VALUE= 1.013 CRITERION= .5182E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2361
HT FLOW CONVERGENCE VALUE= .6572E-01 CRITERION= .5182E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4565E-02
HT FLOW CONVERGENCE VALUE= .1459E-02 CRITERION= .5182E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 63
*** TIME = .284018E+09 TIME INC = .315576E+08
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 122.666825 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26939.280 TIME= 22:09:36
This load step will be a static (steady-state) step.

*** NOTE *** CP= 26939.720 TIME= 22:09:36
The step data was checked and warning messages were found.
Please review output or errors file (glsh21b2.err) for these warning
messages.

*** NOTE *** CP= 26939.730 TIME= 22:09:36
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:09:36 NOV 02, 1995 CP= 26939.730
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 22
TIME AT END OF THE LOAD STEP.31558E+09
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT

DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 33.40 CRITERION= .6060E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.379
HT FLOW CONVERGENCE VALUE= .8314 CRITERION= .5058E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1923
HT FLOW CONVERGENCE VALUE= .5209E-01 CRITERION= .5058E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3640E-02
HT FLOW CONVERGENCE VALUE= .1114E-02 CRITERION= .5058E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 66
*** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27584.650 TIME= 22:31:56
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:31:57 NOV 02, 1995 CP= 27585.100
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 194.6 CRITERION= .1984
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 13.62
HT FLOW CONVERGENCE VALUE= 2.456 CRITERION= .4021E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6854
HT FLOW CONVERGENCE VALUE= .1400 CRITERION= .4021E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1029E-01
HT FLOW CONVERGENCE VALUE= .2240E-02 CRITERION= .4021E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 69
*** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28235.410 TIME= 22:54:23
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:54:24 NOV 02, 1995 CP= 28235.850
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 121.2 CRITERION= .1251
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 7.718
HT FLOW CONVERGENCE VALUE= 1.179 CRITERION= .3214E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3050
HT FLOW CONVERGENCE VALUE= .4994E-01 CRITERION= .3214E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3934E-02
HT FLOW CONVERGENCE VALUE= .6250E-03 CRITERION= .3214E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 72
*** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28887.420 TIME= 23:16:50
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:16:50 NOV 02, 1995 CP= 28887.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 68.53 CRITERION= .7295E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.136
HT FLOW CONVERGENCE VALUE= .5374 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1315
HT FLOW CONVERGENCE VALUE= .1775E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 74
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29353.040 TIME= 23:33:04
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:33:05 NOV 02, 1995 CP= 29353.480
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 34.67 CRITERION= .4011E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.025
HT FLOW CONVERGENCE VALUE= .2485 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5416E-01
HT FLOW CONVERGENCE VALUE= .6130E-02 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 76
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29813.500 TIME= 23:49:14
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:49:14 NOV 02, 1995 CP= 29813.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.43 CRITERION= .2182E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.025
HT FLOW CONVERGENCE VALUE= .1296 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2230E-01
HT FLOW CONVERGENCE VALUE= .1980E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 78
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30279.030 TIME= 00:05:29
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:05:29 NOV 03, 1995 CP= 30279.480
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.830 CRITERION= .1459E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.951
HT FLOW CONVERGENCE VALUE= .8234E-01 CRITERION= .1373E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1071E-01
HT FLOW CONVERGENCE VALUE= .7046E-03 CRITERION= .1373E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 80
*** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30738.830 TIME= 00:21:38
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:21:38 NOV 03, 1995 CP= 30739.270
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 8.642 CRITERION= .1399E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.236
HT FLOW CONVERGENCE VALUE= .7230E-01 CRITERION= .1128E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6627E-02
HT FLOW CONVERGENCE VALUE= .3086E-03 CRITERION= .1128E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 82
*** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31203.680 TIME= 00:37:51
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:37:51 NOV 03, 1995 CP= 31204.120
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.251 CRITERION= .1300E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.921
HT FLOW CONVERGENCE VALUE= .5373E-01 CRITERION= .9340E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6302E-02
HT FLOW CONVERGENCE VALUE= .2369E-03 CRITERION= .9340E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 84
*** TIME = .284018E+10 TIME INC = .315576E+09

Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM

32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
115.610895 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 149.767184 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31668.150 TIME= 00:54:04
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31668.590 TIME= 00:54:04
The step data was checked and warning messages were found.
Please review output or errors file (glsh21b2.err) for these warning messages.

*** NOTE *** CP= 31668.600 TIME= 00:54:04
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:54:04 NOV 03, 1995 CP= 31668.600
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
TIME AT END OF THE LOAD STEP.31558E+10
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 8.443 CRITERION= .1140E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.594
HT FLOW CONVERGENCE VALUE= .3868E-01 CRITERION= .7808E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5041E-02
HT FLOW CONVERGENCE VALUE= .1595E-03 CRITERION= .7808E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 86
*** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32134.050 TIME= 01:10:18
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:10:18 NOV 03, 1995 CP= 32134.490
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 56.84 CRITERION= .5663E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.220
HT FLOW CONVERGENCE VALUE= .1955 CRITERION= .2424E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3192E-01
HT FLOW CONVERGENCE VALUE= .3616E-03 CRITERION= .2424E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 88
*** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32594.350 TIME= 01:26:27
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:26:27 NOV 03, 1995 CP= 32594.790
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 50.50 CRITERION= .5052E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.625
HT FLOW CONVERGENCE VALUE= .1490E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4542E-02
HT FLOW CONVERGENCE VALUE= .3460E-04 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 90
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33059.800 TIME= 01:42:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:42:41 NOV 03, 1995 CP= 33060.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 27.68 CRITERION= .2770E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.947
HT FLOW CONVERGENCE VALUE= .1155E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3017E-02
HT FLOW CONVERGENCE VALUE= .1897E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 92
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33520.610 TIME= 01:58:50
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:58:50 NOV 03, 1995 CP= 33521.050
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 23.69 CRITERION= .2372E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.656
HT FLOW CONVERGENCE VALUE= .8675E-02 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2246E-02
HT FLOW CONVERGENCE VALUE= .1168E-04 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 94
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33985.740 TIME= 02:15:03
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:15:03 NOV 03, 1995 CP= 33986.180
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 27.59 CRITERION= .2760E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.884
HT FLOW CONVERGENCE VALUE= .8419E-02 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2211E-02
HT FLOW CONVERGENCE VALUE= .9544E-05 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 96
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34450.440 TIME= 02:31:16
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:31:16 NOV 03, 1995 CP= 34450.880
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.33 CRITERION= .2534E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.737
HT FLOW CONVERGENCE VALUE= .6467E-02 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1714E-02
HT FLOW CONVERGENCE VALUE= .6128E-05 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 98
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34915.560 TIME= 02:47:30
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:47:31 NOV 03, 1995 CP= 34916.000
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.31 CRITERION= .2232E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.541
HT FLOW CONVERGENCE VALUE= .4764E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1273E-02
HT FLOW CONVERGENCE VALUE= .3766E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 100
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35375.910 TIME= 03:03:39
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:03:39 NOV 03, 1995 CP= 35376.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 20.21 CRITERION= .2022E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.402
 HT FLOW CONVERGENCE VALUE= .3611E-02 CRITERION= .4900E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9715E-03
 HT FLOW CONVERGENCE VALUE= .2382E-05 CRITERION= .4900E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 102
 *** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35841.290 TIME= 03:19:53
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:19:53 NOV 03, 1995 CP= 35841.730
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 17.77 CRITERION= .1778E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.240
 HT FLOW CONVERGENCE VALUE= .2658E-02 CRITERION= .4042E-03
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7193E-03
 HT FLOW CONVERGENCE VALUE= .1462E-05 CRITERION= .4042E-03 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 104
 *** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 36298.740

Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:35:59 NOV 03, 1995 CP= 36298.740
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7655 TEMP	peakgls	130.0	31.56	166.8	.9467E+09

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= 946728032.

***** ROUTINE COMPLETED ***** CP = 36299.180

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:36:02 NOV 03, 1995 CP= 36299.230
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .94673E+09

SET COMMAND GOT LOAD STEP= 24 SUBSTEP= 1 CUMULATIVE ITERATION= 72
TIME/FREQUENCY= .94673E+09

TITLE=
DHLW WP at Time of Peak Temp. (30.000001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (30.000001 years)

*** WARNING *** CP= 36338.260 TIME= 03:36:58
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36338.300 TIME= 03:36:58
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 51
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 144.19 BY .18458 TO 167.63

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 36384.960 TIME= 03:37:51
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36385.000 TIME= 03:37:51
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 66
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 144.19 BY .18458 TO 167.63

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 36431.010 TIME= 03:38:43
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36431.040 TIME= 03:38:43
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 144.19 BY .18458 TO 167.63

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 36450.280 TIME= 03:39:05
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36450.310 TIME= 03:39:05
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 86
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 144.19 BY .18458 TO 167.63

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 36496.280 TIME= 03:39:58
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36496.310 TIME= 03:39:58
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 36504.820

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC

= cartesian quadrant number of Canister
 i = side of assembly toward center of WP
 o = side of assembly toward edge of WP
 045 = profile 45 deg down
 135 = profile 45 deg up

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:07 NOV 03, 1995 CP= 36504.830
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

 Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
 VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
 VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
 VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
 VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
 VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
 VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
 VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
 VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
 VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7952 TEMP	t94i045	125.1	.2000E-05	163.9	.1262E+10
3	NSOL	7726 TEMP	t94o045	125.2	.2000E-05	163.9	.1262E+10
4	NSOL	7730 TEMP	h94i045	133.2	.3156E+11	167.4	.9467E+09
5	NSOL	7654 TEMP	c94i045	131.6	.2000E-05	166.8	.9467E+09
6	NSOL	7686 TEMP	h94o045	115.6	31.56	162.5	.1262E+10
7	NSOL	7667 TEMP	s94i045	87.70	31.56	156.1	.1578E+10
8	NSOL	7929 TEMP	s94o045	87.53	31.56	156.1	.1578E+10
9	NSOL	8013 TEMP	i94i045	56.97	31.56	153.2	.1893E+10
10	NSOL	8030 TEMP	i94o045	56.63	31.56	153.1	.1893E+10
11	NSOL	8145 TEMP	o94o045	56.27	31.56	153.0	.1893E+10

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:12 NOV 03, 1995 CP= 36507.090
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.152	125.214	134.735	131.630	115.632	87.7062
.20000E-05	125.149	125.211	134.733	131.628	115.630	87.7035
31.558	125.149	125.211	134.733	131.628	115.630	87.7035
.31558E+07	130.467	130.527	139.922	137.086	121.748	94.8323
.63116E+07	132.382	132.441	141.625	138.939	124.116	98.0449
.94673E+07	133.405	133.463	142.428	139.855	125.480	100.164
.12623E+08	134.037	134.094	142.848	140.369	126.395	101.761
.15779E+08	134.459	134.514	143.070	140.671	127.059	103.048
.18935E+08	134.757	134.811	143.182	140.853	127.572	104.130
.22090E+08	134.981	135.034	143.231	140.966	127.988	105.073
.25246E+08	135.184	135.235	143.274	141.066	128.366	105.930
.28402E+08	135.371	135.421	143.312	141.156	128.713	106.721
.31558E+08	135.555	135.604	143.358	141.252	129.045	107.465
.63115E+08	138.088	138.132	144.981	143.222	132.634	113.844
.94673E+08	141.452	141.492	147.904	146.355	136.635	119.318
.12623E+09	144.480	144.518	150.675	149.265	140.084	123.674
.15779E+09	147.226	147.263	153.244	151.940	143.148	127.389
.18935E+09	149.677	149.713	155.555	154.335	145.858	130.622
.22090E+09	151.847	151.883	157.601	156.454	148.247	133.463
.25246E+09	153.832	153.866	159.473	158.389	150.422	136.042
.28402E+09	155.319	155.353	160.847	159.815	152.067	138.061
.31558E+09	156.522	156.555	161.937	160.950	153.406	139.751
.63115E+09	161.817	161.844	166.196	165.487	159.565	148.775
.94673E+09	163.858	163.879	167.383	166.845	162.140	153.543
.12623E+10	163.878	163.895	166.710	166.286	162.518	155.627
.15779E+10	162.800	162.814	165.079	164.734	161.697	156.145
.18935E+10	161.227	161.239	163.068	162.784	160.319	155.815
.22090E+10	159.641	159.650	161.136	160.900	158.887	155.213
.25246E+10	157.703	157.710	158.925	158.726	157.068	154.047
.28402E+10	156.017	156.023	157.025	156.857	155.480	152.975
.31558E+10	154.607	154.612	155.447	155.304	154.151	152.055
.63115E+10	147.982	147.984	148.238	148.190	147.829	147.175
.94673E+10	144.451	144.453	144.622	144.588	144.343	143.902
.12623E+11	142.544	142.544	142.680	142.651	142.455	142.101
.15779E+11	140.916	140.917	141.027	141.004	140.842	140.552
.18935E+11	139.056	139.056	139.146	139.126	138.993	138.755
.22090E+11	137.338	137.338	137.412	137.395	137.285	137.089
.25246E+11	135.812	135.813	135.873	135.859	135.768	135.607
.28402E+11	134.423	134.423	134.472	134.461	134.386	134.252
.31558E+11	133.193	133.193	133.234	133.224	133.162	133.052

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:12 NOV 03, 1995 CP= 36507.100
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP s94o045	8013 TEMP i94i045	8030 TEMP i94o045	8145 TEMP o94o045
.10000E-05	87.5335	56.9731	56.6357	56.2753
.20000E-05	87.5309	56.9718	56.6345	56.2741
31.558	87.5309	56.9716	56.6343	56.2739
.31558E+07	94.6669	67.2879	66.9620	66.6124
.63116E+07	97.8854	72.2516	71.9356	71.5963
.94673E+07	100.010	75.6720	75.3648	75.0347
.12623E+08	101.611	78.3344	78.0354	77.7137
.15779E+08	102.902	80.5284	80.2367	79.9229
.18935E+08	103.988	82.4036	82.1187	81.8121
.22090E+08	104.934	84.0515	83.7729	83.4729
.25246E+08	105.794	85.5397	85.2669	84.9730
.28402E+08	106.588	86.9034	86.6359	86.3476

.31558E+08	107.334	88.1714	87.9089	87.6259
.63115E+08	113.732	98.0801	97.8520	97.6046
.94673E+08	119.215	105.485	105.276	105.049
.12623E+09	123.577	111.044	110.846	110.633
.15779E+09	127.296	115.627	115.438	115.235
.18935E+09	130.533	119.546	119.364	119.168
.22090E+09	133.376	122.956	122.780	122.591
.25246E+09	135.958	126.028	125.857	125.674
.28402E+09	137.979	128.463	128.297	128.118
.31558E+09	139.671	130.517	130.356	130.183
.63115E+09	148.712	141.987	141.861	141.726
.94673E+09	153.493	148.339	148.239	148.133
.12623E+10	155.587	151.532	151.452	151.367
.15779E+10	156.113	152.866	152.802	152.734
.18935E+10	155.789	153.156	153.104	153.049
.22090E+10	155.192	153.038	152.996	152.951
.25246E+10	154.030	152.247	152.212	152.175
.28402E+10	152.961	151.474	151.445	151.414
.31558E+10	152.043	150.792	150.768	150.742
.63115E+10	147.171	146.769	146.761	146.753
.94673E+10	143.900	143.622	143.617	143.612
.12623E+11	142.099	141.874	141.870	141.865
.15779E+11	140.550	140.363	140.360	140.356
.18935E+11	138.753	138.597	138.595	138.592
.22090E+11	137.088	136.958	136.956	136.953
.25246E+11	135.606	135.498	135.496	135.494
.28402E+11	134.252	134.162	134.160	134.158
.31558E+11	133.051	132.976	132.975	132.974

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 36507.320 TIME= 03:40:12
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	7947 TEMP	t04i045	124.1	.2000E-05	163.8 .1262E+10
3	NSOL	7718 TEMP	t04o045	124.2	.2000E-05	163.8 .1262E+10
4	NSOL	7720 TEMP	h04i045	133.2	.3156E+11	167.3 .9467E+09
5	NSOL	7642 TEMP	c04i045	130.4	.2000E-05	166.7 .9467E+09
6	NSOL	7679 TEMP	h04o045	114.5	31.56	162.4 .1262E+10
7	NSOL	7662 TEMP	s04i045	86.26	31.56	156.0 .1578E+10
8	NSOL	7927 TEMP	s04o045	86.09	31.56	156.0 .1578E+10
9	NSOL	8008 TEMP	i04i045	55.93	31.56	153.1 .1893E+10
10	NSOL	8027 TEMP	i04o045	55.59	31.56	153.1 .1893E+10

11 NSOL 8142 TEMP o04o045 55.24 31.56 153.0 .1893E+10
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:40:14 NOV 03, 1995 CP= 36509.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.093	124.159	133.778	130.368	114.457	86.2654
.20000E-05	124.090	124.157	133.776	130.365	114.454	86.2629
31.558	124.090	124.157	133.776	130.365	114.454	86.2629
.31558E+07	129.536	129.601	139.112	135.992	120.737	93.5617
.63116E+07	131.517	131.580	140.886	137.931	123.188	96.8642
.94673E+07	132.585	132.647	141.738	138.907	124.610	99.0482
.12623E+08	133.254	133.314	142.196	139.468	125.570	100.698
.15779E+08	133.705	133.764	142.449	139.810	126.273	102.028
.18935E+08	134.030	134.087	142.587	140.026	126.818	103.149
.22090E+08	134.277	134.333	142.659	140.168	127.264	104.125
.25246E+08	134.501	134.556	142.722	140.295	127.666	105.013
.28402E+08	134.706	134.760	142.778	140.410	128.036	105.831
.31558E+08	134.907	134.961	142.842	140.527	128.390	106.599
.63115E+08	137.560	137.607	144.581	142.648	132.121	113.147
.94673E+08	140.994	141.038	147.573	145.867	136.203	118.714
.12623E+09	144.066	144.108	150.388	148.832	139.703	123.127
.15779E+09	146.845	146.885	152.989	151.546	142.804	126.884
.18935E+09	149.322	149.361	155.325	153.973	145.542	130.150
.22090E+09	151.513	151.552	157.392	156.117	147.954	133.017
.25246E+09	153.516	153.553	159.281	158.074	150.150	135.619
.28402E+09	155.018	155.055	160.669	159.517	151.811	137.657
.31558E+09	156.234	156.270	161.771	160.668	153.164	139.364
.63115E+09	161.609	161.638	166.090	165.294	159.402	148.495
.94673E+09	163.699	163.722	167.309	166.702	162.021	153.330
.12623E+10	163.752	163.770	166.654	166.175	162.427	155.460
.15779E+10	162.698	162.714	165.033	164.645	161.624	156.011
.18935E+10	161.144	161.156	163.031	162.711	160.259	155.707
.22090E+10	159.572	159.582	161.105	160.840	158.838	155.124
.25246E+10	157.645	157.653	158.898	158.676	157.027	153.973
.28402E+10	155.968	155.975	157.002	156.814	155.445	152.914
.31558E+10	154.566	154.571	155.427	155.268	154.121	152.003
.63115E+10	147.968	147.970	148.231	148.178	147.818	147.158
.94673E+10	144.442	144.443	144.617	144.579	144.336	143.891
.12623E+11	142.536	142.536	142.675	142.644	142.449	142.092
.15779E+11	140.910	140.910	141.023	140.998	140.837	140.544
.18935E+11	139.050	139.051	139.143	139.121	138.989	138.748
.22090E+11	137.333	137.333	137.409	137.391	137.282	137.083
.25246E+11	135.808	135.809	135.871	135.855	135.765	135.602
.28402E+11	134.419	134.420	134.470	134.458	134.383	134.249
.31558E+11	133.190	133.190	133.232	133.221	133.160	133.049

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:40:14 NOV 03, 1995 CP= 36509.250
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
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.10000E-05	86.0963	55.9344	55.5899	55.2365
.20000E-05	86.0938	55.9333	55.5887	55.2354
31.558	86.0938	55.9331	55.5885	55.2352
.31558E+07	93.3997	66.4292	66.0966	65.7535
.63116E+07	96.7078	71.4799	71.1576	70.8242
.94673E+07	98.8967	74.9601	74.6470	74.3225
.12623E+08	100.551	77.6690	77.3642	77.0479
.15779E+08	101.885	79.9009	79.6037	79.2951
.18935E+08	103.009	81.8081	81.5179	81.2163
.22090E+08	103.989	83.4837	83.2000	82.9048
.25246E+08	104.879	84.9962	84.7183	84.4291
.28402E+08	105.700	86.3815	86.1090	85.8254
.31558E+08	106.471	87.6690	87.4016	87.1230
.63115E+08	113.037	97.7022	97.4701	97.2263
.94673E+08	118.613	105.171	104.958	104.735
.12623E+09	123.032	110.767	110.566	110.356
.15779E+09	126.792	115.377	115.185	114.983
.18935E+09	130.062	119.315	119.130	118.936
.22090E+09	132.932	122.742	122.563	122.376
.25246E+09	135.536	125.827	125.654	125.472
.28402E+09	137.577	128.273	128.104	127.928
.31558E+09	139.286	130.337	130.173	130.002
.63115E+09	148.434	141.863	141.736	141.602
.94673E+09	153.281	148.248	148.147	148.041
.12623E+10	155.421	151.462	151.381	151.297
.15779E+10	155.980	152.811	152.746	152.678
.18935E+10	155.681	153.111	153.059	153.004
.22090E+10	155.103	153.002	152.959	152.914
.25246E+10	153.956	152.217	152.182	152.145
.28402E+10	152.899	151.448	151.419	151.389
.31558E+10	151.991	150.771	150.746	150.720
.63115E+10	147.154	146.762	146.754	146.746
.94673E+10	143.888	143.617	143.612	143.607
.12623E+11	142.090	141.870	141.865	141.861
.15779E+11	140.542	140.360	140.357	140.353
.18935E+11	138.747	138.595	138.592	138.589
.22090E+11	137.082	136.956	136.953	136.951
.25246E+11	135.601	135.496	135.494	135.492
.28402E+11	134.248	134.160	134.159	134.157
.31558E+11	133.048	132.975	132.974	132.972

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36509.460 TIME= 03:40:15
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	63 TEMP	t01i135	124.1	.2000E-05	163.8	.1262E+10
3 NSOL	20 TEMP	t01o135	124.1	.2000E-05	163.8	.1262E+10
4 NSOL	22 TEMP	h01i135	133.2	.3156E+11	167.3	.9467E+09
5 NSOL	1 TEMP	c01i135	130.3	.2000E-05	166.7	.9467E+09
6 NSOL	11 TEMP	h01o135	114.4	31.56	162.4	.1262E+10
7 NSOL	6 TEMP	s01i135	86.20	31.56	156.0	.1578E+10
8 NSOL	58 TEMP	s01o135	86.03	31.56	156.0	.1578E+10
9 NSOL	84 TEMP	i01i135	55.83	31.56	153.1	.1893E+10
10 NSOL	106 TEMP	i01o135	55.49	31.56	153.0	.1893E+10
11 NSOL	124 TEMP	o01o135	55.14	31.56	153.0	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:17 NOV 03, 1995 CP= 36511.390
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.085	124.151	133.755	130.331	114.407	86.2026
.20000E-05	124.082	124.149	133.752	130.328	114.404	86.2002
31.558	124.082	124.149	133.753	130.328	114.404	86.2002
.31558E+07	129.529	129.594	139.090	135.957	120.690	93.5022
.63116E+07	131.510	131.573	140.865	137.897	123.142	96.8070
.94673E+07	132.579	132.640	141.717	138.874	124.566	98.9930
.12623E+08	133.247	133.307	142.176	139.437	125.528	100.644
.15779E+08	133.699	133.758	142.430	139.779	126.231	101.976
.18935E+08	134.024	134.081	142.568	139.996	126.778	103.098
.22090E+08	134.271	134.327	142.641	140.139	127.224	104.076
.25246E+08	134.495	134.550	142.704	140.267	127.628	104.964
.28402E+08	134.700	134.754	142.761	140.382	127.998	105.783
.31558E+08	134.902	134.955	142.825	140.500	128.353	106.553
.63115E+08	137.556	137.603	144.567	142.625	132.090	113.108
.94673E+08	140.990	141.033	147.560	145.846	136.174	118.678
.12623E+09	144.062	144.104	150.375	148.812	139.676	123.094
.15779E+09	146.841	146.882	152.978	151.527	142.778	126.852
.18935E+09	149.318	149.357	155.314	153.955	145.518	130.120
.22090E+09	151.510	151.549	157.381	156.100	147.931	132.988
.25246E+09	153.513	153.550	159.271	158.058	150.127	135.591
.28402E+09	155.016	155.052	160.659	159.502	151.790	137.631
.31558E+09	156.231	156.267	161.761	160.652	153.143	139.338
.63115E+09	161.607	161.636	166.083	165.282	159.386	148.475
.94673E+09	163.697	163.720	167.303	166.693	162.009	153.315
.12623E+10	163.750	163.769	166.650	166.168	162.417	155.448
.15779E+10	162.697	162.713	165.030	164.639	161.616	156.001
.18935E+10	161.143	161.155	163.028	162.707	160.253	155.699
.22090E+10	159.571	159.581	161.102	160.837	158.833	155.118
.25246E+10	157.644	157.652	158.896	158.673	157.023	153.968
.28402E+10	155.967	155.974	157.000	156.811	155.442	152.909
.31558E+10	154.565	154.571	155.426	155.265	154.118	151.999
.63115E+10	147.968	147.970	148.231	148.177	147.817	147.157
.94673E+10	144.442	144.443	144.617	144.579	144.335	143.890
.12623E+11	142.536	142.536	142.675	142.644	142.448	142.091
.15779E+11	140.910	140.910	141.023	140.997	140.837	140.543
.18935E+11	139.050	139.050	139.143	139.121	138.989	138.747
.22090E+11	137.333	137.333	137.409	137.390	137.281	137.083
.25246E+11	135.808	135.809	135.870	135.855	135.765	135.602
.28402E+11	134.419	134.420	134.470	134.458	134.383	134.248
.31558E+11	133.190	133.190	133.232	133.221	133.160	133.049

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:17 NOV 03, 1995 CP= 36511.400
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	86.0334	55.8361	55.4914	55.1378
.20000E-05	86.0310	55.8350	55.4903	55.1367
31.558	86.0310	55.8348	55.4901	55.1366
.31558E+07	93.3401	66.3400	66.0072	65.6639
.63116E+07	96.6505	71.3960	71.0736	70.7400
.94673E+07	98.8414	74.8803	74.5670	74.2424
.12623E+08	100.497	77.5925	77.2876	76.9712
.15779E+08	101.833	79.8274	79.5300	79.2212
.18935E+08	102.958	81.7371	81.4468	81.1450
.22090E+08	103.939	83.4150	83.1312	82.8359
.25246E+08	104.831	84.9295	84.6516	84.3622
.28402E+08	105.653	86.3166	86.0441	85.7603
.31558E+08	106.425	87.6058	87.3384	87.0597
.63115E+08	112.997	97.6504	97.4182	97.1742
.94673E+08	118.577	105.125	104.913	104.689
.12623E+09	122.998	110.725	110.524	110.313
.15779E+09	126.761	115.337	115.145	114.944
.18935E+09	130.032	119.278	119.093	118.899
.22090E+09	132.903	122.707	122.528	122.340
.25246E+09	135.509	125.794	125.620	125.438
.28402E+09	137.550	128.240	128.072	127.895
.31558E+09	139.260	130.306	130.142	129.970
.63115E+09	148.414	141.840	141.712	141.579
.94673E+09	153.266	148.230	148.129	148.023
.12623E+10	155.409	151.448	151.367	151.283
.15779E+10	155.970	152.800	152.735	152.667
.18935E+10	155.673	153.102	153.050	152.995
.22090E+10	155.097	152.995	152.952	152.907
.25246E+10	153.951	152.211	152.175	152.138
.28402E+10	152.895	151.443	151.414	151.383
.31558E+10	151.987	150.766	150.742	150.716
.63115E+10	147.153	146.760	146.753	146.745
.94673E+10	143.887	143.616	143.611	143.606
.12623E+11	142.089	141.869	141.865	141.860
.15779E+11	140.542	140.359	140.356	140.352
.18935E+11	138.746	138.594	138.591	138.588
.22090E+11	137.082	136.955	136.953	136.950
.25246E+11	135.601	135.495	135.493	135.491
.28402E+11	134.248	134.160	134.158	134.157
.31558E+11	133.048	132.975	132.974	132.972

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 36511.610 TIME= 03:40:17
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045
 VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	98.18	31.56	158.4	.1262E+10
3 NSOL	7722 TEMP	tb4o045	98.10	31.56	158.4	.1262E+10
4 NSOL	7724 TEMP	hb4i045	91.88	31.56	157.2	.1578E+10
5 NSOL	7650 TEMP	cb4i045	87.11	31.56	156.4	.1578E+10
6 NSOL	7682 TEMP	hb4o045	81.52	31.56	155.5	.1578E+10
7 NSOL	7666 TEMP	sb4i045	75.07	31.56	154.5	.1578E+10
8 NSOL	7928 TEMP	sb4o045	75.00	31.56	154.4	.1578E+10
9 NSOL	8012 TEMP	ib4i045	52.81	31.56	152.7	.1893E+10
10 NSOL	8029 TEMP	ib4o045	52.53	31.56	152.7	.1893E+10
11 NSOL	8144 TEMP	ob4o045	52.25	31.56	152.6	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:19 NOV 03, 1995 CP= 36513.540
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	98.1825	98.1038	91.8853	87.1159	81.5244	75.0696
.20000E-05	98.1794	98.1007	91.8825	87.1133	81.5220	75.0674
31.558	98.1793	98.1007	91.8824	87.1132	81.5220	75.0673
.31558E+07	105.098	105.022	99.0333	94.5195	89.2451	83.1410
.63116E+07	108.048	107.973	102.180	97.8469	92.7909	86.9312
.94673E+07	109.913	109.840	104.220	100.036	95.1595	89.5033
.12623E+08	111.270	111.199	105.735	101.682	96.9617	91.4841
.15779E+08	112.333	112.264	106.943	103.005	98.4234	93.1053
.18935E+08	113.208	113.141	107.949	104.117	99.6599	94.4858
.22090E+08	113.958	113.892	108.820	105.084	100.740	95.6972
.25246E+08	114.638	114.573	109.612	105.962	101.721	96.7975
.28402E+08	115.264	115.201	110.341	106.771	102.625	97.8107
.31558E+08	115.856	115.794	111.027	107.531	103.473	98.7596
.63115E+08	121.208	121.154	117.020	114.031	110.571	106.547
.94673E+08	126.150	126.100	122.299	119.588	116.457	112.807
.12623E+09	130.180	130.132	126.537	124.000	121.076	117.661
.15779E+09	133.662	133.616	130.168	127.758	124.985	121.739
.18935E+09	136.705	136.660	133.331	131.023	128.372	125.262
.22090E+09	139.380	139.336	136.109	133.888	131.340	128.347
.25246E+09	141.809	141.766	138.630	136.487	134.029	131.139
.28402E+09	143.686	143.644	140.593	138.517	136.140	133.342
.31558E+09	145.240	145.200	142.227	140.214	137.910	135.195
.63115E+09	153.128	153.095	150.759	149.211	147.447	145.357
.94673E+09	157.014	156.988	155.133	153.918	152.535	150.893
.12623E+10	158.409	158.388	156.904	155.937	154.836	153.529
.15779E+10	158.384	158.367	157.173	156.396	155.511	154.460
.18935E+10	157.629	157.615	156.648	156.017	155.299	154.447
.22090E+10	156.691	156.680	155.892	155.376	154.789	154.094

.25246E+10	155.261	155.252	154.604	154.178	153.694	153.121
.28402E+10	153.980	153.973	153.436	153.082	152.680	152.203
.31558E+10	152.895	152.889	152.440	152.143	151.805	151.406
.63115E+10	147.435	147.434	147.294	147.200	147.093	146.967
.94673E+10	144.078	144.076	143.982	143.918	143.845	143.759
.12623E+11	142.242	142.240	142.165	142.113	142.054	141.985
.15779E+11	140.667	140.666	140.604	140.562	140.513	140.456
.18935E+11	138.849	138.848	138.797	138.762	138.722	138.675
.22090E+11	137.166	137.166	137.124	137.095	137.061	137.023
.25246E+11	135.670	135.670	135.635	135.611	135.584	135.552
.28402E+11	134.305	134.305	134.276	134.256	134.233	134.207
.31558E+11	133.095	133.095	133.071	133.055	133.036	133.014

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:19 NOV 03, 1995 CP= 36513.550
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP sb4o045	8012 TEMP ib4i045	8029 TEMP ib4o045	8144 TEMP ob4o045
.10000E-05	74.9991	52.8129	52.5361	52.2507
.20000E-05	74.9969	52.8119	52.5351	52.2497
31.558	74.9968	52.8117	52.5349	52.2496
.31558E+07	83.0745	63.4194	63.1515	62.8764
.63116E+07	86.8675	68.5737	68.3138	68.0474
.94673E+07	89.4418	72.1461	71.8934	71.6347
.12623E+08	91.4246	74.9385	74.6924	74.4407
.15779E+08	93.0477	77.2465	77.0064	76.7611
.18935E+08	94.4297	79.2233	78.9888	78.7493
.22090E+08	95.6427	80.9630	80.7336	80.4996
.25246E+08	96.7442	82.5340	82.3092	82.0802
.28402E+08	97.7587	83.9733	83.7529	83.5284
.31558E+08	98.7087	85.3110	85.0946	84.8744
.63115E+08	106.503	95.6906	95.5021	95.3105
.94673E+08	112.768	103.355	103.183	103.007
.12623E+09	117.624	109.079	108.916	108.751
.15779E+09	121.705	113.782	113.626	113.469
.18935E+09	125.229	117.795	117.645	117.494
.22090E+09	128.315	121.285	121.140	120.994
.25246E+09	131.109	124.427	124.286	124.145
.28402E+09	133.312	126.921	126.784	126.647
.31558E+09	135.166	129.029	128.896	128.763
.63115E+09	145.335	140.875	140.771	140.668
.94673E+09	150.876	147.480	147.398	147.316
.12623E+10	153.515	150.854	150.788	150.723
.15779E+10	154.449	152.324	152.271	152.219
.18935E+10	154.438	152.717	152.674	152.632
.22090E+10	154.086	152.680	152.645	152.611
.25246E+10	153.115	151.951	151.923	151.894
.28402E+10	152.198	151.228	151.204	151.180
.31558E+10	151.402	150.585	150.565	150.546
.63115E+10	146.966	146.703	146.697	146.691
.94673E+10	143.759	143.577	143.573	143.569
.12623E+11	141.985	141.837	141.834	141.831
.15779E+11	140.456	140.333	140.331	140.328
.18935E+11	138.674	138.573	138.570	138.568
.22090E+11	137.022	136.937	136.935	136.933
.25246E+11	135.551	135.480	135.479	135.477
.28402E+11	134.206	134.148	134.146	134.145
.31558E+11	133.014	132.965	132.964	132.963

* Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36513.760 TIME= 03:40:19
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1033 TEMP	t01i135	98.17	31.56	158.4	.1262E+10
3	NSOL	733 TEMP	t01o135	98.09	31.56	158.4	.1262E+10
4	NSOL	735 TEMP	h01i135	91.86	31.56	157.2	.1578E+10
5	NSOL	679 TEMP	c01i135	87.07	31.56	156.4	.1578E+10
6	NSOL	704 TEMP	h01o135	81.47	31.56	155.5	.1578E+10
7	NSOL	691 TEMP	s01i135	75.01	31.56	154.5	.1578E+10
8	NSOL	1018 TEMP	s01o135	74.94	31.56	154.4	.1578E+10
9	NSOL	1292 TEMP	i01i135	52.72	31.56	152.7	.1893E+10
10	NSOL	1307 TEMP	i01o135	52.44	31.56	152.7	.1893E+10
11	NSOL	2078 TEMP	o01o135	52.15	31.56	152.6	.1893E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:21 NOV 03, 1995 CP= 36515.690
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	98.1689	98.0901	91.8586	87.0767	81.4740	75.0087
.20000E-05	98.1658	98.0870	91.8558	87.0741	81.4716	75.0065
31.558	98.1657	98.0869	91.8557	87.0741	81.4715	75.0064
.31558E+07	105.086	105.009	99.0083	94.4827	89.1976	83.0836
.63116E+07	108.036	107.961	102.156	97.8117	92.7455	86.8763
.94673E+07	109.901	109.829	104.197	100.002	95.1158	89.4503
.12623E+08	111.259	111.188	105.713	101.649	96.9193	91.4328
.15779E+08	112.323	112.254	106.921	102.973	98.3823	93.0556
.18935E+08	113.198	113.131	107.929	104.086	99.6200	94.4374
.22090E+08	113.948	113.882	108.800	105.053	100.701	95.6502
.25246E+08	114.628	114.564	109.592	105.932	101.683	96.7516
.28402E+08	115.255	115.192	110.321	106.742	102.588	97.7659
.31558E+08	115.847	115.784	111.008	107.503	103.437	98.7158
.63115E+08	121.200	121.146	117.004	114.007	110.541	106.510
.94673E+08	126.143	126.093	122.285	119.566	116.429	112.773

.12623E+09	130.174	130.126	126.524	123.980	121.051	117.630
.15779E+09	133.656	133.610	130.155	127.739	124.961	121.710
.18935E+09	136.700	136.655	133.319	131.005	128.349	125.235
.22090E+09	139.375	139.331	136.098	133.871	131.318	128.320
.25246E+09	141.804	141.761	138.619	136.470	134.008	131.114
.28402E+09	143.681	143.639	140.582	138.502	136.120	133.317
.31558E+09	145.236	145.195	142.217	140.199	137.891	135.171
.63115E+09	153.125	153.092	150.751	149.200	147.432	145.339
.94673E+09	157.012	156.986	155.127	153.909	152.523	150.879
.12623E+10	158.407	158.386	156.899	155.929	154.827	153.518
.15779E+10	158.382	158.365	157.169	156.390	155.504	154.451
.18935E+10	157.628	157.614	156.645	156.012	155.293	154.440
.22090E+10	156.690	156.679	155.889	155.372	154.785	154.088
.25246E+10	155.260	155.251	154.602	154.175	153.690	153.116
.28402E+10	153.980	153.972	153.434	153.080	152.676	152.199
.31558E+10	152.895	152.888	152.438	152.141	151.802	151.402
.63115E+10	147.435	147.433	147.293	147.199	147.092	146.966
.94673E+10	144.078	144.076	143.982	143.918	143.845	143.759
.12623E+11	142.241	142.240	142.164	142.113	142.054	141.985
.15779E+11	140.667	140.666	140.604	140.561	140.513	140.456
.18935E+11	138.849	138.848	138.797	138.762	138.722	138.675
.22090E+11	137.166	137.166	137.124	137.094	137.061	137.022
.25246E+11	135.670	135.670	135.635	135.611	135.583	135.551
.28402E+11	134.305	134.305	134.276	134.256	134.233	134.207
.31558E+11	133.095	133.095	133.071	133.055	133.036	133.014

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:21 NOV 03, 1995 CP= 36515.700
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	74.9381	52.7191	52.4419	52.1558
.20000E-05	74.9359	52.7181	52.4410	52.1548
31.558	74.9358	52.7179	52.4408	52.1546
.31558E+07	83.0170	63.3341	63.0660	62.7901
.63116E+07	86.8125	68.4934	68.2332	67.9661
.94673E+07	89.3887	72.0697	71.8167	71.5574
.12623E+08	91.3733	74.8653	74.6190	74.3667
.15779E+08	92.9979	77.1761	76.9357	76.6899
.18935E+08	94.3813	79.1554	78.9206	78.6806
.22090E+08	95.5955	80.8972	80.6676	80.4330
.25246E+08	96.6982	82.4702	82.2452	82.0156
.28402E+08	97.7138	83.9113	83.6907	83.4656
.31558E+08	98.6648	85.2506	85.0340	84.8132
.63115E+08	106.466	95.6410	95.4523	95.2602
.94673E+08	112.734	103.312	103.139	102.963
.12623E+09	117.593	109.039	108.876	108.710
.15779E+09	121.675	113.744	113.588	113.431
.18935E+09	125.201	117.760	117.609	117.458
.22090E+09	128.289	121.252	121.106	120.960
.25246E+09	131.083	124.394	124.253	124.112
.28402E+09	133.287	126.890	126.753	126.616
.31558E+09	135.142	128.999	128.866	128.733
.63115E+09	145.317	140.853	140.749	140.645
.94673E+09	150.862	147.463	147.381	147.299
.12623E+10	153.504	150.840	150.775	150.710
.15779E+10	154.440	152.313	152.260	152.208
.18935E+10	154.431	152.708	152.665	152.623
.22090E+10	154.080	152.673	152.638	152.604
.25246E+10	153.110	151.945	151.917	151.888
.28402E+10	152.194	151.223	151.199	151.175
.31558E+10	151.398	150.581	150.561	150.542

.63115E+10	146.965	146.702	146.696	146.690
.94673E+10	143.758	143.576	143.572	143.568
.12623E+11	141.984	141.837	141.833	141.830
.15779E+11	140.455	140.333	140.330	140.327
.18935E+11	138.674	138.572	138.570	138.568
.22090E+11	137.022	136.937	136.935	136.933
.25246E+11	135.551	135.480	135.479	135.477
.28402E+11	134.206	134.147	134.146	134.145
.31558E+11	133.014	132.964	132.963	132.962

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 36515.910 TIME= 03:40:21
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	8470 TEMP	tt4i045	99.84	31.56	159.0	.1262E+10
3	NSOL	8270 TEMP	tt4o045	99.88	31.56	159.0	.1262E+10
4	NSOL	8272 TEMP	ht4i045	116.5	31.56	163.5	.1262E+10
5	NSOL	8234 TEMP	ct4i045	115.9	31.56	163.7	.1262E+10
6	NSOL	8251 TEMP	ht4o045	99.64	31.56	160.1	.1262E+10
7	NSOL	8242 TEMP	st4i045	67.24	31.56	153.9	.1893E+10
8	NSOL	8460 TEMP	st4o045	67.13	31.56	153.9	.1893E+10
9	NSOL	8556 TEMP	it4i045	47.40	31.56	152.4	.2209E+10
10	NSOL	8566 TEMP	it4o045	47.19	31.56	152.4	.2209E+10
11	NSOL	8691 TEMP	ot4o045	46.96	31.56	152.4	.2209E+10

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 ***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:23 NOV 03, 1995 CP= 36517.840
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	99.8413	99.8875	116.519	115.942	99.6392	67.2398
.20000E-05	99.8388	99.8850	116.516	115.939	99.6373	67.2383

31.558	99.8388	99.8849	116.516	115.939	99.6372	67.2382
.31558E+07	106.892	106.937	123.078	122.687	107.170	76.2332
.63116E+07	109.865	109.908	125.597	125.295	110.354	80.5196
.94673E+07	111.725	111.767	127.036	126.790	112.338	83.4521
.12623E+08	113.068	113.109	127.992	127.788	113.768	85.7241
.15779E+08	114.112	114.153	128.681	128.509	114.876	87.5910
.18935E+08	114.967	115.006	129.206	129.062	115.780	89.1849
.22090E+08	115.695	115.734	129.629	129.507	116.548	90.5850
.25246E+08	116.354	116.392	130.010	129.908	117.241	91.8532
.28402E+08	116.960	116.998	130.358	130.273	117.875	93.0183
.31558E+08	117.532	117.569	130.690	130.621	118.472	94.1056
.63115E+08	122.735	122.767	134.275	134.321	123.861	102.814
.94673E+08	127.592	127.622	138.296	138.418	128.861	109.573
.12623E+09	131.566	131.595	141.761	141.936	132.938	114.734
.15779E+09	135.004	135.031	144.837	145.053	136.458	119.032
.18935E+09	138.009	138.036	147.552	147.802	139.530	122.727
.22090E+09	140.650	140.676	149.941	150.218	142.222	125.955
.25246E+09	143.047	143.072	152.112	152.411	144.662	128.869
.28402E+09	144.893	144.918	153.745	154.059	146.532	131.174
.31558E+09	146.419	146.443	155.066	155.391	148.069	133.115
.63115E+09	154.064	154.083	160.970	161.304	155.590	143.856
.94673E+09	157.762	157.778	163.295	163.593	159.069	149.755
.12623E+10	159.010	159.023	163.456	163.706	160.091	152.639
.15779E+10	158.871	158.881	162.455	162.658	159.749	153.750
.18935E+10	158.026	158.034	160.932	161.095	158.735	153.872
.22090E+10	157.016	157.023	159.385	159.517	157.591	153.623
.25246E+10	155.529	155.535	157.475	157.581	155.995	152.731
.28402E+10	154.204	154.208	155.815	155.901	154.585	151.878
.31558E+10	153.083	153.086	154.429	154.499	153.397	151.132
.63115E+10	147.495	147.496	147.912	147.932	147.586	146.879
.94673E+10	144.118	144.119	144.398	144.411	144.177	143.698
.12623E+11	142.274	142.274	142.498	142.508	142.320	141.936
.15779E+11	140.694	140.694	140.877	140.885	140.730	140.415
.18935E+11	138.871	138.871	139.022	139.027	138.900	138.640
.22090E+11	137.184	137.185	137.308	137.313	137.208	136.994
.25246E+11	135.685	135.686	135.787	135.791	135.704	135.528
.28402E+11	134.317	134.318	134.401	134.404	134.332	134.187
.31558E+11	133.105	133.106	133.175	133.177	133.118	132.997

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:23 NOV 03, 1995 CP= 36517.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1293	47.4017	47.1900	46.9627
.20000E-05	67.1278	47.4010	47.1893	46.9620
31.558	67.1277	47.4009	47.1892	46.9619
.31558E+07	76.1284	58.7876	58.5835	58.3638
.63116E+07	80.4188	64.3385	64.1409	63.9277
.94673E+07	83.3546	68.1926	68.0007	67.7935
.12623E+08	85.6295	71.2083	71.0217	70.8199
.15779E+08	87.4991	73.7017	73.5198	73.3230
.18935E+08	89.0953	75.8370	75.6594	75.4672
.22090E+08	90.4977	77.7151	77.5415	77.3535
.25246E+08	91.7679	79.4080	79.2380	79.0539
.28402E+08	92.9349	80.9565	80.7899	80.6094
.31558E+08	94.0239	82.3929	82.2294	82.0522
.63115E+08	102.744	93.4104	93.2681	93.1136
.94673E+08	109.509	101.406	101.276	101.133
.12623E+09	114.674	107.326	107.203	107.069
.15779E+09	118.975	112.167	112.049	111.922
.18935E+09	122.673	116.287	116.174	116.052

.22090E+09	125.902	119.865	119.756	119.637
.25246E+09	128.818	123.082	122.976	122.861
.28402E+09	131.124	125.638	125.536	125.424
.31558E+09	133.067	127.801	127.701	127.593
.63115E+09	143.819	139.996	139.918	139.834
.94673E+09	149.725	146.817	146.756	146.689
.12623E+10	152.615	150.337	150.288	150.235
.15779E+10	153.731	151.913	151.874	151.831
.18935E+10	153.856	152.385	152.353	152.319
.22090E+10	153.611	152.410	152.384	152.356
.25246E+10	152.721	151.728	151.707	151.684
.28402E+10	151.869	151.042	151.024	151.005
.31558E+10	151.125	150.429	150.414	150.398
.63115E+10	146.876	146.653	146.649	146.644
.94673E+10	143.697	143.543	143.540	143.536
.12623E+11	141.934	141.809	141.807	141.804
.15779E+11	140.414	140.310	140.308	140.306
.18935E+11	138.640	138.553	138.551	138.550
.22090E+11	136.993	136.921	136.920	136.918
.25246E+11	135.527	135.467	135.466	135.465
.28402E+11	134.186	134.136	134.135	134.134
.31558E+11	132.997	132.955	132.954	132.954

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36518.060 TIME= 03:40:23
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	1206 TEMP	t01i135	99.83	31.56	159.0	.1262E+10
3 NSOL	885 TEMP	t01o135	99.88	31.56	159.0	.1262E+10
4 NSOL	887 TEMP	h01i135	116.5	31.56	163.5	.1262E+10
5 NSOL	849 TEMP	c01i135	115.9	31.56	163.7	.1262E+10
6 NSOL	866 TEMP	h01o135	99.59	31.56	160.1	.1262E+10
7 NSOL	857 TEMP	s01i135	67.18	31.56	153.9	.1893E+10
8 NSOL	1196 TEMP	s01o135	67.07	31.56	153.9	.1893E+10
9 NSOL	1394 TEMP	i01i135	47.32	31.56	152.4	.2209E+10
10 NSOL	1404 TEMP	i01o135	47.11	31.56	152.4	.2209E+10
11 NSOL	2146 TEMP	o01o135	46.88	31.56	152.4	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:25 NOV 03, 1995 CP= 36519.990

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.8353	99.8814	116.498	115.908	99.5936	67.1837
.20000E-05	99.8328	99.8789	116.495	115.906	99.5917	67.1822
31.558	99.8327	99.8788	116.495	115.905	99.5917	67.1821
.31558E+07	106.886	106.931	123.058	122.655	107.127	76.1809
.63116E+07	109.859	109.903	125.579	125.264	110.313	80.4698
.94673E+07	111.720	111.762	127.018	126.761	112.299	83.4042
.12623E+08	113.063	113.105	127.975	127.760	113.730	85.6780
.15779E+08	114.108	114.148	128.664	128.482	114.840	87.5464
.18935E+08	114.962	115.002	129.190	129.035	115.745	89.1416
.22090E+08	115.691	115.729	129.613	129.482	116.513	90.5429
.25246E+08	116.350	116.388	129.994	129.883	117.207	91.8122
.28402E+08	116.956	116.994	130.342	130.249	117.842	92.9783
.31558E+08	117.528	117.565	130.675	130.597	118.440	94.0666
.63115E+08	122.732	122.764	134.263	134.301	123.834	102.782
.94673E+08	127.590	127.620	138.285	138.400	128.837	109.544
.12623E+09	131.564	131.592	141.750	141.919	132.916	114.707
.15779E+09	135.001	135.029	144.827	145.038	136.437	119.006
.18935E+09	138.007	138.034	147.543	147.787	139.510	122.703
.22090E+09	140.648	140.674	149.932	150.203	142.203	125.932
.25246E+09	143.045	143.070	152.104	152.398	144.643	128.847
.28402E+09	144.892	144.916	153.736	154.045	146.514	131.152
.31558E+09	146.417	146.441	155.058	155.378	148.052	133.095
.63115E+09	154.062	154.082	160.964	161.295	155.577	143.841
.94673E+09	157.761	157.777	163.291	163.586	159.059	149.743
.12623E+10	159.009	159.022	163.452	163.700	160.083	152.629
.15779E+10	158.870	158.880	162.452	162.653	159.742	153.742
.18935E+10	158.025	158.033	160.929	161.091	158.730	153.865
.22090E+10	157.016	157.022	159.383	159.514	157.587	153.618
.25246E+10	155.529	155.534	157.473	157.578	155.992	152.727
.28402E+10	154.203	154.208	155.813	155.898	154.582	151.875
.31558E+10	153.082	153.086	154.428	154.498	153.395	151.129
.63115E+10	147.495	147.496	147.912	147.931	147.586	146.878
.94673E+10	144.118	144.119	144.398	144.410	144.176	143.698
.12623E+11	142.274	142.274	142.498	142.507	142.319	141.935
.15779E+11	140.693	140.694	140.877	140.884	140.730	140.414
.18935E+11	138.871	138.871	139.022	139.027	138.900	138.640
.22090E+11	137.184	137.185	137.308	137.313	137.208	136.994
.25246E+11	135.685	135.686	135.787	135.791	135.704	135.527
.28402E+11	134.317	134.318	134.401	134.404	134.332	134.187
.31558E+11	133.105	133.106	133.175	133.177	133.117	132.997

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:25 NOV 03, 1995 CP= 36520.000
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.0731	47.3247	47.1128	46.8846
.20000E-05	67.0716	47.3240	47.1121	46.8840
31.558	67.0715	47.3239	47.1120	46.8839
.31558E+07	76.0760	58.7183	58.5141	58.2936
.63116E+07	80.3689	64.2737	64.0759	63.8620

.94673E+07	83.3067	68.1311	67.9391	67.7312
.12623E+08	85.5833	71.1496	70.9628	70.7603
.15779E+08	87.4544	73.6453	73.4632	73.2658
.18935E+08	89.0520	75.7827	75.6049	75.4121
.22090E+08	90.4556	77.6626	77.4888	77.3002
.25246E+08	91.7269	79.3571	79.1870	79.0023
.28402E+08	92.8948	80.9071	80.7404	80.5593
.31558E+08	93.9848	82.3448	82.1812	82.0035
.63115E+08	102.711	93.3713	93.2288	93.0738
.94673E+08	109.480	101.372	101.241	101.098
.12623E+09	114.647	107.294	107.172	107.037
.15779E+09	118.949	112.137	112.020	111.892
.18935E+09	122.649	116.259	116.146	116.023
.22090E+09	125.879	119.839	119.729	119.611
.25246E+09	128.796	123.057	122.951	122.836
.28402E+09	131.103	125.614	125.511	125.400
.31558E+09	133.047	127.778	127.678	127.569
.63115E+09	143.803	139.979	139.901	139.817
.94673E+09	149.713	146.804	146.742	146.676
.12623E+10	152.606	150.327	150.278	150.225
.15779E+10	153.723	151.905	151.865	151.823
.18935E+10	153.850	152.378	152.347	152.312
.22090E+10	153.606	152.404	152.378	152.350
.25246E+10	152.717	151.724	151.702	151.679
.28402E+10	151.866	151.038	151.020	151.001
.31558E+10	151.122	150.426	150.411	150.395
.63115E+10	146.876	146.652	146.648	146.643
.94673E+10	143.696	143.542	143.539	143.535
.12623E+11	141.934	141.809	141.806	141.803
.15779E+11	140.413	140.310	140.308	140.305
.18935E+11	138.639	138.553	138.551	138.549
.22090E+11	136.993	136.921	136.919	136.918
.25246E+11	135.527	135.467	135.466	135.464
.28402E+11	134.186	134.136	134.135	134.134
.31558E+11	132.997	132.955	132.954	132.953

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 36520.210 TIME= 03:40:25
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135

VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135

VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135

VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135

VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135

VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135

VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135

VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135

VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135

VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135

VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135

VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135

VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135

VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2751 TEMP	ot1o135	32.26	31.56	151.4	.2209E+10
3 NSOL	2714 TEMP	ot1i135	32.30	31.56	151.4	.2209E+10
4 NSOL	1968 TEMP	it1o135	44.50	31.56	152.3	.2209E+10
5 NSOL	1931 TEMP	it1i135	44.51	31.56	152.3	.2209E+10
6 NSOL	1088 TEMP	st1o135	46.31	31.56	152.3	.2209E+10
7 NSOL	1082 TEMP	st1i135	46.33	31.56	152.3	.2209E+10
8 NSOL	849 TEMP	ht1i135	115.9	31.56	163.7	.1262E+10
9 NSOL	853 TEMP	gt1i135	123.2	31.56	165.1	.9467E+09
10 NSOL	1 TEMP	c01i135	130.3	.2000E-05	166.7	.9467E+09
11 NSOL	683 TEMP	gb1i135	131.6	.2000E-05	166.8	.9467E+09
12 NSOL	684 TEMP	gb1h135	129.9	31.56	166.8	.9467E+09
13 NSOL	679 TEMP	sb1i135	87.07	31.56	156.4	.1578E+10
14 NSOL	962 TEMP	sb1o135	86.78	31.56	156.3	.1578E+10
15 NSOL	1640 TEMP	ib1i135	57.27	31.56	153.3	.1893E+10
16 NSOL	1677 TEMP	ib1o135	56.61	31.56	153.2	.1893E+10
17 NSOL	2751 TEMP	ob1o135	32.26	31.56	151.4	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:29 NOV 03, 1995 CP= 36523.350
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.2639	32.3036	44.5004	44.5155	46.3097	46.3308
.20000E-05	32.2639	32.3036	44.4999	44.5151	46.3091	46.3301
31.558	32.2638	32.3035	44.4998	44.5149	46.3090	46.3300
.31558E+07	45.2813	45.3167	56.3747	56.3873	57.6909	57.7099
.63116E+07	51.7456	51.7786	62.1648	62.1761	63.2668	63.2846
.94673E+07	56.2822	56.3134	66.1845	66.1949	67.1474	67.1643
.12623E+08	59.8567	59.8863	69.3292	69.3389	70.1900	70.2061
.15779E+08	62.8249	62.8533	71.9282	71.9372	72.7091	72.7246
.18935E+08	65.3734	65.4007	74.1527	74.1613	74.8687	74.8837
.22090E+08	67.6177	67.6440	76.1081	76.1162	76.7697	76.7842
.25246E+08	69.6364	69.6618	77.8688	77.8765	78.4838	78.4979
.28402E+08	71.4794	71.5040	79.4778	79.4852	80.0524	80.0661
.31558E+08	73.1838	73.2077	80.9687	80.9758	81.5076	81.5209
.63115E+08	85.9622	85.9815	92.3407	92.3458	92.6632	92.6741
.94673E+08	94.8832	94.9000	100.519	100.523	100.739	100.749
.12623E+09	101.376	101.391	106.553	106.557	106.715	106.724
.15779E+09	106.630	106.644	111.475	111.478	111.598	111.606
.18935E+09	111.074	111.088	115.658	115.661	115.752	115.760
.22090E+09	114.921	114.934	119.287	119.290	119.358	119.366
.25246E+09	118.369	118.381	122.547	122.549	122.600	122.607
.28402E+09	121.122	121.134	125.137	125.139	125.177	125.184
.31558E+09	123.457	123.469	127.327	127.329	127.358	127.365
.63115E+09	136.818	136.827	139.684	139.685	139.674	139.679
.94673E+09	144.392	144.398	146.593	146.594	146.572	146.576
.12623E+10	148.436	148.441	150.166	150.167	150.145	150.148
.15779E+10	150.398	150.402	151.778	151.778	151.759	151.761
.18935E+10	151.162	151.165	152.276	152.276	152.260	152.262
.22090E+10	151.413	151.415	152.320	152.320	152.307	152.309

.25246E+10	150.906	150.908	151.653	151.653	151.643	151.644
.28402E+10	150.358	150.360	150.978	150.979	150.970	150.971
.31558E+10	149.855	149.857	150.375	150.376	150.369	150.370
.63115E+10	146.471	146.471	146.635	146.635	146.634	146.634
.94673E+10	143.417	143.418	143.530	143.530	143.529	143.529
.12623E+11	141.708	141.708	141.799	141.799	141.798	141.798
.15779E+11	140.226	140.226	140.301	140.301	140.301	140.301
.18935E+11	138.483	138.484	138.546	138.546	138.545	138.546
.22090E+11	136.863	136.863	136.915	136.915	136.915	136.915
.25246E+11	135.419	135.419	135.462	135.462	135.462	135.462
.28402E+11	134.096	134.096	134.132	134.132	134.132	134.132
.31558E+11	132.922	132.922	132.951	132.951	132.952	132.952

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:29 NOV 03, 1995 CP= 36523.370
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	115.908	123.154	130.331	131.593	129.926	87.0767
.20000E-05	115.906	123.152	130.328	131.590	129.924	87.0741
31.558	115.905	123.152	130.328	131.590	129.924	87.0741
.31558E+07	122.655	129.341	135.957	137.050	135.613	94.4827
.63116E+07	125.264	131.614	137.897	138.905	137.581	97.8117
.94673E+07	126.761	132.849	138.874	139.822	138.577	100.002
.12623E+08	127.760	133.628	139.437	140.337	139.153	101.649
.15779E+08	128.482	134.159	139.779	140.640	139.506	102.973
.18935E+08	129.035	134.543	139.996	140.823	139.732	104.086
.22090E+08	129.482	134.836	140.139	140.936	139.883	105.053
.25246E+08	129.883	135.099	140.267	141.037	140.018	105.932
.28402E+08	130.249	135.339	140.382	141.128	140.141	106.742
.31558E+08	130.597	135.571	140.500	141.224	140.265	107.503
.63115E+08	134.301	138.480	142.625	143.198	142.449	114.007
.94673E+08	138.400	142.139	145.846	146.333	145.720	119.566
.12623E+09	141.919	145.381	148.812	149.245	148.725	123.980
.15779E+09	145.038	148.297	151.527	151.921	151.471	127.739
.18935E+09	147.787	150.885	153.955	154.317	153.924	131.005
.22090E+09	150.203	153.166	156.100	156.437	156.091	133.871
.25246E+09	152.398	155.241	158.058	158.372	158.067	136.470
.28402E+09	154.045	156.787	159.502	159.799	159.524	138.502
.31558E+09	155.378	158.028	160.652	160.934	160.685	140.199
.63115E+09	161.295	163.298	165.282	165.476	165.350	149.200
.94673E+09	163.586	165.146	166.693	166.836	166.763	153.909
.12623E+10	163.700	164.939	166.168	166.278	166.227	155.929
.15779E+10	162.653	163.650	164.639	164.728	164.686	156.390
.18935E+10	161.091	161.902	162.707	162.779	162.742	156.012
.22090E+10	159.514	160.177	160.837	160.897	160.863	155.372
.25246E+10	157.578	158.127	158.673	158.723	158.691	154.175
.28402E+10	155.898	156.356	156.811	156.854	156.825	153.080
.31558E+10	154.498	154.882	155.265	155.302	155.275	152.141
.63115E+10	147.931	148.054	148.177	148.189	148.178	147.199
.94673E+10	144.410	144.495	144.579	144.588	144.578	143.918
.12623E+11	142.507	142.576	142.644	142.651	142.643	142.113
.15779E+11	140.884	140.941	140.997	141.003	140.996	140.561
.18935E+11	139.027	139.074	139.121	139.126	139.120	138.762
.22090E+11	137.313	137.352	137.390	137.395	137.389	137.094
.25246E+11	135.791	135.823	135.855	135.859	135.854	135.611
.28402E+11	134.404	134.431	134.458	134.461	134.457	134.256
.31558E+11	133.177	133.199	133.221	133.224	133.221	133.055

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 03:40:29 NOV 03, 1995 CP= 36523.380
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	86.7846	57.2762	56.6141	32.2639
.20000E-05	86.7820	57.2751	56.6130	32.2639
31.558	86.7819	57.2749	56.6128	32.2638
.31558E+07	94.2014	67.7120	67.0704	45.2813
.63116E+07	97.5398	72.7201	72.0974	51.7456
.94673E+07	99.7381	76.1631	75.5575	56.2822
.12623E+08	101.393	78.8385	78.2487	59.8567
.15779E+08	102.724	81.0402	80.4649	62.8249
.18935E+08	103.842	82.9200	82.3579	65.3734
.22090E+08	104.816	84.5704	84.0207	67.6177
.25246E+08	105.700	86.0602	85.5218	69.6364
.28402E+08	106.514	87.4247	86.8967	71.4794
.31558E+08	107.279	88.6933	88.1749	73.1838
.63115E+08	113.813	98.6056	98.1549	85.9622
.94673E+08	119.388	106.016	105.602	94.8832
.12623E+09	123.811	111.578	111.187	101.376
.15779E+09	127.577	116.165	115.790	106.630
.18935E+09	130.849	120.086	119.723	111.074
.22090E+09	133.720	123.496	123.145	114.921
.25246E+09	136.323	126.567	126.226	118.369
.28402E+09	138.359	128.997	128.666	121.122
.31558E+09	140.060	131.047	130.724	123.457
.63115E+09	149.090	142.435	142.183	136.818
.94673E+09	153.822	148.707	148.507	144.392
.12623E+10	155.859	151.830	151.670	148.436
.15779E+10	156.333	153.106	152.978	150.398
.18935E+10	155.967	153.350	153.246	151.162
.22090E+10	155.335	153.195	153.111	151.413
.25246E+10	154.145	152.375	152.305	150.906
.28402E+10	153.054	151.579	151.521	150.358
.31558E+10	152.120	150.879	150.831	149.855
.63115E+10	147.193	146.795	146.780	146.471
.94673E+10	143.913	143.639	143.629	143.417
.12623E+11	142.109	141.887	141.879	141.708
.15779E+11	140.558	140.374	140.368	140.226
.18935E+11	138.759	138.606	138.601	138.483
.22090E+11	137.092	136.965	136.960	136.863
.25246E+11	135.609	135.503	135.500	135.419
.28402E+11	134.255	134.166	134.163	134.096
.31558E+11	133.054	132.980	132.978	132.922

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 36523.590 TIME= 03:40:29
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045
 VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045
 VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045
 VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9855 TEMP	ot4o045	32.28	31.56	151.4	.2209E+10
3 NSOL	9818 TEMP	ot4i045	32.32	31.56	151.4	.2209E+10
4 NSOL	9546 TEMP	it4o045	44.52	31.56	152.3	.2209E+10
5 NSOL	9509 TEMP	it4i045	44.54	31.56	152.3	.2209E+10
6 NSOL	8352 TEMP	st4o045	46.33	31.56	152.3	.2209E+10
7 NSOL	8346 TEMP	st4i045	46.35	31.56	152.3	.2209E+10
8 NSOL	8234 TEMP	ht4i045	115.9	31.56	163.7	.1262E+10
9 NSOL	8238 TEMP	gt4i045	123.2	31.56	165.2	.9467E+09
10 NSOL	7642 TEMP	c04i045	130.4	.2000E-05	166.7	.9467E+09
11 NSOL	7654 TEMP	gb4i045	131.6	.2000E-05	166.8	.9467E+09
12 NSOL	7655 TEMP	gb4h045	130.0	31.56	166.8	.9467E+09
13 NSOL	7650 TEMP	sb4i045	87.11	31.56	156.4	.1578E+10
14 NSOL	7871 TEMP	sb4o045	86.82	31.56	156.3	.1578E+10
15 NSOL	8934 TEMP	ib4i045	57.33	31.56	153.4	.1893E+10
16 NSOL	8971 TEMP	ib4o045	56.67	31.56	153.3	.1893E+10
17 NSOL	9855 TEMP	ob4o045	32.28	31.56	151.4	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:32 NOV 03, 1995 CP= 36526.710
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.2815	32.3221	44.5214	44.5365	46.3324	46.3534
.20000E-05	32.2815	32.3220	44.5209	44.5360	46.3317	46.3528
31.558	32.2815	32.3220	44.5208	44.5359	46.3316	46.3526
.31558E+07	45.2963	45.3324	56.3932	56.4058	57.7109	57.7299
.63116E+07	51.7592	51.7929	62.1819	62.1932	63.2854	63.3032
.94673E+07	56.2949	56.3267	66.2006	66.2110	67.1649	67.1818
.12623E+08	59.8686	59.8988	69.3445	69.3542	70.2067	70.2228
.15779E+08	62.8361	62.8651	71.9428	71.9519	72.7250	72.7406
.18935E+08	65.3841	65.4120	74.1667	74.1753	74.8840	74.8990
.22090E+08	67.6280	67.6548	76.1216	76.1298	76.7844	76.7989
.25246E+08	69.6462	69.6722	77.8818	77.8896	78.4981	78.5122
.28402E+08	71.4888	71.5140	79.4905	79.4979	80.0662	80.0799

.31558E+08	73.1929	73.2173	80.9810	80.9881	81.5210	81.5343
.63115E+08	85.9692	85.9889	92.3505	92.3556	92.6740	92.6849
.94673E+08	94.8891	94.9063	100.528	100.532	100.748	100.758
.12623E+09	101.381	101.397	106.561	106.565	106.724	106.732
.15779E+09	106.635	106.649	111.483	111.486	111.605	111.614
.18935E+09	111.079	111.092	115.665	115.668	115.759	115.767
.22090E+09	114.925	114.938	119.294	119.296	119.365	119.373
.25246E+09	118.373	118.385	122.553	122.555	122.607	122.614
.28402E+09	121.126	121.138	125.143	125.145	125.184	125.191
.31558E+09	123.461	123.472	127.333	127.335	127.364	127.371
.63115E+09	136.821	136.829	139.688	139.689	139.678	139.683
.94673E+09	144.394	144.400	146.596	146.597	146.575	146.579
.12623E+10	148.438	148.443	150.169	150.169	150.147	150.150
.15779E+10	150.399	150.403	151.780	151.780	151.761	151.763
.18935E+10	151.163	151.166	152.277	152.278	152.262	152.264
.22090E+10	151.414	151.416	152.321	152.321	152.309	152.310
.25246E+10	150.906	150.909	151.654	151.654	151.644	151.645
.28402E+10	150.358	150.360	150.979	150.979	150.971	150.972
.31558E+10	149.856	149.857	150.376	150.376	150.370	150.371
.63115E+10	146.471	146.471	146.635	146.635	146.634	146.634
.94673E+10	143.417	143.418	143.530	143.530	143.529	143.529
.12623E+11	141.708	141.708	141.799	141.799	141.798	141.798
.15779E+11	140.226	140.226	140.301	140.301	140.301	140.301
.18935E+11	138.483	138.484	138.546	138.546	138.546	138.546
.22090E+11	136.863	136.863	136.915	136.915	136.915	136.915
.25246E+11	135.419	135.419	135.462	135.462	135.462	135.462
.28402E+11	134.096	134.096	134.132	134.132	134.132	134.132
.31558E+11	132.922	132.922	132.951	132.952	132.952	132.952

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:32 NOV 03, 1995 CP= 36526.720
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.942	123.189	130.368	131.630	129.963	87.1159
.20000E-05	115.939	123.187	130.365	131.628	129.960	87.1133
31.558	115.939	123.187	130.365	131.628	129.960	87.1132
.31558E+07	122.687	129.374	135.992	137.086	135.648	94.5195
.63116E+07	125.295	131.646	137.931	138.939	137.614	97.8469
.94673E+07	126.790	132.880	138.907	139.855	138.609	100.036
.12623E+08	127.788	133.658	139.468	140.369	139.184	101.682
.15779E+08	128.509	134.188	139.810	140.671	139.536	103.005
.18935E+08	129.062	134.571	140.026	140.853	139.761	104.117
.22090E+08	129.507	134.864	140.168	140.966	139.912	105.084
.25246E+08	129.908	135.126	140.295	141.066	140.046	105.962
.28402E+08	130.273	135.365	140.410	141.156	140.168	106.771
.31558E+08	130.621	135.597	140.527	141.252	140.292	107.531
.63115E+08	134.321	138.502	142.648	143.222	142.472	114.031
.94673E+08	138.418	142.159	145.867	146.355	145.741	119.588
.12623E+09	141.936	145.399	148.832	149.265	148.744	124.000
.15779E+09	145.053	148.314	151.546	151.940	151.489	127.758
.18935E+09	147.802	150.901	153.973	154.335	153.942	131.023
.22090E+09	150.218	153.181	156.117	156.454	156.108	133.888
.25246E+09	152.411	155.256	158.074	158.389	158.083	136.487
.28402E+09	154.059	156.801	159.517	159.815	159.539	138.517
.31558E+09	155.391	158.042	160.668	160.950	160.700	140.214
.63115E+09	161.304	163.308	165.294	165.487	165.361	149.211
.94673E+09	163.593	165.154	166.702	166.845	166.771	153.918
.12623E+10	163.706	164.945	166.175	166.286	166.234	155.937
.15779E+10	162.658	163.655	164.645	164.734	164.692	156.396
.18935E+10	161.095	161.906	162.711	162.784	162.746	156.017

.22090E+10	159.517	160.181	160.840	160.900	160.866	155.376
.25246E+10	157.581	158.130	158.676	158.726	158.695	154.178
.28402E+10	155.901	156.358	156.814	156.857	156.827	153.082
.31558E+10	154.499	154.884	155.268	155.304	155.277	152.143
.63115E+10	147.932	148.055	148.178	148.190	148.178	147.200
.94673E+10	144.411	144.495	144.579	144.588	144.579	143.918
.12623E+11	142.508	142.576	142.644	142.651	142.644	142.113
.15779E+11	140.885	140.941	140.998	141.004	140.997	140.562
.18935E+11	139.027	139.074	139.121	139.126	139.120	138.762
.22090E+11	137.313	137.352	137.391	137.395	137.390	137.095
.25246E+11	135.791	135.823	135.855	135.859	135.854	135.611
.28402E+11	134.404	134.431	134.458	134.461	134.457	134.256
.31558E+11	133.177	133.199	133.221	133.224	133.221	133.055

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:32 NOV 03, 1995 CP= 36526.730
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	86.8238	57.3318	56.6704	32.2815
.20000E-05	86.8212	57.3307	56.6693	32.2815
31.558	86.8211	57.3304	56.6691	32.2815
.31558E+07	94.2383	67.7628	67.1218	45.2963
.63116E+07	97.5751	72.7680	72.1460	51.7592
.94673E+07	99.7721	76.2087	75.6038	56.2949
.12623E+08	101.426	78.8824	78.2931	59.8686
.15779E+08	102.756	81.0824	80.5077	62.8361
.18935E+08	103.873	82.9608	82.3993	65.3841
.22090E+08	104.846	84.6099	84.0608	67.6280
.25246E+08	105.729	86.0986	85.5607	69.6462
.28402E+08	106.543	87.4621	86.9346	71.4888
.31558E+08	107.308	88.7297	88.2119	73.1929
.63115E+08	113.837	98.6357	98.1855	85.9692
.94673E+08	119.410	106.042	105.629	94.8891
.12623E+09	123.831	111.603	111.212	101.381
.15779E+09	127.596	116.188	115.813	106.635
.18935E+09	130.867	120.108	119.745	111.079
.22090E+09	133.737	123.517	123.166	114.925
.25246E+09	136.340	126.587	126.247	118.373
.28402E+09	138.374	129.017	128.686	121.126
.31558E+09	140.075	131.065	130.743	123.461
.63115E+09	149.102	142.449	142.197	136.821
.94673E+09	153.831	148.717	148.518	144.394
.12623E+10	155.867	151.838	151.679	148.438
.15779E+10	156.339	153.113	152.985	150.399
.18935E+10	155.971	153.355	153.251	151.163
.22090E+10	155.339	153.200	153.115	151.414
.25246E+10	154.148	152.378	152.309	150.906
.28402E+10	153.057	151.582	151.524	150.358
.31558E+10	152.122	150.882	150.833	149.856
.63115E+10	147.193	146.796	146.781	146.471
.94673E+10	143.914	143.640	143.630	143.417
.12623E+11	142.110	141.888	141.879	141.708
.15779E+11	140.559	140.375	140.368	140.226
.18935E+11	138.760	138.607	138.601	138.483
.22090E+11	137.093	136.965	136.961	136.863
.25246E+11	135.610	135.504	135.500	135.419
.28402E+11	134.255	134.167	134.164	134.096
.31558E+11	133.054	132.980	132.978	132.922

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 36526.940 TIME= 03:40:32
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise

VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise

VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise

VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise

VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise

VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise

VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise

VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise

VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise

VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise

VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise

VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise

VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise

VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise

VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
 VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2	NSOL	2763 TEMP	ot1oise	31.42	31.56	151.4	.2209E+10
3	NSOL	2726 TEMP	ot1iise	31.45	31.56	151.4	.2209E+10
4	NSOL	1980 TEMP	it1oise	50.20	31.56	152.9	.1893E+10
5	NSOL	1943 TEMP	it1iise	50.25	31.56	152.9	.1893E+10
6	NSOL	1281 TEMP	st1oise	56.85	31.56	153.4	.1893E+10
7	NSOL	1247 TEMP	st1iise	57.36	31.56	153.5	.1893E+10
8	NSOL	1206 TEMP	ht1iise	99.83	31.56	159.0	.1262E+10
9	NSOL	1207 TEMP	gt1iise	116.2	.2000E-05	162.2	.1262E+10
10	NSOL	63 TEMP	c01iise	124.1	.2000E-05	163.8	.1262E+10
11	NSOL	1034 TEMP	gb1iise	125.1	.2000E-05	163.9	.1262E+10
12	NSOL	1035 TEMP	gb1hise	117.2	.2000E-05	162.1	.1262E+10
13	NSOL	1033 TEMP	sb1iise	98.17	31.56	158.4	.1262E+10
14	NSOL	1071 TEMP	sb1oise	97.48	31.56	158.2	.1578E+10
15	NSOL	1652 TEMP	ib1iise	60.60	31.56	153.8	.1893E+10
16	NSOL	1689 TEMP	ib1oise	59.83	31.56	153.7	.1893E+10
17	NSOL	2763 TEMP	ob1oise	31.42	31.56	151.4	.2209E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:35 NOV 03, 1995 CP= 36530.070
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	31.4189	31.4474	50.2006	50.2492	56.8541	57.3585
.20000E-05	31.4188	31.4474	50.1999	50.2485	56.8529	57.3574
31.558	31.4188	31.4474	50.1997	50.2483	56.8528	57.3572
.31558E+07	44.5407	44.5657	61.6390	61.6842	67.4521	67.9329
.63116E+07	51.0618	51.0848	67.1545	67.1975	72.5365	73.0002
.94673E+07	55.6402	55.6618	70.9574	70.9986	76.0292	76.4782
.12623E+08	59.2485	59.2689	73.9182	73.9579	78.7407	79.1765
.15779E+08	62.2451	62.2646	76.3567	76.3951	80.9699	81.3938
.18935E+08	64.8182	64.8368	78.4390	78.4762	82.8714	83.2845
.22090E+08	67.0841	67.1020	80.2664	80.3025	84.5397	84.9428
.25246E+08	69.1219	69.1391	81.9122	81.9474	86.0444	86.4386
.28402E+08	70.9821	70.9987	83.4167	83.4510	87.4218	87.8077
.31558E+08	72.7021	72.7182	84.8118	84.8453	88.7020	89.0801
.63115E+08	85.5818	85.5944	95.5476	95.5757	98.6853	99.0113
.94673E+08	94.5554	94.5663	103.386	103.411	106.135	106.434
.12623E+09	101.079	101.089	109.212	109.236	111.725	112.007
.15779E+09	106.356	106.365	113.986	114.008	116.331	116.601
.18935E+09	110.819	110.827	118.052	118.073	120.265	120.526
.22090E+09	114.680	114.688	121.581	121.602	123.686	123.938
.25246E+09	118.141	118.148	124.753	124.773	126.765	127.010
.28402E+09	120.904	120.911	127.267	127.286	129.199	129.438
.31558E+09	123.249	123.256	129.388	129.406	131.251	131.483
.63115E+09	136.669	136.674	141.242	141.256	142.624	142.806
.94673E+09	144.279	144.283	147.803	147.814	148.867	149.012
.12623E+10	148.349	148.352	151.123	151.132	151.961	152.077
.15779E+10	150.329	150.331	152.543	152.550	153.213	153.306
.18935E+10	151.106	151.108	152.894	152.899	153.435	153.511
.22090E+10	151.368	151.369	152.823	152.828	153.265	153.326
.25246E+10	150.868	150.870	152.067	152.071	152.431	152.481
.28402E+10	150.327	150.328	151.322	151.325	151.624	151.666
.31558E+10	149.829	149.830	150.663	150.666	150.917	150.952
.63115E+10	146.462	146.463	146.725	146.726	146.806	146.817
.94673E+10	143.412	143.412	143.591	143.592	143.646	143.654
.12623E+11	141.703	141.703	141.848	141.849	141.893	141.898
.15779E+11	140.222	140.222	140.342	140.342	140.379	140.384
.18935E+11	138.480	138.480	138.579	138.580	138.610	138.614
.22090E+11	136.860	136.860	136.943	136.943	136.968	136.971
.25246E+11	135.417	135.417	135.485	135.485	135.506	135.508
.28402E+11	134.094	134.094	134.151	134.151	134.168	134.170
.31558E+11	132.920	132.920	132.967	132.967	132.982	132.984

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:35 NOV 03, 1995 CP= 36530.080
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gb1iise	1035 TEMP gb1hise	1033 TEMP sb1iise
.10000E-05	99.8353	116.243	124.085	125.144	117.184	98.1689
.20000E-05	99.8328	116.240	124.082	125.141	117.181	98.1658
31.558	99.8327	116.240	124.082	125.141	117.181	98.1657
.31558E+07	106.886	122.205	129.529	130.459	122.915	105.086
.63116E+07	109.859	124.504	131.510	132.375	125.110	108.036
.94673E+07	111.720	125.826	132.579	133.399	126.366	109.901
.12623E+08	113.063	126.711	133.247	134.031	127.201	111.259
.15779E+08	114.108	127.352	133.699	134.453	127.803	112.323
.18935E+08	114.962	127.846	134.024	134.751	128.265	113.198
.22090E+08	115.691	128.247	134.271	134.975	128.639	113.948
.25246E+08	116.350	128.611	134.495	135.178	128.978	114.628

.28402E+08	116.956	128.944	134.700	135.365	129.291	115.255
.31558E+08	117.528	129.264	134.902	135.549	129.592	115.847
.63115E+08	122.732	132.737	137.556	138.084	132.938	121.200
.94673E+08	127.590	136.631	140.990	141.448	136.759	126.143
.12623E+09	131.564	139.995	144.062	144.476	140.078	130.174
.15779E+09	135.001	142.987	146.841	147.222	143.038	133.656
.18935E+09	138.007	145.635	149.318	149.674	145.662	136.700
.22090E+09	140.648	147.972	151.510	151.844	147.981	139.375
.25246E+09	143.045	150.103	153.513	153.829	150.096	141.804
.28402E+09	144.892	151.716	155.016	155.316	151.699	143.681
.31558E+09	146.417	153.032	156.231	156.519	153.006	145.236
.63115E+09	154.062	159.143	161.607	161.815	159.088	153.125
.94673E+09	157.761	161.756	163.697	163.856	161.699	157.012
.12623E+10	159.009	162.198	163.750	163.876	162.148	158.407
.15779E+10	158.870	161.443	162.697	162.799	161.401	158.382
.18935E+10	158.025	160.120	161.143	161.227	160.086	157.628
.22090E+10	157.016	158.733	159.571	159.641	158.705	156.690
.25246E+10	155.529	156.950	157.644	157.702	156.928	155.260
.28402E+10	154.203	155.388	155.967	156.016	155.370	153.980
.31558E+10	153.082	154.078	154.565	154.607	154.064	152.895
.63115E+10	147.495	147.812	147.968	147.982	147.809	147.435
.94673E+10	144.118	144.335	144.442	144.451	144.333	144.078
.12623E+11	142.274	142.449	142.536	142.543	142.448	142.241
.15779E+11	140.693	140.838	140.910	140.916	140.837	140.667
.18935E+11	138.871	138.991	139.050	139.055	138.990	138.849
.22090E+11	137.184	137.284	137.333	137.338	137.283	137.166
.25246E+11	135.685	135.768	135.808	135.812	135.767	135.670
.28402E+11	134.317	134.386	134.419	134.423	134.386	134.305
.31558E+11	133.105	133.162	133.190	133.193	133.162	133.095

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:35 NOV 03, 1995 CP= 36530.090
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP	1652 TEMP	1689 TEMP	2763 TEMP
	sbloise	ibliise	ibloise	obloise
.10000E-05	97.4783	60.5973	59.8323	31.4189
.20000E-05	97.4752	60.5960	59.8310	31.4188
31.558	97.4751	60.5957	59.8308	31.4188
.31558E+07	104.417	70.9211	70.1736	44.5407
.63116E+07	107.386	75.8249	75.0972	51.0618
.94673E+07	109.270	79.1735	78.4645	55.6402
.12623E+08	110.645	81.7630	81.0714	59.2485
.15779E+08	111.723	83.8860	83.2108	62.2451
.18935E+08	112.613	85.6937	85.0336	64.8182
.22090E+08	113.375	87.2777	86.6317	67.0841
.25246E+08	114.068	88.7071	88.0739	69.1219
.28402E+08	114.705	90.0159	89.3947	70.9821
.31558E+08	115.307	91.2330	90.6228	72.7021
.63115E+08	120.729	100.800	100.267	85.5818
.94673E+08	125.708	108.022	107.530	94.5554
.12623E+09	129.760	113.470	113.002	101.079
.15779E+09	133.257	117.975	117.525	106.356
.18935E+09	136.313	121.831	121.395	110.819
.22090E+09	138.999	125.185	124.762	114.680
.25246E+09	141.437	128.206	127.794	118.141
.28402E+09	143.323	130.590	130.189	120.904
.31558E+09	144.887	132.597	132.205	123.249
.63115E+09	152.847	143.643	143.334	136.669
.94673E+09	156.790	149.661	149.415	144.279
.12623E+10	158.228	152.589	152.393	148.349
.15779E+10	158.239	153.715	153.557	150.329
.18935E+10	157.512	153.841	153.713	151.106

.22090E+10	156.595	153.595	153.491	151.368
.25246E+10	155.182	152.703	152.617	150.868
.28402E+10	153.915	151.850	151.779	150.327
.31558E+10	152.841	151.106	151.047	149.829
.63115E+10	147.419	146.865	146.847	146.462
.94673E+10	144.066	143.687	143.674	143.412
.12623E+11	142.232	141.925	141.915	141.703
.15779E+11	140.660	140.405	140.397	140.222
.18935E+11	138.843	138.632	138.625	138.480
.22090E+11	137.161	136.986	136.981	136.860
.25246E+11	135.666	135.521	135.516	135.417
.28402E+11	134.302	134.181	134.177	134.094
.31558E+11	133.093	132.992	132.989	132.920

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 36530.300 TIME= 03:40:35
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2682 TEMP	ot1oose	34.40	31.56	151.5	.2209E+10
3	NSOL	2673 TEMP	ot1oose	34.49	31.56	151.6	.2209E+10
4	NSOL	1899 TEMP	it1oose	36.05	31.56	151.7	.2209E+10
5	NSOL	1794 TEMP	it1oose	36.01	31.56	151.7	.2209E+10
6	NSOL	1276 TEMP	st1oose	43.03	31.56	152.0	.2209E+10
7	NSOL	1233 TEMP	st1oose	43.06	31.56	152.0	.2209E+10
8	NSOL	1196 TEMP	ht1oose	67.07	31.56	153.9	.1893E+10
9	NSOL	1197 TEMP	gt1oose	81.42	31.56	155.4	.1578E+10
10	NSOL	58 TEMP	c01oose	86.03	31.56	156.0	.1578E+10
11	NSOL	1019 TEMP	gb1oose	87.47	31.56	156.1	.1578E+10
12	NSOL	1020 TEMP	gb1hose	84.26	31.56	155.7	.1578E+10

13 NSOL	1018 TEMP	sb1iose	74.94	31.56	154.4	.1578E+10
14 NSOL	1066 TEMP	sb1oose	74.80	31.56	154.4	.1578E+10
15 NSOL	1529 TEMP	ib1iose	52.55	31.56	152.7	.1893E+10
16 NSOL	1608 TEMP	ib1oose	52.33	31.56	152.6	.1893E+10
17 NSOL	2682 TEMP	ob1oose	34.40	31.56	151.5	.2209E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:39 NOV 03, 1995 CP= 36533.430
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1oose	2673 TEMP ot1iose	1899 TEMP it1oose	1794 TEMP it1iose	1276 TEMP st1oose	1233 TEMP st1iose
.10000E-05	34.4005	34.4925	36.0520	36.0113	43.0350	43.0648
.20000E-05	34.4004	34.4924	36.0518	36.0112	43.0345	43.0643
.31558E+07	34.4004	34.4923	36.0517	36.0111	43.0344	43.0642
.63116E+07	47.1798	47.2640	48.6849	48.6491	54.6637	54.6891
.94673E+07	53.5113	53.5908	54.9293	54.8963	60.3978	60.4209
.12623E+08	57.9488	58.0246	59.2997	59.2687	64.4047	64.4262
.15779E+08	61.4423	61.5151	62.7371	62.7079	67.5530	67.5733
.18935E+08	64.3419	64.4120	65.5884	65.5605	70.1644	70.1837
.22090E+08	66.8308	66.8986	68.0348	68.0081	72.4060	72.4243
.25246E+08	69.0224	69.0881	70.1883	70.1628	74.3808	74.3984
.28402E+08	70.9943	71.0581	72.1262	72.1016	76.1613	76.1782
.31558E+08	72.7950	72.8571	73.8961	73.8724	77.7903	77.8066
.34714E+08	74.4610	74.5216	75.5339	75.5110	79.3009	79.3166
.37870E+08	86.9885	87.0389	87.8754	87.8577	90.8242	90.8362
.41026E+08	95.7790	95.8240	96.5688	96.5538	99.0963	99.1062
.44182E+08	102.192	102.234	102.922	102.908	105.194	105.203
.47338E+08	107.388	107.427	108.072	108.060	110.164	110.172
.50494E+08	111.787	111.824	112.435	112.424	114.388	114.395
.53650E+08	115.595	115.631	116.215	116.204	118.052	118.059
.56806E+08	119.011	119.045	119.605	119.595	121.345	121.351
.59962E+08	121.737	121.770	122.308	122.299	123.967	123.973
.63118E+08	124.048	124.080	124.600	124.591	126.188	126.193
.66274E+08	137.248	137.272	137.660	137.654	138.794	138.797
.69430E+08	144.718	144.737	145.036	145.032	145.891	145.893
.72586E+08	148.692	148.706	148.942	148.939	149.607	149.609
.75742E+08	150.601	150.613	150.802	150.799	151.330	151.331
.78898E+08	151.326	151.335	151.487	151.485	151.913	151.914
.82054E+08	151.546	151.554	151.678	151.676	152.025	152.026
.85210E+08	151.016	151.022	151.124	151.123	151.411	151.411
.88366E+08	150.449	150.454	150.539	150.538	150.778	150.778
.91522E+08	149.932	149.936	150.007	150.006	150.208	150.208
.94678E+08	146.495	146.496	146.519	146.519	146.583	146.583
.97834E+08	143.434	143.435	143.450	143.450	143.495	143.495
1.00990E+08	141.721	141.722	141.734	141.734	141.770	141.770
1.04146E+08	140.237	140.238	140.248	140.248	140.278	140.278
1.07302E+08	138.493	138.493	138.502	138.502	138.526	138.527
1.10458E+08	136.871	136.871	136.878	136.878	136.899	136.899
1.13614E+08	135.425	135.426	135.431	135.431	135.449	135.449
1.16770E+08	134.102	134.102	134.107	134.107	134.121	134.121
1.19926E+08	132.926	132.927	132.931	132.931	132.943	132.943

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:39 NOV 03, 1995 CP= 36533.440
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP htliose	1197 TEMP gtliose	58 TEMP c0liose	1019 TEMP gbliose	1020 TEMP gbliose	1018 TEMP sbliose
.10000E-05	67.0731	81.4183	86.0334	87.4696	84.2616	74.9381
.20000E-05	67.0716	81.4162	86.0310	87.4670	84.2591	74.9359
31.558	67.0715	81.4162	86.0310	87.4670	84.2590	74.9358
.31558E+07	76.0760	89.1517	93.3401	94.6062	91.6221	83.0170
.63116E+07	80.3689	92.7045	96.6505	97.8271	94.9817	86.8125
.94673E+07	83.3067	95.0775	98.8414	99.9533	97.2172	89.3887
.12623E+08	85.5833	96.8838	100.497	101.557	98.9135	91.3733
.15779E+08	87.4544	98.3493	101.833	102.849	100.287	92.9979
.18935E+08	89.0520	99.5887	102.958	103.936	101.447	94.3813
.22090E+08	90.4556	100.671	103.939	104.884	102.461	95.5955
.25246E+08	91.7269	101.654	104.831	105.745	103.382	96.6982
.28402E+08	92.8948	102.560	105.653	106.540	104.232	97.7138
.31558E+08	93.9848	103.409	106.425	107.287	105.030	98.6648
.63115E+08	102.711	110.504	112.997	113.691	111.787	106.466
.94673E+08	109.480	116.378	118.577	119.178	117.476	112.734
.12623E+09	114.647	120.983	122.998	123.543	121.969	117.593
.15779E+09	118.949	124.880	126.761	127.264	125.786	121.675
.18935E+09	122.649	128.257	130.032	130.502	129.100	125.201
.22090E+09	125.879	131.217	132.903	133.347	132.009	128.289
.25246E+09	128.796	133.900	135.509	135.929	134.647	131.083
.28402E+09	131.103	136.007	137.550	137.952	136.718	133.287
.31558E+09	133.047	137.774	139.260	139.645	138.454	135.142
.63115E+09	143.803	147.315	148.414	148.692	147.798	145.317
.94673E+09	149.713	152.420	153.266	153.478	152.784	150.862
.12623E+10	152.606	154.741	155.409	155.575	155.025	153.504
.15779E+10	153.723	155.435	155.970	156.103	155.661	154.440
.18935E+10	153.850	155.238	155.673	155.781	155.422	154.431
.22090E+10	153.606	154.740	155.097	155.185	154.891	154.080
.25246E+10	152.717	153.655	153.951	154.024	153.780	153.110
.28402E+10	151.866	152.648	152.895	152.956	152.752	152.194
.31558E+10	151.122	151.780	151.987	152.039	151.868	151.398
.63115E+10	146.876	147.086	147.153	147.170	147.115	146.965
.94673E+10	143.696	143.841	143.887	143.899	143.861	143.758
.12623E+11	141.934	142.051	142.089	142.098	142.068	141.984
.15779E+11	140.413	140.511	140.542	140.550	140.524	140.455
.18935E+11	138.639	138.720	138.746	138.753	138.731	138.674
.22090E+11	136.993	137.060	137.082	137.087	137.070	137.022
.25246E+11	135.527	135.583	135.601	135.605	135.591	135.551
.28402E+11	134.186	134.233	134.248	134.251	134.239	134.206
.31558E+11	132.997	133.035	133.048	133.051	133.041	133.014

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:39 NOV 03, 1995 CP= 36533.450
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP sbliose	1529 TEMP ibliose	1608 TEMP ibliose	2682 TEMP obliose
.10000E-05	74.7986	52.5509	52.3348	34.4005
.20000E-05	74.7964	52.5499	52.3339	34.4004
31.558	74.7963	52.5497	52.3337	34.4004
.31558E+07	82.8832	63.1729	62.9639	47.1798
.63116E+07	86.6832	68.3373	68.1344	53.5113
.94673E+07	89.2634	71.9179	71.7205	57.9488
.12623E+08	91.2514	74.7174	74.5250	61.4423
.15779E+08	92.8792	77.0316	76.8438	64.3419
.18935E+08	94.2656	79.0140	78.8305	66.8308
.22090E+08	95.4826	80.7589	80.5792	69.0224
.25246E+08	96.5878	82.3345	82.1584	70.9943

.28402E+08	97.6056	83.7781	83.6053	72.7950
.31558E+08	98.5587	85.1197	84.9500	74.4610
.63115E+08	106.375	95.5265	95.3781	86.9885
.94673E+08	112.650	103.207	103.071	95.7790
.12623E+09	117.514	108.941	108.812	102.192
.15779E+09	121.600	113.651	113.528	107.388
.18935E+09	125.129	117.670	117.552	111.787
.22090E+09	128.218	121.165	121.050	115.595
.25246E+09	131.015	124.311	124.200	119.011
.28402E+09	133.221	126.809	126.701	121.737
.31558E+09	135.078	128.921	128.816	124.048
.63115E+09	145.267	140.792	140.710	137.248
.94673E+09	150.822	147.415	147.350	144.718
.12623E+10	153.472	150.802	150.750	148.692
.15779E+10	154.415	152.282	152.240	150.601
.18935E+10	154.410	152.683	152.649	151.326
.22090E+10	154.063	152.652	152.625	151.546
.25246E+10	153.096	151.928	151.906	151.016
.28402E+10	152.182	151.209	151.190	150.449
.31558E+10	151.388	150.569	150.554	149.932
.63115E+10	146.961	146.698	146.693	146.495
.94673E+10	143.756	143.574	143.570	143.434
.12623E+11	141.982	141.835	141.832	141.721
.15779E+11	140.454	140.331	140.329	140.237
.18935E+11	138.673	138.571	138.569	138.493
.22090E+11	137.021	136.936	136.934	136.871
.25246E+11	135.550	135.479	135.478	135.425
.28402E+11	134.206	134.146	134.145	134.102
.31558E+11	133.013	132.964	132.963	132.926

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 36533.660 TIME= 03:40:39
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise
 VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise
 VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise
 VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise
 VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise
 VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise
 VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise
 VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise
 VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise
 VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise
 VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise
 VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise
 VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise
 VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise
 VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9867 TEMP	ot4oise	31.42	31.56	151.4	.2209E+10
3	NSOL	9830 TEMP	ot4iise	31.45	31.56	151.4	.2209E+10
4	NSOL	9558 TEMP	it4oise	50.21	31.56	152.9	.1893E+10
5	NSOL	9521 TEMP	it4iise	50.25	31.56	152.9	.1893E+10
6	NSOL	8545 TEMP	st4oise	56.86	31.56	153.4	.1893E+10
7	NSOL	8511 TEMP	st4iise	57.37	31.56	153.5	.1893E+10
8	NSOL	8470 TEMP	ht4iise	99.84	31.56	159.0	.1262E+10
9	NSOL	8471 TEMP	gt4iise	116.2	.2000E-05	162.2	.1262E+10
10	NSOL	7947 TEMP	c04iise	124.1	.2000E-05	163.8	.1262E+10
11	NSOL	7952 TEMP	gb4iise	125.1	.2000E-05	163.9	.1262E+10
12	NSOL	7953 TEMP	gb4hise	117.2	.2000E-05	162.1	.1262E+10
13	NSOL	7951 TEMP	sb4iise	98.18	31.56	158.4	.1262E+10
14	NSOL	7996 TEMP	sb4oise	97.49	31.56	158.2	.1578E+10
15	NSOL	8946 TEMP	ib4iise	60.61	31.56	153.8	.1893E+10
16	NSOL	8983 TEMP	ib4oise	59.84	31.56	153.7	.1893E+10
17	NSOL	9867 TEMP	ob4oise	31.42	31.56	151.4	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:42 NOV 03, 1995 CP= 36536.790
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.4244	31.4526	50.2067	50.2553	56.8625	57.3667
.20000E-05	31.4244	31.4526	50.2060	50.2545	56.8613	57.3655
31.558	31.4244	31.4526	50.2058	50.2544	56.8611	57.3653
.31558E+07	44.5454	44.5701	61.6444	61.6896	67.4593	67.9399
.63116E+07	51.0661	51.0888	67.1595	67.2025	72.5430	73.0066
.94673E+07	55.6442	55.6655	70.9621	71.0033	76.0353	76.4841
.12623E+08	59.2522	59.2724	73.9226	73.9623	78.7464	79.1820
.15779E+08	62.2486	62.2678	76.3610	76.3994	80.9753	81.3990
.18935E+08	64.8215	64.8399	78.4431	78.4803	82.8766	83.2895
.22090E+08	67.0873	67.1049	80.2704	80.3065	84.5446	84.9476
.25246E+08	69.1249	69.1420	81.9161	81.9513	86.0492	86.4432
.28402E+08	70.9850	71.0014	83.4204	83.4547	87.4265	87.8121
.31558E+08	72.7049	72.7208	84.8155	84.8489	88.7064	89.0844
.63115E+08	85.5839	85.5964	95.5505	95.5786	98.6887	99.0147
.94673E+08	94.5572	94.5680	103.388	103.414	106.138	106.436
.12623E+09	101.081	101.091	109.215	109.238	111.728	112.010
.15779E+09	106.358	106.367	113.988	114.010	116.333	116.603
.18935E+09	110.820	110.828	118.054	118.075	120.267	120.528
.22090E+09	114.681	114.689	121.583	121.604	123.688	123.940
.25246E+09	118.142	118.150	124.755	124.774	126.767	127.012
.28402E+09	120.905	120.913	127.268	127.287	129.201	129.440
.31558E+09	123.250	123.257	129.390	129.408	131.253	131.485
.63115E+09	136.670	136.675	141.243	141.257	142.625	142.808
.94673E+09	144.280	144.284	147.804	147.815	148.868	149.013
.12623E+10	148.349	148.352	151.124	151.133	151.962	152.078
.15779E+10	150.329	150.331	152.544	152.551	153.213	153.306
.18935E+10	151.106	151.108	152.894	152.900	153.436	153.511
.22090E+10	151.368	151.369	152.824	152.828	153.265	153.326
.25246E+10	150.869	150.870	152.067	152.071	152.431	152.481
.28402E+10	150.327	150.328	151.322	151.325	151.625	151.666
.31558E+10	149.829	149.830	150.663	150.666	150.917	150.952
.63115E+10	146.462	146.463	146.725	146.726	146.806	146.817
.94673E+10	143.412	143.412	143.591	143.592	143.646	143.654
.12623E+11	141.703	141.703	141.848	141.849	141.893	141.898

.15779E+11	140.222	140.222	140.342	140.342	140.379	140.384
.18935E+11	138.480	138.480	138.579	138.580	138.610	138.614
.22090E+11	136.860	136.860	136.943	136.943	136.968	136.971
.25246E+11	135.417	135.417	135.485	135.485	135.506	135.508
.28402E+11	134.094	134.094	134.151	134.151	134.168	134.170
.31558E+11	132.920	132.920	132.967	132.967	132.982	132.984

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:42 NOV 03, 1995 CP= 36536.800
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.8413	116.251	124.093	125.152	117.192	98.1825
.20000E-05	99.8388	116.248	124.090	125.149	117.189	98.1794
.31558E+07	106.892	122.212	129.536	130.467	122.922	105.098
.63116E+07	109.865	124.511	131.517	132.382	125.117	108.048
.94673E+07	111.725	125.833	132.585	133.405	126.373	109.913
.12623E+08	113.068	126.717	133.254	134.037	127.208	111.270
.15779E+08	114.112	127.358	133.705	134.459	127.810	112.333
.18935E+08	114.967	127.852	134.030	134.757	128.271	113.208
.22090E+08	115.695	128.253	134.277	134.981	128.645	113.958
.25246E+08	116.354	128.616	134.501	135.184	128.984	114.638
.28402E+08	116.960	128.950	134.706	135.371	129.296	115.264
.31558E+08	117.532	129.270	134.907	135.555	129.597	115.856
.63115E+08	122.735	132.742	137.560	138.088	132.943	121.208
.94673E+08	127.592	136.635	140.994	141.452	136.763	126.150
.12623E+09	131.566	139.999	144.066	144.480	140.082	130.180
.15779E+09	135.004	142.990	146.845	147.226	143.042	133.662
.18935E+09	138.009	145.639	149.322	149.677	145.666	136.705
.22090E+09	140.650	147.976	151.513	151.847	147.984	139.380
.25246E+09	143.047	150.105	153.516	153.832	150.099	141.809
.28402E+09	144.893	151.719	155.018	155.319	151.701	143.686
.31558E+09	146.419	153.035	156.234	156.522	153.009	145.240
.63115E+09	154.064	159.145	161.609	161.817	159.090	153.128
.94673E+09	157.762	161.758	163.699	163.858	161.701	157.014
.12623E+10	159.010	162.199	163.752	163.878	162.149	158.409
.15779E+10	158.871	161.444	162.698	162.800	161.402	158.384
.18935E+10	158.026	160.121	161.144	161.227	160.087	157.629
.22090E+10	157.016	158.733	159.572	159.641	158.706	156.691
.25246E+10	155.529	156.950	157.645	157.703	156.928	155.261
.28402E+10	154.204	155.388	155.968	156.017	155.371	153.980
.31558E+10	153.083	154.078	154.566	154.607	154.064	152.895
.63115E+10	147.495	147.812	147.968	147.982	147.809	147.435
.94673E+10	144.118	144.335	144.442	144.451	144.333	144.078
.12623E+11	142.274	142.449	142.536	142.544	142.448	142.242
.15779E+11	140.694	140.838	140.910	140.916	140.837	140.667
.18935E+11	138.871	138.991	139.050	139.056	138.990	138.849
.22090E+11	137.184	137.284	137.333	137.338	137.284	137.166
.25246E+11	135.685	135.768	135.808	135.812	135.767	135.670
.28402E+11	134.317	134.386	134.419	134.423	134.386	134.305
.31558E+11	133.105	133.162	133.190	133.193	133.162	133.095

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:42 NOV 03, 1995 CP= 36536.810
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.4921	60.6110	59.8463	31.4244
.20000E-05	97.4890	60.6097	59.8450	31.4244
31.558	97.4890	60.6095	59.8448	31.4244
.31558E+07	104.429	70.9334	70.1863	44.5454
.63116E+07	107.398	75.8365	75.1090	51.0661
.94673E+07	109.281	79.1845	78.4757	55.6442
.12623E+08	110.656	81.7734	81.0822	59.2522
.15779E+08	111.734	83.8961	83.2211	62.2486
.18935E+08	112.623	85.7034	85.0436	64.8215
.22090E+08	113.385	87.2871	86.6413	67.0873
.25246E+08	114.077	88.7162	88.0833	69.1249
.28402E+08	114.715	90.0247	89.4038	70.9850
.31558E+08	115.317	91.2416	90.6316	72.7049
.63115E+08	120.737	100.807	100.275	85.5839
.94673E+08	125.715	108.028	107.536	94.5572
.12623E+09	129.766	113.475	113.008	101.081
.15779E+09	133.263	117.981	117.531	106.358
.18935E+09	136.319	121.836	121.400	110.820
.22090E+09	139.004	125.190	124.766	114.681
.25246E+09	141.442	128.210	127.798	118.142
.28402E+09	143.328	130.594	130.193	120.905
.31558E+09	144.891	132.601	132.210	123.250
.63115E+09	152.850	143.646	143.337	136.670
.94673E+09	156.792	149.663	149.417	144.280
.12623E+10	158.230	152.591	152.394	148.349
.15779E+10	158.240	153.716	153.558	150.329
.18935E+10	157.513	153.843	153.715	151.106
.22090E+10	156.596	153.596	153.492	151.368
.25246E+10	155.183	152.704	152.618	150.869
.28402E+10	153.916	151.851	151.780	150.327
.31558E+10	152.842	151.106	151.047	149.829
.63115E+10	147.419	146.865	146.847	146.462
.94673E+10	144.066	143.687	143.674	143.412
.12623E+11	142.233	141.925	141.915	141.703
.15779E+11	140.660	140.406	140.397	140.222
.18935E+11	138.843	138.632	138.625	138.480
.22090E+11	137.161	136.986	136.981	136.860
.25246E+11	135.666	135.521	135.516	135.417
.28402E+11	134.302	134.181	134.177	134.094
.31558E+11	133.093	132.992	132.989	132.920

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 36537.020 TIME= 03:40:42
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose
 VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose
 VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose
 VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose
 VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9786 TEMP	ot4oose	34.44	31.56	151.5	.2209E+10
3 NSOL	9777 TEMP	ot4iose	34.53	31.56	151.6	.2209E+10
4 NSOL	9477 TEMP	it4oose	36.09	31.56	151.7	.2209E+10
5 NSOL	9318 TEMP	it4iose	36.05	31.56	151.7	.2209E+10
6 NSOL	8540 TEMP	st4oose	43.07	31.56	152.0	.2209E+10
7 NSOL	8497 TEMP	st4iose	43.10	31.56	152.0	.2209E+10
8 NSOL	8460 TEMP	ht4iose	67.13	31.56	153.9	.1893E+10
9 NSOL	8461 TEMP	gt4iose	81.47	31.56	155.4	.1578E+10
10 NSOL	7927 TEMP	c04iose	86.09	31.56	156.0	.1578E+10
11 NSOL	7929 TEMP	gb4iose	87.53	31.56	156.1	.1578E+10
12 NSOL	7930 TEMP	gb4hose	84.32	31.56	155.7	.1578E+10
13 NSOL	7928 TEMP	sb4iose	75.00	31.56	154.4	.1578E+10
14 NSOL	7991 TEMP	sb4oose	74.86	31.56	154.4	.1578E+10
15 NSOL	8787 TEMP	ib4iose	52.64	31.56	152.7	.1893E+10
16 NSOL	8902 TEMP	ib4oose	52.43	31.56	152.7	.1893E+10
17 NSOL	9786 TEMP	ob4oose	34.44	31.56	151.5	.2209E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:45 NOV 03, 1995 CP= 36540.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.4377	34.5281	36.0894	36.0490	43.0742	43.1045
.20000E-05	34.4376	34.5279	36.0893	36.0489	43.0737	43.1040
31.558	34.4375	34.5279	36.0892	36.0488	43.0736	43.1039
.31558E+07	47.2121	47.2948	48.7175	48.6819	54.6989	54.7248
.63116E+07	53.5410	53.6191	54.9593	54.9265	60.4307	60.4543
.94673E+07	57.9767	58.0512	59.3278	59.2970	64.4359	64.4579
.12623E+08	61.4687	61.5402	62.7637	62.7346	67.5828	67.6036
.15779E+08	64.3670	64.4359	65.6137	65.5860	70.1930	70.2127
.18935E+08	66.8549	66.9215	68.0590	68.0325	72.4335	72.4523
.22090E+08	69.0455	69.1101	70.2117	70.1863	74.4074	74.4254
.25246E+08	71.0166	71.0793	72.1487	72.1242	76.1870	76.2043
.28402E+08	72.8165	72.8776	73.9178	73.8942	77.8153	77.8320
.31558E+08	74.4819	74.5414	75.5549	75.5321	79.3252	79.3413
.63115E+08	87.0050	87.0545	87.8920	87.8744	90.8440	90.8562
.94673E+08	95.7932	95.8374	96.5831	96.5682	99.1136	99.1238
.12623E+09	102.205	102.246	102.935	102.921	105.210	105.219
.15779E+09	107.400	107.438	108.084	108.072	110.179	110.187
.18935E+09	111.798	111.834	112.447	112.436	114.402	114.409

.22090E+09	115.606	115.641	116.225	116.215	118.066	118.072
.25246E+09	119.021	119.055	119.615	119.605	121.358	121.364
.28402E+09	121.746	121.779	122.318	122.309	123.979	123.985
.31558E+09	124.057	124.088	124.609	124.600	126.200	126.205
.63115E+09	137.255	137.278	137.667	137.661	138.803	138.806
.94673E+09	144.723	144.742	145.041	145.037	145.897	145.900
.12623E+10	148.696	148.710	148.946	148.943	149.612	149.614
.15779E+10	150.604	150.616	150.805	150.802	151.334	151.335
.18935E+10	151.328	151.337	151.490	151.488	151.916	151.918
.22090E+10	151.548	151.556	151.680	151.678	152.028	152.028
.25246E+10	151.017	151.024	151.126	151.125	151.413	151.413
.28402E+10	150.451	150.456	150.541	150.540	150.779	150.780
.31558E+10	149.933	149.937	150.009	150.008	150.209	150.210
.63115E+10	146.495	146.497	146.519	146.519	146.583	146.584
.94673E+10	143.434	143.435	143.451	143.450	143.495	143.495
.12623E+11	141.721	141.722	141.735	141.734	141.771	141.771
.15779E+11	140.238	140.238	140.248	140.248	140.278	140.278
.18935E+11	138.493	138.493	138.502	138.502	138.527	138.527
.22090E+11	136.871	136.871	136.878	136.878	136.899	136.899
.25246E+11	135.425	135.426	135.431	135.431	135.449	135.449
.28402E+11	134.102	134.102	134.107	134.107	134.121	134.121
.31558E+11	132.926	132.927	132.931	132.931	132.943	132.943

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:45 NOV 03, 1995 CP= 36540.160
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1293	81.4763	86.0963	87.5335	84.3241	74.9991
.20000E-05	67.1278	81.4742	86.0938	87.5309	84.3216	74.9969
31.558	67.1277	81.4742	86.0938	87.5309	84.3216	74.9968
.31558E+07	76.1284	89.2065	93.3997	94.6669	91.6813	83.0745
.63116E+07	80.4188	92.7570	96.7078	97.8854	95.0386	86.8675
.94673E+07	83.3546	95.1282	98.8967	100.010	97.2721	89.4418
.12623E+08	85.6295	96.9329	100.551	101.611	98.9667	91.4246
.15779E+08	87.4991	98.3970	101.885	102.902	100.339	93.0477
.18935E+08	89.0953	99.6351	103.009	103.988	101.498	94.4297
.22090E+08	90.4977	100.717	103.989	104.934	102.510	95.6427
.25246E+08	91.7679	101.699	104.879	105.794	103.430	96.7442
.28402E+08	92.9349	102.603	105.700	106.588	104.278	97.7587
.31558E+08	94.0239	103.451	106.471	107.334	105.076	98.7087
.63115E+08	102.744	110.540	113.037	113.732	111.826	106.503
.94673E+08	109.509	116.410	118.613	119.215	117.511	112.768
.12623E+09	114.674	121.013	123.032	123.577	122.002	117.624
.15779E+09	118.975	124.908	126.792	127.296	125.817	121.705
.18935E+09	122.673	128.284	130.062	130.533	129.129	125.229
.22090E+09	125.902	131.243	132.932	133.376	132.037	128.315
.25246E+09	128.818	133.925	135.536	135.958	134.674	131.109
.28402E+09	131.124	136.031	137.577	137.979	136.744	133.312
.31558E+09	133.067	137.797	139.286	139.671	138.479	135.166
.63115E+09	143.819	147.332	148.434	148.712	147.817	145.335
.94673E+09	149.725	152.434	153.281	153.493	152.799	150.876
.12623E+10	152.615	154.752	155.421	155.587	155.037	153.515
.15779E+10	153.731	155.443	155.980	156.113	155.670	154.449
.18935E+10	153.856	155.245	155.681	155.789	155.429	154.438
.22090E+10	153.611	154.746	155.103	155.192	154.897	154.086
.25246E+10	152.721	153.660	153.956	154.030	153.785	153.115
.28402E+10	151.869	152.652	152.899	152.961	152.757	152.198
.31558E+10	151.125	151.783	151.991	152.043	151.871	151.402
.63115E+10	146.876	147.087	147.154	147.171	147.116	146.966
.94673E+10	143.697	143.842	143.888	143.900	143.862	143.759

.12623E+11	141.934	142.052	142.090	142.099	142.068	141.985
.15779E+11	140.414	140.511	140.542	140.550	140.525	140.456
.18935E+11	138.640	138.720	138.747	138.753	138.732	138.674
.22090E+11	136.993	137.060	137.082	137.088	137.070	137.022
.25246E+11	135.527	135.583	135.601	135.606	135.591	135.551
.28402E+11	134.186	134.233	134.248	134.252	134.239	134.206
.31558E+11	132.997	133.036	133.048	133.051	133.041	133.014

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:45 NOV 03, 1995 CP= 36540.170
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	74.8595	52.6425	52.4266	34.4377
.20000E-05	74.8573	52.6415	52.4256	34.4376
31.558	74.8572	52.6413	52.4254	34.4375
.31558E+07	82.9406	63.2563	63.0475	47.2121
.63116E+07	86.7381	68.4158	68.2132	53.5410
.94673E+07	89.3164	71.9926	71.7954	57.9767
.12623E+08	91.3026	74.7890	74.5968	61.4687
.15779E+08	92.9288	77.1005	76.9130	64.3670
.18935E+08	94.3139	79.0806	78.8973	66.8549
.22090E+08	95.5296	80.8233	80.6439	69.0455
.25246E+08	96.6336	82.3970	82.2212	71.0166
.28402E+08	97.6504	83.8389	83.6664	72.8165
.31558E+08	98.6026	85.1789	85.0095	74.4819
.63115E+08	106.412	95.5751	95.4270	87.0050
.94673E+08	112.684	103.250	103.114	95.7932
.12623E+09	117.545	108.980	108.852	102.205
.15779E+09	121.629	113.688	113.565	107.400
.18935E+09	125.157	117.705	117.587	111.798
.22090E+09	128.245	121.199	121.084	115.606
.25246E+09	131.040	124.343	124.232	119.021
.28402E+09	133.246	126.840	126.732	121.746
.31558E+09	135.101	128.951	128.846	124.057
.63115E+09	145.285	140.814	140.732	137.255
.94673E+09	150.836	147.432	147.367	144.723
.12623E+10	153.483	150.815	150.763	148.696
.15779E+10	154.424	152.293	152.251	150.604
.18935E+10	154.417	152.691	152.658	151.328
.22090E+10	154.069	152.659	152.632	151.548
.25246E+10	153.101	151.934	151.911	151.017
.28402E+10	152.186	151.213	151.194	150.451
.31558E+10	151.392	150.573	150.558	149.933
.63115E+10	146.963	146.699	146.694	146.495
.94673E+10	143.756	143.575	143.571	143.434
.12623E+11	141.983	141.835	141.833	141.721
.15779E+11	140.454	140.332	140.329	140.238
.18935E+11	138.673	138.571	138.569	138.493
.22090E+11	137.021	136.936	136.935	136.871
.25246E+11	135.550	135.479	135.478	135.425
.28402E+11	134.206	134.147	134.146	134.102
.31558E+11	133.013	132.964	132.963	132.926

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 36540.370 TIME= 03:40:46
 NSOL command erases all previously stored or calculated data

unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose
 VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose
 VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose
 VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2874 TEMP	otwoose	34.89	31.56	151.6	.2209E+10
3 NSOL	2610 TEMP	otwiose	35.27	31.56	151.6	.2209E+10
4 NSOL	2556 TEMP	itwoose	35.64	31.56	151.6	.2209E+10
5 NSOL	2504 TEMP	itwiose	35.96	31.56	151.7	.2209E+10
6 NSOL	563 TEMP	stwoose	38.98	31.56	151.9	.2209E+10
7 NSOL	2186 TEMP	stwiose	39.26	31.56	151.9	.2209E+10
8 NSOL	2150 TEMP	htwiose	48.39	31.56	152.5	.1893E+10
9 NSOL	2151 TEMP	gtwiose	53.55	31.56	153.0	.1893E+10
10 NSOL	126 TEMP	c0wiose	56.96	31.56	153.3	.1893E+10
11 NSOL	2085 TEMP	gbwiose	58.03	31.56	153.3	.1893E+10
12 NSOL	2086 TEMP	gbwoose	56.07	31.56	153.1	.1893E+10
13 NSOL	2084 TEMP	sbwiose	52.83	31.56	152.7	.1893E+10
14 NSOL	660 TEMP	sbwoose	52.69	31.56	152.7	.1893E+10
15 NSOL	2236 TEMP	ibwiose	52.48	31.56	152.7	.1893E+10
16 NSOL	2272 TEMP	ibwoose	52.29	31.56	152.7	.1893E+10
17 NSOL	2874 TEMP	obwoose	34.89	31.56	151.6	.2209E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:49 NOV 03, 1995 CP= 36543.500
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwiose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	34.8949	35.2694	35.6430	35.9630	38.9767	39.2576
.20000E-05	34.8948	35.2693	35.6429	35.9628	38.9765	39.2574

31.558	34.8947	35.2692	35.6428	35.9628	38.9764	39.2573
.31558E+07	47.6364	47.9793	48.3205	48.6120	51.3135	51.5661
.63116E+07	53.9438	54.2678	54.5896	54.8642	57.3888	57.6252
.94673E+07	58.3623	58.6714	58.9782	59.2399	61.6314	61.8556
.12623E+08	61.8397	62.1364	62.4306	62.6814	64.9637	65.1778
.15779E+08	64.7253	65.0112	65.2946	65.5360	67.7250	67.9305
.18935E+08	67.2017	67.4781	67.7520	67.9852	70.0929	70.2909
.22090E+08	69.3821	69.6500	69.9153	70.1412	72.1767	72.3680
.25246E+08	71.3439	71.6042	71.8619	72.0811	74.0524	74.2378
.28402E+08	73.1354	73.3888	73.6395	73.8528	75.7659	75.9460
.31558E+08	74.7930	75.0401	75.2845	75.4923	77.3525	77.5276
.63115E+08	87.2647	87.4700	87.6724	87.8443	89.3567	89.4995
.94673E+08	96.0257	96.2092	96.3898	96.5429	97.8724	97.9983
.12623E+09	102.421	102.591	102.758	102.899	104.116	104.231
.15779E+09	107.603	107.762	107.919	108.051	109.187	109.295
.18935E+09	111.990	112.142	112.291	112.416	113.488	113.590
.22090E+09	115.790	115.935	116.077	116.197	117.215	117.312
.25246E+09	119.198	119.337	119.473	119.588	120.561	120.653
.28402E+09	121.916	122.050	122.181	122.292	123.226	123.314
.31558E+09	124.222	124.351	124.477	124.584	125.483	125.569
.63115E+09	137.378	137.475	137.569	137.649	138.311	138.374
.94673E+09	144.818	144.893	144.967	145.028	145.535	145.583
.12623E+10	148.771	148.830	148.887	148.936	149.334	149.372
.15779E+10	150.664	150.711	150.758	150.796	151.113	151.144
.18935E+10	151.376	151.415	151.452	151.483	151.739	151.764
.22090E+10	151.588	151.619	151.649	151.675	151.883	151.903
.25246E+10	151.050	151.075	151.100	151.121	151.293	151.310
.28402E+10	150.477	150.499	150.519	150.537	150.680	150.693
.31558E+10	149.956	149.973	149.991	150.005	150.125	150.137
.63115E+10	146.502	146.508	146.514	146.518	146.556	146.560
.94673E+10	143.439	143.443	143.447	143.450	143.476	143.478
.12623E+11	141.725	141.728	141.731	141.734	141.755	141.757
.15779E+11	140.241	140.243	140.246	140.248	140.265	140.267
.18935E+11	138.496	138.498	138.500	138.501	138.516	138.517
.22090E+11	136.873	136.875	136.877	136.878	136.890	136.891
.25246E+11	135.427	135.429	135.430	135.431	135.441	135.442
.28402E+11	134.103	134.104	134.106	134.107	134.115	134.116
.31558E+11	132.928	132.929	132.930	132.931	132.937	132.938

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:49 NOV 03, 1995 CP= 36543.510
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.3904	53.5539	56.9585	58.0315	56.0707	52.8338
.20000E-05	48.3896	53.5529	56.9573	58.0302	56.0695	52.8328
31.558	48.3895	53.5528	56.9571	58.0300	56.0693	52.8326
.31558E+07	59.7502	64.3863	67.4250	68.3171	66.4743	63.4654
.63116E+07	65.2724	69.6093	72.4447	73.2488	71.4893	68.6284
.94673E+07	69.0995	73.2118	75.8960	76.6394	74.9482	72.2054
.12623E+08	72.0903	76.0177	78.5782	79.2743	77.6424	75.0004
.15779E+08	74.5606	78.3302	80.7855	81.4430	79.8635	77.3100
.18935E+08	76.6745	80.3064	82.6701	83.2949	81.7624	79.2878
.22090E+08	78.5329	82.0423	84.3249	84.9213	83.4315	81.0281
.25246E+08	80.2078	83.6080	85.8183	86.3899	84.9388	82.5995
.28402E+08	81.7397	85.0411	87.1861	87.7355	86.3198	84.0392
.31558E+08	83.1607	86.3720	88.4574	88.9869	87.6038	85.3771
.63115E+08	94.0751	96.6913	98.3840	98.7855	97.6231	95.7594
.94673E+08	102.017	104.315	105.796	106.132	105.092	103.428
.12623E+09	107.901	110.004	111.358	111.655	110.692	109.154
.15779E+09	112.717	114.680	115.942	116.212	115.305	113.858

.18935E+09	116.817	118.670	119.861	120.110	119.248	117.873
.22090E+09	120.377	122.139	123.270	123.503	122.678	121.363
.25246E+09	123.578	125.261	126.341	126.559	125.767	124.505
.28402E+09	126.121	127.736	128.772	128.979	128.215	127.000
.31558E+09	128.270	129.825	130.823	131.020	130.281	129.108
.63115E+09	140.359	141.507	142.241	142.378	141.823	140.942
.94673E+09	147.103	147.983	148.546	148.647	148.217	147.535
.12623E+10	150.564	151.256	151.699	151.777	151.437	150.899
.15779E+10	152.095	152.647	153.001	153.062	152.790	152.360
.18935E+10	152.532	152.979	153.264	153.314	153.094	152.746
.22090E+10	152.529	152.893	153.126	153.167	152.988	152.703
.25246E+10	151.826	152.126	152.319	152.352	152.204	151.970
.28402E+10	151.123	151.373	151.533	151.561	151.438	151.243
.31558E+10	150.497	150.707	150.841	150.865	150.761	150.598
.63115E+10	146.674	146.741	146.784	146.791	146.759	146.707
.94673E+10	143.557	143.603	143.632	143.637	143.615	143.580
.12623E+11	141.821	141.858	141.881	141.886	141.868	141.839
.15779E+11	140.319	140.350	140.370	140.373	140.358	140.335
.18935E+11	138.561	138.586	138.603	138.606	138.593	138.574
.22090E+11	136.927	136.948	136.962	136.965	136.954	136.938
.25246E+11	135.472	135.490	135.501	135.503	135.495	135.481
.28402E+11	134.141	134.155	134.164	134.166	134.159	134.148
.31558E+11	132.959	132.971	132.979	132.980	132.974	132.965

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:40:49 NOV 03, 1995 CP= 36543.520
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP sbwoose	2236 TEMP ibwiose	2272 TEMP ibwoose	2874 TEMP obwoose
.10000E-05	52.6953	52.4818	52.2893	34.8949
.20000E-05	52.6944	52.4809	52.2883	34.8948
31.558	52.6942	52.4807	52.2881	34.8947
.31558E+07	63.3314	63.1247	62.9383	47.6364
.63116E+07	68.4984	68.2979	68.1170	53.9438
.94673E+07	72.0789	71.8840	71.7080	58.3623
.12623E+08	74.8773	74.6874	74.5160	61.8397
.15779E+08	77.1899	77.0046	76.8374	64.7253
.18935E+08	79.1704	78.9895	78.8262	67.2017
.22090E+08	80.9133	80.7364	80.5766	69.3821
.25246E+08	82.4871	82.3137	82.1573	71.3439
.28402E+08	83.9289	83.7589	83.6055	73.1354
.31558E+08	85.2688	85.1020	84.9513	74.7930
.63115E+08	95.6648	95.5191	95.3875	87.2647
.94673E+08	103.341	103.207	103.086	96.0257
.12623E+09	109.072	108.946	108.832	102.421
.15779E+09	113.780	113.659	113.550	107.603
.18935E+09	117.797	117.681	117.576	111.990
.22090E+09	121.291	121.178	121.077	115.790
.25246E+09	124.435	124.326	124.228	119.198
.28402E+09	126.931	126.825	126.730	121.916
.31558E+09	129.041	128.938	128.845	124.222
.63115E+09	140.890	140.810	140.738	137.378
.94673E+09	147.494	147.431	147.374	144.818
.12623E+10	150.866	150.815	150.770	148.771
.15779E+10	152.333	152.293	152.256	150.664
.18935E+10	152.724	152.691	152.662	151.376
.22090E+10	152.686	152.659	152.635	151.588
.25246E+10	151.956	151.934	151.914	151.050
.28402E+10	151.231	151.213	151.196	150.477
.31558E+10	150.588	150.573	150.559	149.956
.63115E+10	146.704	146.699	146.695	146.502
.94673E+10	143.578	143.574	143.571	143.439

.12623E+11	141.837	141.835	141.833	141.725
.15779E+11	140.334	140.331	140.329	140.241
.18935E+11	138.573	138.571	138.569	138.496
.22090E+11	136.937	136.936	136.935	136.873
.25246E+11	135.480	135.479	135.478	135.427
.28402E+11	134.147	134.147	134.146	134.103
.31558E+11	132.965	132.964	132.963	132.928

***** ROUTINE COMPLETED ***** CP = 36543.530

End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21b2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21b2.db
FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS= 30529
MAXIMUM RECORD NUMBER = 427
RECORD SIZE (I*4 WORDS) = 16384
PAGE FILE SIZE (MB) = 26.688

```
*-----*
|                                     |
|               ANSYS RUN COMPLETED               |
|-----|
|               REV. 5.0 A               |               HP 9000/7XX               |
| CP TIME      (sec) =    36568.200      | TIME = 03:41:40      |
| ELAPSED TIME (sec) =    61477.000      | DATE  = 11/03/95      |
|-----|
*-----*
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WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glsh21w2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

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 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glsh21w2.inp *
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP *
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat *
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED) *
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: hangls1.dat *
 16 /COM, * Initial Heat Load: 870 W/canister *
 17 /COM, *
 18 /COM, * Surface Temp. file: c21w5a.parm *


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19 /COM, *      25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #1)*
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 45.0 m *
22 /COM, *      WP c/c spacing = 32.3 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,param,
35 /COM, Read in surface temps. from repository model
36 PARRES,CHANGE,c21w5a,param,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 PI=3.141592654
64 SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 *SET,DFRAD,2.5,
73 *SET,INVRT,0.7,
74 *SET,WPSPC,32.3,
75 *SET,OFFST,0.1833,
76 XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLEN = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM,          DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM,          Required ceramic and drum parameters:
102 /COM,          CDRAD = glass radius (m)
103 /COM,          CDHGT = glass hieght; hieght of fill (m)
104 /COM,          DRMIR = SRP Canister inner rad. (m)
105 /COM,          DRMOR = SRP Canister drum outer rad. (m)
106 /COM,          DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM,          DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM,          DRLEN = SRP Canister outer length (m)
109 /COM,          DRILN = SRP Canister Inner length (m)
110 /COM,          DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM,          DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM,          DRMOF = SRP Canister center line off set (m)
113 /COM,          PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM,          FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM,          Define Extrude Distances as required:
130 /COM,          Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM,          Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM,          *****
146 /COM,          Define calculated parameters
147 /COM,          ASSY = assembly heat production (W) f(yrs)
148 /COM,          FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM,          *****
154 /COM,          Define 45 degree point of reference:
155 /COM,          TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM,          TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM,          HCI45 = x coord. WP Center Line side of center Glass at
158 /COM,          HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM,          CCO45 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM,          SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM,          SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM,          MI45 = x coord. DCIRD at 45 deg.
163 /COM,          MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM,          DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TCO45=(DRMOF+DRMOR-DRMOR/SQT)
166 TCI45=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CCO45=(DRMOF+DRMOR)
170 SCO45=(DRMOF+DRMOR+DRMOR/SQT)
171 SCI45=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM,          *****
177 /COM,          Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM,          *****
194 /COM,          File props01.dat describes material properties
195 /COM,          and thier reference numbers
196 MPREAD,propsd1,dat,
197 /COM,          *****
198 /COM,          Define new material 15 for low thermal loading
199 /COM,          outer barrier of 70/30 Copper Nickel (C71500)
200 /COM,          Density:      DENS      (kg/m^3)
201 /COM,          Emissivity:    EMIS
202 /COM,          Conductivity:  KXX      (W/m/K)
203 /COM,          Specific Heat: C      (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM,          Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM,          Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM,          Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM,          Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7, (5.0/9.0*(1112.0-32.0)), (5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM,          *****
223 /COM,          Read in single drum heat loads
224 /COM,          Calculate the volumetric heat generation
225 /COM,          (Assembly time is in years, FUEL is in seconds)
226 /INPUT,hangls1,dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLUME),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0.0,0.0,0.0,45.0,0.0,0.0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9, 10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5, 10, 15, 11,
274 AL, 8, 9, 16, 10,
275 AL, 7, 12, 13, 9,
276 AL, 6, 11, 14, 12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, MI45, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, MO45, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, DO45, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM, Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM, Mesh areas
341 /COM, glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM, Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM, (K's 20 - 31)
360 /COM, (L's 35 - 46)
361 /COM, Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM,      Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM,      *****
388 /COM,      Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM,      GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM,      Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM,      Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM,      Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM,      Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM,      Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM,      Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM,      *****
421 /COM,      Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM,      *****
425 /COM,      Set up drift wall radiation matrix
426 /COM,      (K's 32 - 34)
427 /COM,      1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST,      0.0,
429 K,33, 0.0, OFFST,      (WPSPC/2.0),
430 K,34, 0.0, OFFST,      -1*(WPSPC/2.0),
431 /COM,      Define extrude lines (will not use)
432 /COM,      (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM,      Extrude drift 8 elements with smallest
436 /COM,      elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),      YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WSPSP/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WSPSP/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WSPSP/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WSPSP/2.0),
466 K,44, (0.0-XXX),      YYY, -1*(WSPSP/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WSPSP/2.0),
482 K,46,                DFRAD,                OFFST, (WSPSP/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WSPSP/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WSPSP/2.0),
485 K,49, (0.0-XXX),      YYY, (WSPSP/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,,83,84,1,
614 LSEL,A,LINE,,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,,
637 VDRAG, 9,10,11,12,,,35,36,,,,
638 VDRAG,13,14,,,,,35,36,,,,
639 VDRAG,15,16,,,,,35,36,,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,,
646 VDRAG,13,14,,,,,40,41,42,,,,
647 VDRAG,15,16,,,,,40,41,42,,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0,0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0,0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0,0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM, *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM, *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM, *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrccangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obrdwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrccangap,
1140 SE,obrdwgap,
1141 /COM,          Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM,          *****
1151 /COM,          Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM,          *****
1156 /COM,          GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM,          DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM,          This section used only if both rad. and He conducti
1159 /COM,          is used in the model.
1160 /COM,          He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM,          Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM,          He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM,          Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM,          He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,4,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TMEO,TMIO
1342 TIME,TM,
1343 VSEL,S,MAT,,5,
1344 ESLV,S,
1345 BFE,ALL,HGEN,,(FUEL(TM)),
1346 VSEL,ALL
1347 ESEL,ALL
1348 ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359 *ENDDO
1360 /COM,          Apply loads and solve for 1 to 9 years
1361 *DO,TM,TME1,TME9,TM11
1362      TIME,TM,
1363      VSEL,S,MAT,,5,
1364      ESLV,S,
1365      BFE,ALL,HGEN,,(FUEL(TM)),
1366      VSEL,ALL
1367      ESEL,ALL
1368      ASEL,S,AREA,,17,26,1
1369      NSLA,S,1,
1370      DDELE,ALL,TEMP,
1371      ASEL,ALL,
1372      NSEL,ALL,
1373      ASEL,S,AREA,,17,26,1
1374      NSLA,S,1,
1375      D,ALL,TEMP,(DFSID(TM)),
1376      ASEL,ALL,
1377      NSEL,ALL,
1378      SOLVE
1379 *ENDDO
1380 /COM,          Apply loads and solve for 10 to 90 years
1381 *DO,TM,TME10,TME90,TM110
1382      TIME,TM,
1383      VSEL,S,MAT,,5,
1384      ESLV,S,
1385      BFE,ALL,HGEN,,(FUEL(TM)),
1386      VSEL,ALL
1387      ESEL,ALL
1388      ASEL,S,AREA,,17,26,1
1389      NSLA,S,1,
1390      DDELE,ALL,TEMP,
1391      ASEL,ALL,
1392      NSEL,ALL,
1393      ASEL,S,AREA,,17,26,1
1394      NSLA,S,1,
1395      D,ALL,TEMP,(DFSID(TM)),
1396      ASEL,ALL,
1397      NSEL,ALL,
1398      SOLVE
1399 *ENDDO
1400 /COM,          Apply loads and solve for 100 to 1000 years
1401 *DO,TM,TME100,TME1000,TM1100
1402      TIME,TM,
1403      VSEL,S,MAT,,5,
1404      ESLV,S,
1405      BFE,ALL,HGEN,,(FUEL(TM)),
1406      VSEL,ALL
1407      ESEL,ALL
1408      ASEL,S,AREA,,17,26,1
1409      NSLA,S,1,
1410      DDELE,ALL,TEMP,
1411      ASEL,ALL,
1412      NSEL,ALL,
1413      ASEL,S,AREA,,17,26,1
1414      NSLA,S,1,
1415      D,ALL,TEMP,(DFSID(TM)),
1416      ASEL,ALL,
1417      NSEL,ALL,
1418      SOLVE

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1419 *ENDDDO
1420 FINISH
1421 /COM, *****
1422 /COM,      Create element contour plots of solution results
1423 /COM,
1424 /COM,      Sort through solution results for time of max temp.
1425 /POST26,
1426 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1427 STORE,NEW,
1428 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1429 FINISH
1430 /POST1,
1431 /COM,      Create temperature contour plots of WP at peak
1432 /RESET,
1433 /TYPE,,HIDP,
1434 /VIEW,1,1,1,1,
1435 /DIST,1,3,0,
1436 /NUM, 1,
1437 /GLINE,,-1,
1438 /TRIAD,OFF,
1439 /PNUM,MAT , 1,
1440 VSEL,S,MAT,,1,5,4
1441 CSYS,31,
1442 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1443 VSEL,U,LOC,Y,-45.0,135.0,
1444 CSYS,0,
1445 ESLV,S
1446 VSEL,S,MAT,,1,5,4
1447 CSYS,32,
1448 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1449 VSEL,U,LOC,Y,-45.0,45.0,
1450 CSYS,0,
1451 ESLV,A
1452 VSEL,S,LOC,X,-100.0,0.0,
1453 ESLV,A
1454 ASEL,S,AREA,,17,26,1
1455 ASEL,R,LOC,X,-100.0,0.0,
1456 ESLA,A
1457 SET,NEAR,,,,TMTMAX,
1458 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1459 /SHOW,solupk,grph,0,8,
1460 /CONTOUR,1,128,AUTO,
1461 PLNSOL,TEMP,
1462 /COM,      Create temperature contour plots at 5, 10, 50, and 100 yrs
1463 SET,NEAR,,,,(TM_START+(5*TMI1)),
1464 /TITLE, DHLW WP at 5 years
1465 /SHOW,solu5,grph,0,8,
1466 /CONTOUR,1,128,USER,
1467 PLNSOL,TEMP,
1468 SET,NEAR,,,,TME10,
1469 /TITLE, DHLW WP at 10 years
1470 /SHOW,solu10,grph,0,8,
1471 /CONTOUR,1,128,USER,
1472 PLNSOL,TEMP,
1473 SET,NEAR,,,,TME50,
1474 /TITLE, DHLW WP at 50 years
1475 /SHOW,solu50,grph,0,8,
1476 /CONTOUR,1,128,USER,
1477 PLNSOL,TEMP,
1478 SET,NEAR,,,,TME100,
1479 /TITLE, DHLW WP at 100 years
1480 /SHOW,solu100,grph,0,8,
1481 /CONTOUR,1,128,USER,
1482 PLNSOL,TEMP,
1483 ESEL,ALL,
1484 FINISH
1485 /COM, *****
1486 /COM,      Print time/temperature output at specific locations
1487 /COM,      Save profile from center to edge
1488 /COM,

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1489 /COM,          Variable Legend: A01i000
1490 /COM,          t = structural stainless Canister near center line
1491 /COM,          c = center of Glass log
1492 /COM,          h = halfway between center and Canister
1493 /COM,          s = structural stainless Canister
1494 /COM,          i = inner barrier of DC
1495 /COM,          o = outer barrier of DC
1496 /COM,          ## = cartesian quadrant number of Canister
1497 /COM,          i = side of assembly toward center of WP
1498 /COM,          o = side of assembly toward edge of WP
1499 /COM,          045 = profile 45 deg down
1500 /COM,          135 = profile 45 deg up
1501 /POST26,
1502 NUMVAR,32,
1503 /COM,          *****
1504 /COM,          *Temperature Profile from center to lower right (45 deg.) z=2/3*
1505 /COM,          *****
1506 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1507 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1508 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1509 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1510 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1511 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1512 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1513 NSOL, 9,(NODE(MI45, (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1514 NSOL,10,(NODE(MO45, (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1515 NSOL,11,(NODE(DO45, (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1516 PRVAR, 2, 3, 4, 5, 6, 7,
1517 PRVAR, 8, 9,10,11,
1518 /COM,          *****
1519 /COM,          * Temperature Profile from center to lower right (45 deg.) *
1520 /COM,          *****
1521 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),0.0)),TEMP,,t04i045,
1522 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),0.0)),TEMP,,t04o045,
1523 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),0.0)),TEMP,,h04i045,
1524 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),0.0)),TEMP,,c04i045,
1525 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),0.0)),TEMP,,h04o045,
1526 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),0.0)),TEMP,,s04i045,
1527 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),0.0)),TEMP,,s04o045,
1528 NSOL, 9,(NODE(MI45, (-1.0*MI45),0.0)),TEMP,,i04i045,
1529 NSOL,10,(NODE(MO45, (-1.0*MO45),0.0)),TEMP,,i04o045,
1530 NSOL,11,(NODE(DO45, (-1.0*DO45),0.0)),TEMP,,o04o045,
1531 PRVAR, 2, 3, 4, 5, 6, 7,
1532 PRVAR, 8, 9,10,11,
1533 /COM,
1534 /COM,          *****
1535 /COM,          * Temperature Profile from center to upper right (135 deg.) *
1536 /COM,          *****
1537 NSOL, 2,(NODE(TCO45, TCO45,0.0)),TEMP,,t01i135,
1538 NSOL, 3,(NODE(TCI45, TCI45,0.0)),TEMP,,t01o135,
1539 NSOL, 4,(NODE(HCI45, HCI45,0.0)),TEMP,,h01i135,
1540 NSOL, 5,(NODE(CCO45, CCO45,0.0)),TEMP,,c01i135,
1541 NSOL, 6,(NODE(HCO45, HCO45,0.0)),TEMP,,h01o135,
1542 NSOL, 7,(NODE(SCI45, SCI45,0.0)),TEMP,,s01i135,
1543 NSOL, 8,(NODE(SCO45, SCO45,0.0)),TEMP,,s01o135,
1544 NSOL, 9,(NODE(MI45, MI45,0.0)),TEMP,,i01i135,
1545 NSOL,10,(NODE(MO45, MO45,0.0)),TEMP,,i01o135,
1546 NSOL,11,(NODE(DO45, DO45,0.0)),TEMP,,o01o135,
1547 PRVAR, 2, 3, 4, 5, 6, 7,
1548 PRVAR, 8, 9,10,11,
1549 /COM,
1550 /COM,          *****
1551 /COM,          * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1552 /COM,          *****
1553 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1554 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1555 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,
1556 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-1*BTPT4))),TEMP,,cb4i045,
1557 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-1*BTPT4))),TEMP,,hb4o045,
1558 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-1*BTPT4))),TEMP,,sb4i045,

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1559 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, , sb4o045,
1560 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, , ib4i045,
1561 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, , ib4o045,
1562 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, , ob4o045,
1563 PRVAR, 2, 3, 4, 5, 6, 7,
1564 PRVAR, 8, 9, 10, 11,
1565 /COM,
1566 /COM,
1567 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1568 /COM,
1569 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, , t01i135,
1570 NSOL, 3, (NODE(      TCI45,      TCI45, (-1*BTPT4))), TEMP, , t01o135,
1571 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, , h01i135,
1572 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, , c01i135,
1573 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, , h01o135,
1574 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, , s01i135,
1575 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, , s01o135,
1576 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, , i01i135,
1577 NSOL, 10, (NODE(      MO45,      MO45, (-1*BTPT4))), TEMP, , i01o135,
1578 NSOL, 11, (NODE(      DO45,      DO45, (-1*BTPT4))), TEMP, , o01o135,
1579 PRVAR, 2, 3, 4, 5, 6, 7,
1580 PRVAR, 8, 9, 10, 11,
1581 /COM,
1582 /COM,
1583 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1584 /COM,
1585 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, , tt4i045,
1586 NSOL, 3, (NODE(      TCI45,      (-1.0*TCI45), TPPT6)), TEMP, , tt4o045,
1587 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, , ht4i045,
1588 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, , ct4i045,
1589 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, , ht4o045,
1590 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, , st4i045,
1591 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, , st4o045,
1592 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, , it4i045,
1593 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), TPPT6)), TEMP, , it4o045,
1594 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), TPPT6)), TEMP, , ot4o045,
1595 PRVAR, 2, 3, 4, 5, 6, 7,
1596 PRVAR, 8, 9, 10, 11,
1597 /COM,
1598 /COM,
1599 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1600 /COM,
1601 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, , t01i135,
1602 NSOL, 3, (NODE(      TCI45,      TCI45, TPPT6)), TEMP, , t01o135,
1603 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, , h01i135,
1604 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, , c01i135,
1605 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, , h01o135,
1606 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, , s01i135,
1607 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, , s01o135,
1608 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, , i01i135,
1609 NSOL, 10, (NODE(      MO45,      MO45, TPPT6)), TEMP, , i01o135,
1610 NSOL, 11, (NODE(      DO45,      DO45, TPPT6)), TEMP, , o01o135,
1611 PRVAR, 2, 3, 4, 5, 6, 7,
1612 PRVAR, 8, 9, 10, 11,
1613 /COM,
1614 /COM,
1615 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1616 /COM,
1617 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, , ot1o135,
1618 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, , ot1i135,
1619 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, , it1o135,
1620 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, , it1i135,
1621 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, , st1o135,
1622 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, , st1i135,
1623 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, , ht1i135,
1624 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, , gt1i135,
1625 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, , c01i135,
1626 NSOL, 11, (NODE(      CCO45,      CCO45,      (-0.33*BTPT4))), TEMP, , gb1i135,
1627 NSOL, 12, (NODE(      CCO45,      CCO45,      (-0.66*BTPT4))), TEMP, , gb1h135,
1628 NSOL, 13, (NODE(      CCO45,      CCO45,      (-1.0*BTPT4))), TEMP, , sb1i135,

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1629 NSOL,14,(NODE(      CCO45,      CCO45,      (-1.0*BTPT3))),TEMP,,sb1o135,
1630 NSOL,15,(NODE(      CCO45,      CCO45,      (-1.0*BTPT2))),TEMP,,ib1i135,
1631 NSOL,16,(NODE(      CCO45,      CCO45,      (-1.0*BTPT1))),TEMP,,ib1o135,
1632 NSOL,17,(NODE(      CCO45,      CCO45,      MIDPT)),TEMP,,ob1o135,
1633 PRVAR, 2, 3, 4, 5, 6, 7,
1634 PRVAR, 8, 9,10,11,12,13,
1635 PRVAR,14,15,16,17,
1636 /COM,
1637 /COM, *****
1638 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1639 /COM, *****
1640 NSOL, 2,(NODE(      CCO45,(-1.0*CCO45),      MIDPT)),TEMP,,ot4o045,
1641 NSOL, 3,(NODE(      CCO45,(-1.0*CCO45),      TPPT1)),TEMP,,ot4i045,
1642 NSOL, 4,(NODE(      CCO45,(-1.0*CCO45),      TPPT2)),TEMP,,it4o045,
1643 NSOL, 5,(NODE(      CCO45,(-1.0*CCO45),      TPPT3)),TEMP,,it4i045,
1644 NSOL, 6,(NODE(      CCO45,(-1.0*CCO45),      TPPT4)),TEMP,,st4o045,
1645 NSOL, 7,(NODE(      CCO45,(-1.0*CCO45),      TPPT5)),TEMP,,st4i045,
1646 NSOL, 8,(NODE(      CCO45,(-1.0*CCO45),      TPPT6)),TEMP,,ht4i045,
1647 NSOL, 9,(NODE(      CCO45,(-1.0*CCO45),      ( 0.5*TPPT6))),TEMP,,gt4i045,
1648 NSOL,10,(NODE(      CCO45,(-1.0*CCO45),      0.0)),TEMP,,c04i045,
1649 NSOL,11,(NODE(      CCO45,(-1.0*CCO45),      (-0.33*BTPT4))),TEMP,,gb4i045,
1650 NSOL,12,(NODE(      CCO45,(-1.0*CCO45),      (-0.66*BTPT4))),TEMP,,gb4h045,
1651 NSOL,13,(NODE(      CCO45,(-1.0*CCO45),      (-1.0*BTPT4))),TEMP,,sb4i045,
1652 NSOL,14,(NODE(      CCO45,(-1.0*CCO45),      (-1.0*BTPT3))),TEMP,,sb4o045,
1653 NSOL,15,(NODE(      CCO45,(-1.0*CCO45),      (-1.0*BTPT2))),TEMP,,ib4i045,
1654 NSOL,16,(NODE(      CCO45,(-1.0*CCO45),      (-1.0*BTPT1))),TEMP,,ib4o045,
1655 NSOL,17,(NODE(      CCO45,(-1.0*CCO45),      MIDPT)),TEMP,,ob4o045,
1656 PRVAR, 2, 3, 4, 5, 6, 7,
1657 PRVAR, 8, 9,10,11,12,13,
1658 PRVAR,14,15,16,17,
1659 /COM,
1660 /COM, *****
1661 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1662 /COM, *****
1663 NSOL, 2,(NODE(      TCO45,      TCO45,      MIDPT)),TEMP,,ot1o1se,
1664 NSOL, 3,(NODE(      TCO45,      TCO45,      TPPT1)),TEMP,,ot1i1se,
1665 NSOL, 4,(NODE(      TCO45,      TCO45,      TPPT2)),TEMP,,it1o1se,
1666 NSOL, 5,(NODE(      TCO45,      TCO45,      TPPT3)),TEMP,,it1i1se,
1667 NSOL, 6,(NODE(      TCO45,      TCO45,      TPPT4)),TEMP,,st1o1se,
1668 NSOL, 7,(NODE(      TCO45,      TCO45,      TPPT5)),TEMP,,st1i1se,
1669 NSOL, 8,(NODE(      TCO45,      TCO45,      TPPT6)),TEMP,,ht1i1se,
1670 NSOL, 9,(NODE(      TCO45,      TCO45,      ( 0.5*TPPT6))),TEMP,,gt1i1se,
1671 NSOL,10,(NODE(      TCO45,      TCO45,      0.0)),TEMP,,c01i1se,
1672 NSOL,11,(NODE(      TCO45,      TCO45,      (-0.33*BTPT4))),TEMP,,gb1i1se,
1673 NSOL,12,(NODE(      TCO45,      TCO45,      (-0.66*BTPT4))),TEMP,,gb1h1se,
1674 NSOL,13,(NODE(      TCO45,      TCO45,      (-1.0*BTPT4))),TEMP,,sb1i1se,
1675 NSOL,14,(NODE(      TCO45,      TCO45,      (-1.0*BTPT3))),TEMP,,sb1o1se,
1676 NSOL,15,(NODE(      TCO45,      TCO45,      (-1.0*BTPT2))),TEMP,,ib1i1se,
1677 NSOL,16,(NODE(      TCO45,      TCO45,      (-1.0*BTPT1))),TEMP,,ib1o1se,
1678 NSOL,17,(NODE(      TCO45,      TCO45,      MIDPT)),TEMP,,ob1o1se,
1679 PRVAR, 2, 3, 4, 5, 6, 7,
1680 PRVAR, 8, 9,10,11,12,13,
1681 PRVAR,14,15,16,17,
1682 /COM,
1683 /COM, *****
1684 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1685 /COM, *****
1686 NSOL, 2,(NODE(      SCO45,      SCO45,      MIDPT)),TEMP,,ot1oose,
1687 NSOL, 3,(NODE(      SCO45,      SCO45,      TPPT1)),TEMP,,ot1i1se,
1688 NSOL, 4,(NODE(      SCO45,      SCO45,      TPPT2)),TEMP,,it1oose,
1689 NSOL, 5,(NODE(      SCO45,      SCO45,      TPPT3)),TEMP,,it1i1se,
1690 NSOL, 6,(NODE(      SCO45,      SCO45,      TPPT4)),TEMP,,st1oose,
1691 NSOL, 7,(NODE(      SCO45,      SCO45,      TPPT5)),TEMP,,st1i1se,
1692 NSOL, 8,(NODE(      SCO45,      SCO45,      TPPT6)),TEMP,,ht1i1se,
1693 NSOL, 9,(NODE(      SCO45,      SCO45,      ( 0.5*TPPT6))),TEMP,,gt1i1se,
1694 NSOL,10,(NODE(      SCO45,      SCO45,      0.0)),TEMP,,c01i1se,
1695 NSOL,11,(NODE(      SCO45,      SCO45,      (-0.33*BTPT4))),TEMP,,gb1i1se,
1696 NSOL,12,(NODE(      SCO45,      SCO45,      (-0.66*BTPT4))),TEMP,,gb1h1se,
1697 NSOL,13,(NODE(      SCO45,      SCO45,      (-1.0*BTPT4))),TEMP,,sb1i1se,
1698 NSOL,14,(NODE(      SCO45,      SCO45,      (-1.0*BTPT3))),TEMP,,sb1oose,

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1699 NSOL,15,(NODE(      SC045,      SC045,      (-1.0*BTPT2))),TEMP,,ib1iose,
1700 NSOL,16,(NODE(      SC045,      SC045,      (-1.0*BTPT1))),TEMP,,ib1oose,
1701 NSOL,17,(NODE(      SC045,      SC045,      MIDPT)),TEMP,,ob1oose,
1702 PRVAR, 2, 3, 4, 5, 6, 7,
1703 PRVAR, 8, 9,10,11,12,13,
1704 PRVAR,14,15,16,17,
1705 /COM,
1706 /COM,
1707 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1708 /COM,
1709 NSOL, 2,(NODE(      TC045,(-1.0*TC045),      MIDPT)),TEMP,,ot4iose,
1710 NSOL, 3,(NODE(      TC045,(-1.0*TC045),      TPPT1)),TEMP,,ot4iise,
1711 NSOL, 4,(NODE(      TC045,(-1.0*TC045),      TPPT2)),TEMP,,it4iose,
1712 NSOL, 5,(NODE(      TC045,(-1.0*TC045),      TPPT3)),TEMP,,it4iise,
1713 NSOL, 6,(NODE(      TC045,(-1.0*TC045),      TPPT4)),TEMP,,st4iose,
1714 NSOL, 7,(NODE(      TC045,(-1.0*TC045),      TPPT5)),TEMP,,st4iise,
1715 NSOL, 8,(NODE(      TC045,(-1.0*TC045),      TPPT6)),TEMP,,ht4iise,
1716 NSOL, 9,(NODE(      TC045,(-1.0*TC045),      ( 0.5*TPPT6))),TEMP,,gt4iise,
1717 NSOL,10,(NODE(      TC045,(-1.0*TC045),      0.0)),TEMP,,c04iise,
1718 NSOL,11,(NODE(      TC045,(-1.0*TC045),      (-0.33*BTPT4))),TEMP,,gb4iise,
1719 NSOL,12,(NODE(      TC045,(-1.0*TC045),      (-0.66*BTPT4))),TEMP,,gb4hise,
1720 NSOL,13,(NODE(      TC045,(-1.0*TC045),      (-1.0*BTPT4))),TEMP,,sb4iise,
1721 NSOL,14,(NODE(      TC045,(-1.0*TC045),      (-1.0*BTPT3))),TEMP,,sb4iose,
1722 NSOL,15,(NODE(      TC045,(-1.0*TC045),      (-1.0*BTPT2))),TEMP,,ib4iise,
1723 NSOL,16,(NODE(      TC045,(-1.0*TC045),      (-1.0*BTPT1))),TEMP,,ib4iose,
1724 NSOL,17,(NODE(      TC045,(-1.0*TC045),      MIDPT)),TEMP,,ob4iose,
1725 PRVAR, 2, 3, 4, 5, 6, 7,
1726 PRVAR, 8, 9,10,11,12,13,
1727 PRVAR,14,15,16,17,
1728 /COM,
1729 /COM,
1730 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1731 /COM,
1732 NSOL, 2,(NODE(      SC045,(-1.0*SC045),      MIDPT)),TEMP,,ot4oose,
1733 NSOL, 3,(NODE(      SC045,(-1.0*SC045),      TPPT1)),TEMP,,ot4ioose,
1734 NSOL, 4,(NODE(      SC045,(-1.0*SC045),      TPPT2)),TEMP,,it4oose,
1735 NSOL, 5,(NODE(      SC045,(-1.0*SC045),      TPPT3)),TEMP,,it4ioose,
1736 NSOL, 6,(NODE(      SC045,(-1.0*SC045),      TPPT4)),TEMP,,st4oose,
1737 NSOL, 7,(NODE(      SC045,(-1.0*SC045),      TPPT5)),TEMP,,st4ioose,
1738 NSOL, 8,(NODE(      SC045,(-1.0*SC045),      TPPT6)),TEMP,,ht4ioose,
1739 NSOL, 9,(NODE(      SC045,(-1.0*SC045),      ( 0.5*TPPT6))),TEMP,,gt4ioose,
1740 NSOL,10,(NODE(      SC045,(-1.0*SC045),      0.0)),TEMP,,c04ioose,
1741 NSOL,11,(NODE(      SC045,(-1.0*SC045),      (-0.33*BTPT4))),TEMP,,gb4ioose,
1742 NSOL,12,(NODE(      SC045,(-1.0*SC045),      (-0.66*BTPT4))),TEMP,,gb4hose,
1743 NSOL,13,(NODE(      SC045,(-1.0*SC045),      (-1.0*BTPT4))),TEMP,,sb4ioose,
1744 NSOL,14,(NODE(      SC045,(-1.0*SC045),      (-1.0*BTPT3))),TEMP,,sb4oose,
1745 NSOL,15,(NODE(      SC045,(-1.0*SC045),      (-1.0*BTPT2))),TEMP,,ib4ioose,
1746 NSOL,16,(NODE(      SC045,(-1.0*SC045),      (-1.0*BTPT1))),TEMP,,ib4oose,
1747 NSOL,17,(NODE(      SC045,(-1.0*SC045),      MIDPT)),TEMP,,ob4oose,
1748 PRVAR, 2, 3, 4, 5, 6, 7,
1749 PRVAR, 8, 9,10,11,12,13,
1750 PRVAR,14,15,16,17,
1751 /COM,
1752 /COM,
1753 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1754 /COM,
1755 NSOL, 2,(NODE(      DCORD,0.0,      MIDPT)),TEMP,,otwoose,
1756 NSOL, 3,(NODE(      DCORD,0.0,      TPPT1)),TEMP,,otwioose,
1757 NSOL, 4,(NODE(      DCORD,0.0,      TPPT2)),TEMP,,itwoose,
1758 NSOL, 5,(NODE(      DCORD,0.0,      TPPT3)),TEMP,,itwioose,
1759 NSOL, 6,(NODE(      DCORD,0.0,      TPPT4)),TEMP,,stwoose,
1760 NSOL, 7,(NODE(      DCORD,0.0,      TPPT5)),TEMP,,stwioose,
1761 NSOL, 8,(NODE(      DCORD,0.0,      TPPT6)),TEMP,,htwioose,
1762 NSOL, 9,(NODE(      DCORD,0.0,      ( 0.5*TPPT6))),TEMP,,gtwioose,
1763 NSOL,10,(NODE(      DCORD,0.0,      0.0)),TEMP,,c0wioose,
1764 NSOL,11,(NODE(      DCORD,0.0,      (-0.33*BTPT4))),TEMP,,gbwioose,
1765 NSOL,12,(NODE(      DCORD,0.0,      (-0.66*BTPT4))),TEMP,,gbwoose,
1766 NSOL,13,(NODE(      DCORD,0.0,      (-1.0*BTPT4))),TEMP,,sbwioose,
1767 NSOL,14,(NODE(      DCORD,0.0,      (-1.0*BTPT3))),TEMP,,sbwoose,
1768 NSOL,15,(NODE(      DCORD,0.0,      (-1.0*BTPT2))),TEMP,,ibwioose,

```

```

1769 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1770 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1771 PRVAR, 2, 3, 4, 5, 6, 7,
1772 PRVAR, 8, 9,10,11,12,13,
1773 PRVAR,14,15,16,17,
1774 FINISH
1775 /COM, *****
1776 /COM, End of batch input file
1777 /COM, *****
1778 SAVE,
1779 /EXIT,
1780 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP     /input,,inp,
ABBREVIATION= X3D     /show,3d,
ABBREVIATION= X11     /show,x11,
ABBREVIATION= VEC     /show,,1,
ABBREVIATION= RAS     /show,,0,

```

ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

 ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

*
 * File name: glsh21w2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 *
 * Material Property file: propsd1.dat *
 *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 *
 *
 * SNF Heat Loads file: hangls1.dat *
 * Initial Heat Load: 870 W/canister *
 *
 * Surface Temp. file: c21w5a.parm *
 * 25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #1)*
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 45.0 m *
 * WP c/c spacing = 32.3 m *
 *

 Increase the number of database pages from 16 (256) to 32 Mb
 DONT DO: /CONFIG,nvpag,512,
 Work space must also be increased (-m 87) For Radiation Matix

TITLE=
 DHLW Glass Form Waste Package

SI UNITS SPECIFIED
 LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT. = AMPS

 Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE *** CP= .670 TIME= 13:50:04
 Restore ANSYS parameters from file= c21w5a.parm.

/INPUT FILE= c21w5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WPSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WPSPC = 32.30000

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01

PARAMETER IWALL = .2000000E-01

PARAMETER DCORD = .8545000
 PARAMETER DCLEN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass hieght; hieght of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:

Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000
 PARAMETER BTPT4 = 1.495000

Top of WP

PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)

FUEL = volumetric heat production (W/m³) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TC045 = x coord. WP Center Line Outer Pour Can. at 45 de

TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de

HCI45 = x coord. WP Center Line side of center Glass at

HCO45 = x coord. WP Edge side of center Glass at 45 deg.

CC045 = x coord. Glass Center Line in Pour Can. at 45 de

SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.

SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.

MI45 = x coord. DCIRD at 45 deg.

MO45 = x coord. DCIRD+IWALL at 45 deg.

DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TC045 = .1094244

PARAMETER TCI45 = .1161419

PARAMETER HCI45 = .2205462

PARAMETER HCO45 = .4293549

PARAMETER CC045 = .3249505

PARAMETER SCO45 = .5404767

PARAMETER SCI45 = .5337592

PARAMETER MI45 = .5547253

PARAMETER MO45 = .5688674

PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 13:50:04 NOV 04, 1995 CP= 1.420

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **
** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSw2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **
** Emissivity EMIS **
** Conductivity: KXX (W/m/K) **
** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1
SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1

SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1	21.11000	37.78000	65.56000
	93.33000	121.1100	148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7	176.6700	204.4400	232.2200
	260.0000	287.7800	315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***

SLOC= 13	343.3300	371.1100	398.8900
	426.6700	454.4400	482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***

SLOC= 19	510.0000	537.7800	565.5600
	593.3300	621.1100	648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***

SLOC= 25	676.6700	704.4400	732.2200
	760.0000	787.7800	815.5600

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 6	
SLOC= 1	13.33000	13.67000	14.19000	14.54000
	15.06000	15.58000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 12	
SLOC= 7	15.92000	16.44000	16.96000	17.31000
	17.83000	18.17000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 18	
SLOC= 13	18.52000	19.04000	19.38000	19.90000
	20.25000	20.77000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 24	
SLOC= 19	21.11000	21.46000	21.98000	22.33000
	22.67000	23.02000		

PROPERTY TABLE KXX MAT=		1	NUM. POINTS= 30	
SLOC= 25	23.54000	23.88000	24.23000	24.58000
	24.92000	25.27000		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 6	
SLOC= 1	481.6800	486.9200	498.0900	499.3800
	509.9800	520.2900		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 12	
SLOC= 7	521.0700	527.3800	536.9200	537.3400
	543.0200	543.3100		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 18	
SLOC= 13	546.9100	552.1400	552.2600	557.2200
	557.2500	565.1100		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 24	
SLOC= 19	565.0100	564.9100	572.3500	572.1400
	574.9200	574.6800		

PROPERTY TABLE C MAT=		1	NUM. POINTS= 30	
SLOC= 25	581.6400	581.3000	583.8600	586.3600
	585.9600	588.3900		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 6	
SLOC= 1	40.84000	41.36000	41.88000	42.23000
	42.23000	42.23000		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 12	
SLOC= 7	42.06000	41.88000	41.36000	41.02000
	40.50000	39.98000		

PROPERTY TABLE KXX MAT=		3	NUM. POINTS= 18	
SLOC= 13	39.29000	38.77000	38.08000	37.56000
	36.69000	36.17000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	24	
SLOC= 19	35.48000	34.61000	33.92000		33.23000
	32.36000	31.50000			

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS=	30	
SLOC= 25	30.29000	28.90000	27.35000		26.48000
	26.13000	26.13000			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	6	
SLOC= 1	428.7200	444.9500	460.9400		476.8700
	486.0800	495.6600			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	12	
SLOC= 7	506.0900	517.0700	525.6400		536.9900
	543.6300	550.6200			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	18	
SLOC= 13	562.2100	577.3200	589.1000		600.5700
	611.3500	629.0900			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	24	
SLOC= 19	645.3200	665.1200	682.0700		694.5200
	724.0700	761.9500			

PROPERTY TABLE C	MAT=	3	NUM. POINTS=	30	
SLOC= 25	806.3100	888.6000	1095.040		1638.780
	808.6800	736.9000			

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	6 ***
SLOC= 1	93.33000	121.1100 148.8900
	176.6700	204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	12 ***
SLOC= 7	260.0000	287.7800 315.5600
	343.3300	371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	18 ***
SLOC= 13	426.6700	454.4400 482.2200
	510.0000	537.7800 565.5600

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	24 ***
SLOC= 19	593.3300	621.1100 648.8900
	676.6700	704.4400 732.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS=	27 ***
SLOC= 25	760.0000	787.7800 815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	6	
SLOC= 1	12.29000	12.63000	13.15000		13.67000
	14.02000	14.54000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	12	
SLOC= 7	14.88000	15.40000	15.75000		16.10000
	16.61000	16.96000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	18	
SLOC= 13	17.31000	17.65000	18.00000		18.52000
	18.86000	19.21000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	24	
SLOC= 19	19.73000	20.08000	20.42000		20.94000
	21.46000	21.98000			

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS=	27	
--------------------	------	---	--------------	----	--

SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 93.33000 121.1100 148.8900
176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 260.0000 287.7800 315.5600
343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***

SLOC= 13 426.6700 454.4400 482.2200
510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6
SLOC= 1 460.6900 477.4200 501.0200 504.6500
498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12
SLOC= 7 536.8800 559.8500 576.8300 576.2100
581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17
SLOC= 13 619.5800 636.7600 654.2000 678.2500
696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 1 25.00000 50.00000 94.00000
95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 5 105.0000 114.0000 115.0000
155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***

SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4
SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8
SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11
SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, ~10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 -13.15000 6.850000 26.85000
76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 226.8500 276.8500 326.8500
376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***

SLOC= 13	526.8500	626.8500	726.8500	
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6				
SLOC= 1	.1875000	.1750000	.1625000	.1422000
	.1219000	.1097000		
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12				
SLOC= 7	.9750000E-01	.9060000E-01	.8360000E-01	.7670000E-01
	.6970000E-01	.6620000E-01		
PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15				
SLOC= 13	.6270000E-01	.5580000E-01	.4880000E-01	
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6				
SLOC= 1	.1370000	.1450000	.1520000	.1700000
	.1870000	.2040000		
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12				
SLOC= 7	.2200000	.2360000	.2520000	.2640000
	.2780000	.2910000		
PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15				
SLOC= 13	.3040000	.3300000	.3540000	
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6				
SLOC= 1	1.348000	1.254700	1.161400	.9950000
	.8711000	.7740000		
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12				
SLOC= 7	.6964000	.6329000	.5804000	.5356000
	.4975000	.4643000		
PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15				
SLOC= 13	.4354000	.3868000	.3482000	
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6				
SLOC= 1	.2300000E-01	.2500000E-01	.2600000E-01	.3000000E-01
	.3400000E-01	.3700000E-01		
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12				
SLOC= 7	.4100000E-01	.4400000E-01	.4700000E-01	.5000000E-01
	.5200000E-01	.5500000E-01		
PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15				
SLOC= 13	.5700000E-01	.6200000E-01	.6700000E-01	
PROPERTY TABLE C MAT= 8 NUM. POINTS= 6				
SLOC= 1	1006.200	1006.600	1007.000	1009.000
	1014.000	1021.000		
PROPERTY TABLE C MAT= 8 NUM. POINTS= 12				
SLOC= 7	1030.000	1040.000	1051.000	1063.000
	1075.000	1087.000		
PROPERTY TABLE C MAT= 8 NUM. POINTS= 15				
SLOC= 13	1099.000	1121.000	1141.000	
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6				
SLOC= 1	1.303700	1.213500	1.123300	.9625000
	.8425000	.7485000		
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12				
SLOC= 7	.6739000	.6124000	.5615000	.5214000
	.4812000	.4512000		
PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15				
SLOC= 13	.4211000	.3743000	.3368000	
PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6				

SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
.3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
.5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
SLOC= 1 1041.800 1041.400 1041.000 1042.000
1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
SLOC= 7 1056.000 1065.000 1075.000 1086.500
1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
.2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
.3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 -73.15000 26.85000 126.8500
326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
SLOC= 1 413.0000 401.0000 393.0000 379.0000
366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
SLOC= 1 356.0000 385.0000 397.0000 417.0000
433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
SLOC= 1 23.00000 50.00000 100.0000
150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
SLOC= 1 182.5600 190.1700 199.2200 202.9100
203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
SLOC= 1 868.0000 903.0000 946.0000 976.0000
998.0000

** End of Material Property List **

Define new material 15 for low thermal loading
outer barrier of 70/30 Copper Nickel (C71500)

Density: DENS (kg/m³)
 Emissivity: EMIS
 Conductivity: KXX (W/m/K)
 Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .000000E+00
 Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
 Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
 Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
 Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.0000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
 Calculate the volumetric heat generation
 (Assembly time is in years, FUEL is in seconds)

/INPUT FILE= hanf1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
 ** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **

**
 ** Executable File Name: MATHCAD.EXE **
 ** Output File Name: hanf1.dat **
 ** Execution Date: 04/17/95 **
 ** Start Age (years): 0.0 **
 ** Decay Period (years): 10000 **
 ** Enrichment (kg Pu): N.A. **
 ** Burnup (MWd/MTHM): N.A. **
 ** Assembly Type: SR Pour Canis **
 ** Pu Fract. (kg Pu/KG HM):N.A. **
 **

** ASSY(#,1) is the Pour Canister heat in Watts. **
 ** ASSY(#,0) is the time post emplacement in years. **

PARAMETER ASSY(1,1) =	871.2000 860.1000	868.4000 857.4000	865.6000	862.9000
PARAMETER ASSY(7,1) =	854.8000 844.3000	852.1000 831.8000	849.5000	846.9000
PARAMETER ASSY(13,1) =	819.7000 776.4000	808.2000 766.7000	797.1000	786.6000
PARAMETER ASSY(19,1) =	757.4000 723.7000	748.4000 716.1000	739.9000	731.6000
PARAMETER ASSY(25,1) =	708.9000 682.5000	701.9000 631.9000	695.2000	688.7000
PARAMETER ASSY(31,1) =	596.7000 524.9000	571.3000 514.5000	552.1000	537.1000
PARAMETER ASSY(37,1) =	505.5000 476.4000	497.3000 470.2000	489.9000	483.0000
PARAMETER ASSY(43,1) =	464.3000 442.1000	458.5000 393.8000	452.9000	447.5000
PARAMETER ASSY(49,1) =	351.5000 225.4000	314.1000 202.2000	280.9000	251.5000
PARAMETER ASSY(55,1) =	181.6000 120.0000	163.4000 108.7000	147.2000	132.8000
PARAMETER ASSY(61,1) =	98.57000 68.25000	89.60000 32.95000	81.64000	74.55000
PARAMETER ASSY(67,1) =	21.19000 11.42000	16.60000 10.33000	14.26000	12.69000
PARAMETER ASSY(73,1) =	9.355000 6.318000	8.477000 5.731000	7.684000	6.967000
PARAMETER ASSY(79,1) =	5.199000 3.533000	4.719000 1.390000	4.283000	3.890000
PARAMETER ASSY(85,1) =	.5979000 .1284000	.3034000 .1181000	.1920000	.1478000
PARAMETER ASSY(91,1) =	.1111000 .9000000E-01	.1054000 .8500000E-01	.1002000	.9510000E-01
PARAMETER ASSY(97,1) =	.8000000E-01 .6000000E-01	.7500000E-01	.7000000E-01	.6500000E-01
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000
PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000

PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
 INPUT MATRIX= ASSY(1,0)
 INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
 RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
 FUEL(1) = COPY ASSY(1)
 SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
 VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
 if use CSYS,0, the P. Cans are 2x2,
 if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,45.0,0,0,0,0,

Construct geometry for a single SRP Pour Canister
 (K's 1 - 10)
 (L's 1 - 16)
 (A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS=	0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS=	0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS=	0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS=	0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS=	0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS=	0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS=	0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS=	0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS=	0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS=	0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.=	1	KP1=	3	TAN1=	-.7071 -.7071 .0000
		KP2=	2	TAN2=	.7071 .7071 .0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.=	2	KP1=	2	TAN1=	-.7071 .7071 .0000
		KP2=	6	TAN2=	.7071 -.7071 .0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.=	3	KP1=	4	TAN1=	-.7071 .7071 .0000
		KP2=	2	TAN2=	.7071 -.7071 .0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.=	4	KP1=	2	TAN1=	-.7071 -.7071 .0000
		KP2=	5	TAN2=	.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	6	AND	5	ORIENTATION KEYPOINT=	2
RADIUS=	.29530				
LINE NO.=	5	KP1=	6	TAN1=	-.7071 -.7071 .0000
		KP2=	5	TAN2=	-.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	5	AND	4	ORIENTATION KEYPOINT=	2
RADIUS=	.29530				
LINE NO.=	6	KP1=	5	TAN1=	.7071 -.7071 .0000
		KP2=	4	TAN2=	-.7071 -.7071 .0000

ARC BETWEEN KEYPOINTS	4	AND	3	ORIENTATION KEYPOINT=	2
RADIUS=	.29530				
LINE NO.=	7	KP1=	4	TAN1=	.7071 .7071 .0000
		KP2=	3	TAN2=	.7071 -.7071 .0000

ARC BETWEEN KEYPOINTS	3	AND	6	ORIENTATION KEYPOINT=	2
RADIUS=	.29530				
LINE NO.=	8	KP1=	3	TAN1=	-.7071 .7071 .0000
		KP2=	6	TAN2=	.7071 .7071 .0000

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.=	9	KP1=	7	TAN1=	-.7071 -.7071 .0000
		KP2=	3	TAN2=	.7071 .7071 .0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.=	10	KP1=	10	TAN1=	.7071 -.7071 .0000
		KP2=	6	TAN2=	-.7071 .7071 .0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.=	11	KP1=	9	TAN1=	.7071 .7071 .0000
		KP2=	5	TAN2=	-.7071 -.7071 .0000

LINE CONNECTS KEYPOINTS	8	4			
LINE NO.=	12	KP1=	8	TAN1=	-.7071 .7071 .0000

```

                KP2=      4  TAN2=      .7071  -.7071  .0000
ARC BETWEEN KEYPOINTS      7 AND      8  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      13  KP1=      7  TAN1=      .7071  -.7071  .0000
                KP2=      8  TAN2=      .7071  .7071  .0000

ARC BETWEEN KEYPOINTS      8 AND      9  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      14  KP1=      8  TAN1=     -.7071  -.7071  .0000
                KP2=      9  TAN2=      .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      9 AND      10  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      15  KP1=      9  TAN1=     -.7071  .7071  .0000
                KP2=     10  TAN2=     -.7071  -.7071  .0000

ARC BETWEEN KEYPOINTS     10 AND      7  ORIENTATION KEYPOINT=      2
RADIUS=      .30480
LINE NO.=      16  KP1=     10  TAN1=      .7071  .7071  .0000
                KP2=      7  TAN2=     -.7071  .7071  .0000

```

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      2      4      5
(TRAVERSED IN SAME DIRECTION AS LINE      2)

```

AREA NUMBER = 1

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      2      8
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 2

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      1      3      7
(TRAVERSED IN SAME DIRECTION AS LINE      1)

```

AREA NUMBER = 3

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      3      4      6
(TRAVERSED IN SAME DIRECTION AS LINE      3)

```

AREA NUMBER = 4

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      5     10     15     11
(TRAVERSED IN SAME DIRECTION AS LINE      5)

```

AREA NUMBER = 5

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      8      9     16     10
(TRAVERSED IN SAME DIRECTION AS LINE      8)

```

AREA NUMBER = 6

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      7     12     13      9
(TRAVERSED IN SAME DIRECTION AS LINE      7)

```

AREA NUMBER = 7

```

DEFINE AREA BY LIST OF LINES
LINE LIST =      6     11     14     12
(TRAVERSED IN SAME DIRECTION AS LINE      6)

```

AREA NUMBER = 8

Interior and WP, Next
 (K's 11 - 19)
 (L's 17 - 34)
 (A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1= 1	TAN1=	-.7071	-.7071	.0000
	KP2= 7	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1= 10	TAN1=	-.9125	.4092	.0000
	KP2= 11	TAN2=	.9125	-.4092	.0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1= 9	TAN1=	-.7071	-.7071	.0000
	KP2= 12	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1= 8	TAN1=	.4092	-.9125	.0000
	KP2= 13	TAN2=	-.4092	.9125	.0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1= 1	TAN1=	.0000	-1.0000	.0000
	KP2= 13	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1= 1	TAN1=	-1.0000	.0000	.0000
	KP2= 11	TAN2=	1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS	11 AND 12	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 23	KP1= 11	TAN1=	.0000 -1.0000 .0000
	KP2= 12	TAN2=	-.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	12 AND 13	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 24	KP1= 12	TAN1=	.7071 -.7071 .0000
	KP2= 13	TAN2=	-1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1= 11	TAN1=	-1.0000	.0000	.0000
	KP2= 14	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1= 12	TAN1=	-.7071	-.7071	.0000
	KP2= 15	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	16	13			
LINE NO.= 27	KP1= 16	TAN1=	.0000	1.0000	.0000
	KP2= 13	TAN2=	.0000	-1.0000	.0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
 KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
 KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17
 LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
 KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18
 LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
 KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16
 LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
 KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
 KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
 KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES
 LINE LIST = 22 18 16 17
 (TRAVERSED IN SAME DIRECTION AS LINE 22)

AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 19 15 18
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 20 14 19
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES
 LINE LIST = 21 17 13 20
 (TRAVERSED IN SAME DIRECTION AS LINE 21)

AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 25 28 26
 (TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 26 29 27
 (TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas

glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.940 TIME= 13:50:06
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.960 TIME= 13:50:06
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.960 TIME= 13:50:06
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.020 TIME= 13:50:06
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.040 TIME= 13:50:06
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.040 TIME= 13:50:06
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
 92 93 94 95 96

NUMBER OF AREAS MESHED = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces
 (K's 20 - 31)
 (L's 35 - 46)

Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	20				
LINE NO.= 35	KP1=	1	TAN1=	.0000	.0000	1.0000
	KP2=	20	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	20	21				
LINE NO.= 36	KP1=	20	TAN1=	.0000	.0000	1.0000
	KP2=	21	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	21	22				
LINE NO.= 37	KP1=	21	TAN1=	.0000	.0000	1.0000
	KP2=	22	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	22	23				
LINE NO.= 38	KP1=	22	TAN1=	.0000	.0000	1.0000
	KP2=	23	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	23	24				
LINE NO.= 39	KP1=	23	TAN1=	.0000	.0000	1.0000
	KP2=	24	TAN2=	.0000	.0000	-1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
KEYPOINT	26	X,Y,Z=	.000000E+00	.000000E+00	1.21460	IN CSYS= 0

KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 16.1500 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -16.1500 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000

KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000

KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000

KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000

KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000

KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000

KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

Back Point
 (K's 40 - 44)
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -16.1500 IN CSYS= 0

KEYPOINT 41 X,Y,Z= 2.50000 .183300 -16.1500 IN CSYS= 0

KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -16.1500 IN CSYS= 0

KEYPOINT 43 X,Y,Z= -2.50000 .183300 -16.1500 IN CSYS= 0

KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -16.1500 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000

LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000

Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT 45 X,Y,Z= 1.73494 -1.61670 16.1500 IN CSYS= 0

KEYPOINT 46 X,Y,Z= 2.50000 .183300 16.1500 IN CSYS= 0

KEYPOINT 47 X,Y,Z= .000000E+00 2.68330 16.1500 IN CSYS= 0

KEYPOINT 48 X,Y,Z= -2.50000 .183300 16.1500 IN CSYS= 0

KEYPOINT 49 X,Y,Z= -1.73494 -1.61670 16.1500 IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 59 KP1= 45 TAN1= -.7200 -.6940 .0000
KP2= 46 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 60 KP1= 46 TAN1= .0000 -1.0000 .0000
KP2= 47 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 61 KP1= 47 TAN1= 1.0000 .0000 .0000
KP2= 48 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 62 KP1= 48 TAN1= .0000 1.0000 .0000
KP2= 49 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 49 45

LINE NO.= 63 KP1= 49 TAN1= -1.0000 .0000 .0000
KP2= 45 TAN2= 1.0000 .0000 .0000

Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40

LINE NO.= 64 KP1= 35 TAN1= .0000 .0000 1.0000
KP2= 40 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 36 41

LINE NO.= 65 KP1= 36 TAN1= .0000 .0000 1.0000
KP2= 41 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66 KP1= 37 TAN1= .0000 .0000 1.0000
KP2= 42 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (A's 17 - 26)

DEFINE AREA BY LIST OF LINES

LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.580 TIME= 13:50:06
Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES
LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.620 TIME= 13:50:07
Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES
LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.670 TIME= 13:50:07
Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES
LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.700 TIME= 13:50:07
Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES
LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 3.740 TIME= 13:50:07
Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES
LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 3.780 TIME= 13:50:07
Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES
LINE LIST = 61 72 51 71
(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 3.820 TIME= 13:50:07

Lines 61, 72, 51, and 71 do not lie on a common coordinate value in the currently active coordinate system (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES

LINE LIST = 62 73 52 72
(TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.860 TIME= 13:50:07

Lines 62, 73, 52, and 72 do not lie on a common coordinate value in the currently active coordinate system (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES

LINE LIST = 53 64 58 68
(TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES

LINE LIST = 63 69 53 73
(TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
MAXIMUM NODE NUMBER = 430
MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 481
MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
 TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
 (K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50			
LINE NO.= 74	KP1=	27	TAN1=	-1.0000	.0000 .0000
	KP2=	50	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS	27	51			
LINE NO.= 75	KP1=	27	TAN1=	.0000	-1.0000 .0000
	KP2=	51	TAN2=	.0000	1.0000 .0000
LINE CONNECTS KEYPOINTS	50	52			
LINE NO.= 76	KP1=	50	TAN1=	-1.0000	.0000 .0000
	KP2=	52	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS	51	53			
LINE NO.= 77	KP1=	51	TAN1=	.0000	-1.0000 .0000
	KP2=	53	TAN2=	.0000	1.0000 .0000
LINE CONNECTS KEYPOINTS	52	54			
LINE NO.= 78	KP1=	52	TAN1=	-1.0000	.0000 .0000
	KP2=	54	TAN2=	1.0000	.0000 .0000
LINE CONNECTS KEYPOINTS	53	55			
LINE NO.= 79	KP1=	53	TAN1=	.0000	-1.0000 .0000
	KP2=	55	TAN2=	.0000	1.0000 .0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS	50	AND	51	ORIENTATION	KEYPOINT= 27
RADIUS=	.78450				
LINE NO.= 80	KP1=	50	TAN1=	.0000	-1.0000 .0000
	KP2=	51	TAN2=	-1.0000	.0000 .0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
 RADIUS= .80450
 LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
 KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
 RADIUS= .85450
 LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
 KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 74 TO 75 STEP 1
 2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 80 TO 82 STEP 1
 5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 76 TO 79 STEP 1
 4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1
 26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 82 STEP 1
 82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 55 STEP 1
 55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
 (A's 27 - 29)

DEFINE AREA BY LIST OF LINES
 LINE LIST = 74 75 80
 (TRAVERSED IN SAME DIRECTION AS LINE 74)
 AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
 LINE LIST = 80 76 81 77
 (TRAVERSED IN SAME DIRECTION AS LINE 80)
 AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
 LINE LIST = 81 78 82 79
 (TRAVERSED IN SAME DIRECTION AS LINE 81)
 AREA NUMBER = 29

 Construct geometry for WP Bottom end
 (K's 56 - 61)

KEYPOINT 56 X,Y,Z= .784500 .000000E+00 -1.51000 IN CSYS= 0

KEYPOINT 57 X,Y,Z= .000000E+00 .784500 -1.51000 IN CSYS= 0
 KEYPOINT 58 X,Y,Z= .804500 .000000E+00 -1.51000 IN CSYS= 0
 KEYPOINT 59 X,Y,Z= .000000E+00 .804500 -1.51000 IN CSYS= 0
 KEYPOINT 60 X,Y,Z= .854500 .000000E+00 -1.51000 IN CSYS= 0
 KEYPOINT 61 X,Y,Z= .000000E+00 .854500 -1.51000 IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS 21 56
 LINE NO.= 83 KP1= 21 TAN1= -1.0000 .0000 .0000
 KP2= 56 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 21 57
 LINE NO.= 84 KP1= 21 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 56 58
 LINE NO.= 85 KP1= 56 TAN1= -1.0000 .0000 .0000
 KP2= 58 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 57 59
 LINE NO.= 86 KP1= 57 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 58 60
 LINE NO.= 87 KP1= 58 TAN1= -1.0000 .0000 .0000
 KP2= 60 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 59 61
 LINE NO.= 88 KP1= 59 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= .0000 1.0000 .0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS 56 AND 57 ORIENTATION KEYPOINT= 21
 RADIUS= .78450
 LINE NO.= 89 KP1= 56 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 58 AND 59 ORIENTATION KEYPOINT= 21
 RADIUS= .80450
 LINE NO.= 90 KP1= 58 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 60 AND 61 ORIENTATION KEYPOINT= 21
 RADIUS= .85450
 LINE NO.= 91 KP1= 60 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=

IN RANGE 85 TO 88 STEP 1

4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 29 STEP 1

29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 91 STEP 1

91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 61 STEP 1

61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
(A's 30 - 32)

DEFINE AREA BY LIST OF LINES
LINE LIST = 83 84 89
(TRAVERSED IN SAME DIRECTION AS LINE 83)

AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
LINE LIST = 89 85 90 86
(TRAVERSED IN SAME DIRECTION AS LINE 89)

AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
LINE LIST = 90 87 91 88
(TRAVERSED IN SAME DIRECTION AS LINE 90)

AREA NUMBER = 32

Mesh areas
Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6
MAXIMUM NODE NUMBER = 675
MAXIMUM ELEMENT NUMBER = 928

Extrude 2-D WP Interior into 3-D Space
(V's 1 - 32)

Bottom WP Area

DRAG AREAS
1, 2, 3, 4,
ALONG LINES
35, 36,

DRAG AREAS
5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 35, 36,

DRAG AREAS
 13, 14,
 ALONG LINES
 35, 36,

DRAG AREAS
 15, 16,
 ALONG LINES
 35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.700 TIME= 13:50:12
 Unmeshed line 178 is merged into meshed line 83.
 LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.700 TIME= 13:50:12
 Unmeshed line 196 is merged into meshed line 84.
 LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.700 TIME= 13:50:12
 Unmeshed line 218 is merged into meshed line 85.
 LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.700 TIME= 13:50:12
 Unmeshed line 221 is merged into meshed line 86.
 LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 8.700 TIME= 13:50:12

Unmeshed line 244 is merged into meshed line 87.

LINE 88 USED FOR LINE(S) 247

*** WARNING ***

CP= 8.710 TIME= 13:50:12

Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119
 LINE 95 USED FOR LINE(S) 118
 LINE 96 USED FOR LINE(S) 120
 LINE 99 USED FOR LINE(S) 127
 LINE 100 USED FOR LINE(S) 126
 LINE 102 USED FOR LINE(S) 132
 LINE 103 USED FOR LINE(S) 131
 LINE 104 USED FOR LINE(S) 136
 LINE 107 USED FOR LINE(S) 139
 LINE 108 USED FOR LINE(S) 138
 LINE 109 USED FOR LINE(S) 140
 LINE 112 USED FOR LINE(S) 147
 LINE 113 USED FOR LINE(S) 146
 LINE 115 USED FOR LINE(S) 152
 LINE 116 USED FOR LINE(S) 151
 LINE 117 USED FOR LINE(S) 156
 LINE 122 USED FOR LINE(S) 169
 LINE 123 USED FOR LINE(S) 170
 LINE 124 USED FOR LINE(S) 162
 LINE 128 USED FOR LINE(S) 163
 LINE 129 USED FOR LINE(S) 164
 LINE 133 USED FOR LINE(S) 177
 LINE 134 USED FOR LINE(S) 174
 LINE 137 USED FOR LINE(S) 175
 LINE 142 USED FOR LINE(S) 189
 LINE 143 USED FOR LINE(S) 190
 LINE 144 USED FOR LINE(S) 182
 LINE 148 USED FOR LINE(S) 183
 LINE 149 USED FOR LINE(S) 184
 LINE 153 USED FOR LINE(S) 197
 LINE 154 USED FOR LINE(S) 194
 LINE 157 USED FOR LINE(S) 195
 LINE 160 USED FOR LINE(S) 199
 LINE 166 USED FOR LINE(S) 198
 LINE 167 USED FOR LINE(S) 200
 LINE 171 USED FOR LINE(S) 206
 LINE 172 USED FOR LINE(S) 207
 LINE 180 USED FOR LINE(S) 212
 LINE 186 USED FOR LINE(S) 211
 LINE 187 USED FOR LINE(S) 213
 LINE 191 USED FOR LINE(S) 219
 LINE 192 USED FOR LINE(S) 220
 LINE 202 USED FOR LINE(S) 226
 LINE 203 USED FOR LINE(S) 224
 LINE 204 USED FOR LINE(S) 225
 LINE 209 USED FOR LINE(S) 233
 LINE 210 USED FOR LINE(S) 232
 LINE 215 USED FOR LINE(S) 239
 LINE 216 USED FOR LINE(S) 237
 LINE 217 USED FOR LINE(S) 238
 LINE 222 USED FOR LINE(S) 246
 LINE 223 USED FOR LINE(S) 245
 AREA 34 USED FOR AREA(S) 57
 AREA 38 USED FOR AREA(S) 62
 AREA 41 USED FOR AREA(S) 66
 AREA 43 USED FOR AREA(S) 70
 AREA 46 USED FOR AREA(S) 73
 AREA 50 USED FOR AREA(S) 78
 AREA 53 USED FOR AREA(S) 82
 AREA 55 USED FOR AREA(S) 86
 AREA 59 USED FOR AREA(S) 96
 AREA 63 USED FOR AREA(S) 91
 AREA 67 USED FOR AREA(S) 103
 AREA 71 USED FOR AREA(S) 100
 AREA 75 USED FOR AREA(S) 112

AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153

(V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	25 USED FOR KEYPOINT(S)	131	
KEYPOINT	26 USED FOR KEYPOINT(S)	139	
KEYPOINT	27 USED FOR KEYPOINT(S)	147	
KEYPOINT	50 USED FOR KEYPOINT(S)	148	167
KEYPOINT	51 USED FOR KEYPOINT(S)	153	171
KEYPOINT	52 USED FOR KEYPOINT(S)	170	185
KEYPOINT	53 USED FOR KEYPOINT(S)	172	189
KEYPOINT	54 USED FOR KEYPOINT(S)	188	
KEYPOINT	55 USED FOR KEYPOINT(S)	190	
KEYPOINT	73 USED FOR KEYPOINT(S)	98	
KEYPOINT	76 USED FOR KEYPOINT(S)	99	
KEYPOINT	78 USED FOR KEYPOINT(S)	103	
KEYPOINT	80 USED FOR KEYPOINT(S)	105	
KEYPOINT	84 USED FOR KEYPOINT(S)	110	
KEYPOINT	86 USED FOR KEYPOINT(S)	111	
KEYPOINT	88 USED FOR KEYPOINT(S)	115	
KEYPOINT	90 USED FOR KEYPOINT(S)	117	
KEYPOINT	93 USED FOR KEYPOINT(S)	122	
KEYPOINT	95 USED FOR KEYPOINT(S)	123	
KEYPOINT	96 USED FOR KEYPOINT(S)	127	
KEYPOINT	97 USED FOR KEYPOINT(S)	129	
KEYPOINT	101 USED FOR KEYPOINT(S)	136	
KEYPOINT	102 USED FOR KEYPOINT(S)	133	
KEYPOINT	104 USED FOR KEYPOINT(S)	134	
KEYPOINT	108 USED FOR KEYPOINT(S)	138	
KEYPOINT	113 USED FOR KEYPOINT(S)	144	
KEYPOINT	114 USED FOR KEYPOINT(S)	141	
KEYPOINT	116 USED FOR KEYPOINT(S)	142	
KEYPOINT	120 USED FOR KEYPOINT(S)	146	
KEYPOINT	125 USED FOR KEYPOINT(S)	152	

KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 12.760 TIME= 13:50:16
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.760 TIME= 13:50:16
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.770 TIME= 13:50:16
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.770 TIME= 13:50:16
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.770 TIME= 13:50:16
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.770 TIME= 13:50:16
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282
 LINE 200 USED FOR LINE(S) 287
 LINE 213 USED FOR LINE(S) 300
 LINE 218 USED FOR LINE(S) 301

LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231
AREA	183	USED FOR AREA(S)	228
AREA	187	USED FOR AREA(S)	240
AREA	191	USED FOR AREA(S)	235

AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)

Bottom WP Area

DRAG AREAS

30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310
 (V's 90 - 101)

Top WP Area

DRAG AREAS

27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846
 MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS

IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 960
 MAXIMUM ELEMENT NUMBER = 1168
 SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1017
 MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
 IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.490 TIME= 13:50:20
 Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.500 TIME= 13:50:20
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.530 TIME= 13:50:20
 Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.540 TIME= 13:50:20
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.630 TIME= 13:50:21
 Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.630 TIME= 13:50:21
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.730 TIME= 13:50:21
 Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.730 TIME= 13:50:21
 Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
 MAXIMUM NODE NUMBER = 1081
 MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
 IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1195
 MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
 IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.240 TIME= 13:50:22
 Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.240 TIME= 13:50:22
 Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.270 TIME= 13:50:22
 Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.280 TIME= 13:50:22
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.360 TIME= 13:50:22
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.360 TIME= 13:50:22
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.440 TIME= 13:50:22
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.440 TIME= 13:50:22
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.590 TIME= 13:50:23
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.590 TIME= 13:50:23
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.630 TIME= 13:50:23
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.630 TIME= 13:50:23
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.730 TIME= 13:50:23
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.730 TIME= 13:50:23
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.830 TIME= 13:50:23
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.830 TIME= 13:50:23
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 20.460 TIME= 13:50:23
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.460 TIME= 13:50:23
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.510 TIME= 13:50:23
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.510 TIME= 13:50:23
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.630 TIME= 13:50:24
Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.630 TIME= 13:50:24
Worst aspect ratio is 49.833333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.280 TIME= 13:50:24
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.290 TIME= 13:50:24
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.330 TIME= 13:50:24
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.330 TIME= 13:50:24
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.430 TIME= 13:50:24
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.430 TIME= 13:50:24
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.570 TIME= 13:50:24
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.570 TIME= 13:50:24
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.620 TIME= 13:50:25
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.620 TIME= 13:50:25
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.720 TIME= 13:50:25
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.730 TIME= 13:50:25
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888
Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2528
DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
He/Air in WP I/O Bar. Gap - NO RADIATION
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 28.510 TIME= 13:50:31
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.520 TIME= 13:50:31
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.520 TIME= 13:50:31
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.530 TIME= 13:50:31
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.530 TIME= 13:50:31
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.540 TIME= 13:50:31
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.540 TIME= 13:50:31
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.540 TIME= 13:50:31
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.560 TIME= 13:50:31
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.560 TIME= 13:50:31
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.570 TIME= 13:50:31
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.570 TIME= 13:50:31
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 13:50:32
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 13:50:32
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.630 TIME= 13:50:32
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.640 TIME= 13:50:32

Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373
NODE 557	USED FOR NODES	1507
NODE 654	USED FOR NODES	1378
NODE 549	USED FOR NODES	1506

NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.080 TIME= 13:50:33
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

 Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11
 MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE	3488	USED FOR NODES	5848
NODE	4099	USED FOR NODES	6471
NODE	4100	USED FOR NODES	6472
NODE	4539	USED FOR NODES	6911
NODE	4540	USED FOR NODES	6912
NODE	4037	USED FOR NODES	6397
NODE	5238	USED FOR NODES	7610
NODE	5239	USED FOR NODES	7611
NODE	4011	USED FOR NODES	6363
NODE	4012	USED FOR NODES	6364
NODE	3446	USED FOR NODES	5782
NODE	4920	USED FOR NODES	7292
NODE	4656	USED FOR NODES	7030
NODE	4657	USED FOR NODES	7031
NODE	4974	USED FOR NODES	7346
NODE	4345	USED FOR NODES	6717
NODE	4346	USED FOR NODES	6718
NODE	3448	USED FOR NODES	5786
NODE	3449	USED FOR NODES	5787
NODE	3450	USED FOR NODES	5788
NODE	4658	USED FOR NODES	7032
NODE	3975	USED FOR NODES	6327
NODE	3976	USED FOR NODES	6328
NODE	4921	USED FOR NODES	7293
NODE	4975	USED FOR NODES	7347
NODE	4660	USED FOR NODES	7055
NODE	3453	USED FOR NODES	5801
NODE	3452	USED FOR NODES	5800
NODE	4102	USED FOR NODES	6488
NODE	4014	USED FOR NODES	6372
NODE	4923	USED FOR NODES	7309
NODE	3978	USED FOR NODES	6336
NODE	4348	USED FOR NODES	6734
NODE	4541	USED FOR NODES	6927
NODE	4013	USED FOR NODES	6371
NODE	5240	USED FOR NODES	7626
NODE	3447	USED FOR NODES	5798
NODE	4038	USED FOR NODES	6401
NODE	4976	USED FOR NODES	7362
NODE	4659	USED FOR NODES	7054
NODE	4347	USED FOR NODES	6733
NODE	3489	USED FOR NODES	5852
NODE	3451	USED FOR NODES	5799
NODE	3977	USED FOR NODES	6335
NODE	4977	USED FOR NODES	7363
NODE	4101	USED FOR NODES	6487
NODE	4922	USED FOR NODES	7308
NODE	4661	USED FOR NODES	7056
NODE	5241	USED FOR NODES	7627
NODE	4542	USED FOR NODES	6928
NODE	3350	USED FOR NODES	5672
NODE	4603	USED FOR NODES	6977
NODE	5195	USED FOR NODES	7567
NODE	3398	USED FOR NODES	5754
NODE	4064	USED FOR NODES	6436
NODE	4884	USED FOR NODES	7256
NODE	3947	USED FOR NODES	6303
NODE	4885	USED FOR NODES	7257
NODE	3347	USED FOR NODES	5667

NODE	3858	USED	FOR	NODES	6202
NODE	4503	USED	FOR	NODES	6875
NODE	4504	USED	FOR	NODES	6876
NODE	4063	USED	FOR	NODES	6435
NODE	4958	USED	FOR	NODES	7324
NODE	4966	USED	FOR	NODES	7325
NODE	3859	USED	FOR	NODES	6203
NODE	4602	USED	FOR	NODES	6976
NODE	4309	USED	FOR	NODES	6681
NODE	4310	USED	FOR	NODES	6682
NODE	3349	USED	FOR	NODES	5671
NODE	5194	USED	FOR	NODES	7566
NODE	3912	USED	FOR	NODES	6256
NODE	3913	USED	FOR	NODES	6257
NODE	3351	USED	FOR	NODES	5673
NODE	4604	USED	FOR	NODES	6978
NODE	3354	USED	FOR	NODES	5686
NODE	4606	USED	FOR	NODES	7001
NODE	3861	USED	FOR	NODES	6211
NODE	4312	USED	FOR	NODES	6698
NODE	4887	USED	FOR	NODES	7273
NODE	4066	USED	FOR	NODES	6452
NODE	3353	USED	FOR	NODES	5685
NODE	5197	USED	FOR	NODES	7584
NODE	5196	USED	FOR	NODES	7583
NODE	4505	USED	FOR	NODES	6891
NODE	3860	USED	FOR	NODES	6210
NODE	3948	USED	FOR	NODES	6307
NODE	4886	USED	FOR	NODES	7272
NODE	3399	USED	FOR	NODES	5758
NODE	4506	USED	FOR	NODES	6892
NODE	3348	USED	FOR	NODES	5683
NODE	4311	USED	FOR	NODES	6697
NODE	4605	USED	FOR	NODES	7000
NODE	4065	USED	FOR	NODES	6451
NODE	4607	USED	FOR	NODES	7002
NODE	3914	USED	FOR	NODES	6264
NODE	3352	USED	FOR	NODES	5684
NODE	5193	USED	FOR	NODES	7582
NODE	3915	USED	FOR	NODES	6265
NODE	4045	USED	FOR	NODES	6415
NODE	3943	USED	FOR	NODES	6297
NODE	4736	USED	FOR	NODES	7086
NODE	4737	USED	FOR	NODES	7087
NODE	4400	USED	FOR	NODES	6750
NODE	4575	USED	FOR	NODES	6946
NODE	4576	USED	FOR	NODES	6954
NODE	4577	USED	FOR	NODES	6955
NODE	4161	USED	FOR	NODES	6511
NODE	4399	USED	FOR	NODES	6749
NODE	4046	USED	FOR	NODES	6423
NODE	3331	USED	FOR	NODES	5639
NODE	3394	USED	FOR	NODES	5748
NODE	4162	USED	FOR	NODES	6512
NODE	3850	USED	FOR	NODES	6190
NODE	3335	USED	FOR	NODES	5647
NODE	3851	USED	FOR	NODES	6194
NODE	3336	USED	FOR	NODES	5651
NODE	5037	USED	FOR	NODES	7379
NODE	3337	USED	FOR	NODES	5652
NODE	3904	USED	FOR	NODES	6244
NODE	5045	USED	FOR	NODES	7387
NODE	5046	USED	FOR	NODES	7388
NODE	3905	USED	FOR	NODES	6248
NODE	5075	USED	FOR	NODES	7404
NODE	4752	USED	FOR	NODES	7085
NODE	4759	USED	FOR	NODES	7095
NODE	4184	USED	FOR	NODES	6520
NODE	4415	USED	FOR	NODES	6758
NODE	5068	USED	FOR	NODES	7396

NODE	4177	USED	FOR	NODES	6510
NODE	4422	USED	FOR	NODES	6766
NODE	5061	USED	FOR	NODES	7386
NODE	4766	USED	FOR	NODES	7103
NODE	4191	USED	FOR	NODES	6528
NODE	5069	USED	FOR	NODES	7395
NODE	4416	USED	FOR	NODES	6757
NODE	4753	USED	FOR	NODES	7084
NODE	4185	USED	FOR	NODES	6519
NODE	4178	USED	FOR	NODES	6509
NODE	4760	USED	FOR	NODES	7094
NODE	5062	USED	FOR	NODES	7385
NODE	4767	USED	FOR	NODES	7102
NODE	5076	USED	FOR	NODES	7403
NODE	4423	USED	FOR	NODES	6765
NODE	4192	USED	FOR	NODES	6527
NODE	4193	USED	FOR	NODES	6526
NODE	4768	USED	FOR	NODES	7101
NODE	4761	USED	FOR	NODES	7093
NODE	5070	USED	FOR	NODES	7394
NODE	4417	USED	FOR	NODES	6756
NODE	4186	USED	FOR	NODES	6518
NODE	5063	USED	FOR	NODES	7384
NODE	4179	USED	FOR	NODES	6508
NODE	4754	USED	FOR	NODES	7083
NODE	5077	USED	FOR	NODES	7402
NODE	4424	USED	FOR	NODES	6764
NODE	5078	USED	FOR	NODES	7401
NODE	4755	USED	FOR	NODES	7082
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NODE	2666	USED	FOR	NODES	9813
NODE	2311	USED	FOR	NODES	9153
NODE	2648	USED	FOR	NODES	9799
NODE	1582	USED	FOR	NODES	8915
NODE	1883	USED	FOR	NODES	9497
NODE	1592	USED	FOR	NODES	8922
NODE	2658	USED	FOR	NODES	9806
NODE	1873	USED	FOR	NODES	9490
NODE	1600	USED	FOR	NODES	8929
NODE	1891	USED	FOR	NODES	9504
NODE	2667	USED	FOR	NODES	9812
NODE	1884	USED	FOR	NODES	9496
NODE	2649	USED	FOR	NODES	9798
NODE	2312	USED	FOR	NODES	9152
NODE	2320	USED	FOR	NODES	9159
NODE	1892	USED	FOR	NODES	9503
NODE	1601	USED	FOR	NODES	8928
NODE	1593	USED	FOR	NODES	8921
NODE	1583	USED	FOR	NODES	8914
NODE	2659	USED	FOR	NODES	9805
NODE	1874	USED	FOR	NODES	9489
NODE	1893	USED	FOR	NODES	9502
NODE	1602	USED	FOR	NODES	8927
NODE	2668	USED	FOR	NODES	9811
NODE	2313	USED	FOR	NODES	9151
NODE	1885	USED	FOR	NODES	9495
NODE	1584	USED	FOR	NODES	8913
NODE	1875	USED	FOR	NODES	9488
NODE	1594	USED	FOR	NODES	8920
NODE	2321	USED	FOR	NODES	9158
NODE	2650	USED	FOR	NODES	9797
NODE	2660	USED	FOR	NODES	9804
NODE	1295	USED	FOR	NODES	8071

NODE	1450	USED FOR NODES	8640
NODE	1454	USED FOR NODES	8641
NODE	1400	USED FOR NODES	8587
NODE	1396	USED FOR NODES	8586
NODE	1586	USED FOR NODES	8898
NODE	1299	USED FOR NODES	8072
NODE	1877	USED FOR NODES	9473
NODE	1300	USED FOR NODES	8073
NODE	483	USED FOR NODES	8679
NODE	2651	USED FOR NODES	9781
NODE	1876	USED FOR NODES	9472
NODE	2643	USED FOR NODES	9773
NODE	580	USED FOR NODES	8130
NODE	1525	USED FOR NODES	8781
NODE	2652	USED FOR NODES	9782
NODE	75	USED FOR NODES	8067
NODE	1790	USED FOR NODES	9311
NODE	1798	USED FOR NODES	9312
NODE	1799	USED FOR NODES	9313
NODE	2304	USED FOR NODES	9135
NODE	1533	USED FOR NODES	8782
NODE	2305	USED FOR NODES	9136
NODE	1585	USED FOR NODES	8897
NODE	1471	USED FOR NODES	8651
NODE	1562	USED FOR NODES	8802
NODE	1772	USED FOR NODES	9048
NODE	1846	USED FOR NODES	9343
NODE	1417	USED FOR NODES	8597
NODE	1845	USED FOR NODES	9342
NODE	2063	USED FOR NODES	9623
NODE	2847	USED FOR NODES	9932
NODE	650	USED FOR NODES	8135
NODE	1416	USED FOR NODES	8596
NODE	553	USED FOR NODES	8684
NODE	1771	USED FOR NODES	9047
NODE	112	USED FOR NODES	8084
NODE	1470	USED FOR NODES	8650
NODE	1325	USED FOR NODES	8088
NODE	2446	USED FOR NODES	9241
NODE	2062	USED FOR NODES	9622
NODE	2846	USED FOR NODES	9929
NODE	2848	USED FOR NODES	9933
NODE	1844	USED FOR NODES	9341
NODE	2447	USED FOR NODES	9242
NODE	1561	USED FOR NODES	8801
NODE	1326	USED FOR NODES	8089
NODE	1327	USED FOR NODES	8090
NODE	1545	USED FOR NODES	8799
NODE	545	USED FOR NODES	8683
NODE	1546	USED FOR NODES	8800
NODE	642	USED FOR NODES	8134
NODE	1313	USED FOR NODES	8085
NODE	2046	USED FOR NODES	9620
NODE	2047	USED FOR NODES	9621
NODE	1408	USED FOR NODES	8594
NODE	1409	USED FOR NODES	8595
NODE	1462	USED FOR NODES	8648
NODE	108	USED FOR NODES	8083
NODE	1463	USED FOR NODES	8649
NODE	2430	USED FOR NODES	9239
NODE	2588	USED FOR NODES	9694
NODE	2431	USED FOR NODES	9240
NODE	2830	USED FOR NODES	9930
NODE	1315	USED FOR NODES	8087
NODE	1756	USED FOR NODES	9046
NODE	1820	USED FOR NODES	9338
NODE	1822	USED FOR NODES	9340
NODE	2831	USED FOR NODES	9931
NODE	1755	USED FOR NODES	9045
NODE	2589	USED FOR NODES	9702

NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING ***

CP= 62.460 TIME= 13:51:05

Same node numbers associated with more than one solid model entity.

Future mesh clearing operations could produce unexpected results.

NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	1 USED FOR KEYPOINT(S)	209	372	535
KEYPOINT	11 USED FOR KEYPOINT(S)	541		
KEYPOINT	13 USED FOR KEYPOINT(S)	210		
KEYPOINT	14 USED FOR KEYPOINT(S)	551		
KEYPOINT	16 USED FOR KEYPOINT(S)	223		
KEYPOINT	17 USED FOR KEYPOINT(S)	560		
KEYPOINT	19 USED FOR KEYPOINT(S)	232		
KEYPOINT	20 USED FOR KEYPOINT(S)	212	375	538
KEYPOINT	21 USED FOR KEYPOINT(S)	218	381	544
KEYPOINT	22 USED FOR KEYPOINT(S)	297	460	623
KEYPOINT	23 USED FOR KEYPOINT(S)	304	467	630

KEYPOINT	24 USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25 USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26 USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27 USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28 USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29 USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30 USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31 USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50 USED FOR KEYPOINT(S)	603		
KEYPOINT	51 USED FOR KEYPOINT(S)	274		
KEYPOINT	52 USED FOR KEYPOINT(S)	612		
KEYPOINT	53 USED FOR KEYPOINT(S)	285		
KEYPOINT	54 USED FOR KEYPOINT(S)	621		
KEYPOINT	55 USED FOR KEYPOINT(S)	294		
KEYPOINT	56 USED FOR KEYPOINT(S)	546		
KEYPOINT	57 USED FOR KEYPOINT(S)	217		
KEYPOINT	58 USED FOR KEYPOINT(S)	555		
KEYPOINT	59 USED FOR KEYPOINT(S)	228		
KEYPOINT	60 USED FOR KEYPOINT(S)	564		
KEYPOINT	61 USED FOR KEYPOINT(S)	237		
KEYPOINT	89 USED FOR KEYPOINT(S)	542		
KEYPOINT	94 USED FOR KEYPOINT(S)	211		
KEYPOINT	99 USED FOR KEYPOINT(S)	624		
KEYPOINT	103 USED FOR KEYPOINT(S)	296		
KEYPOINT	105 USED FOR KEYPOINT(S)	300		
KEYPOINT	107 USED FOR KEYPOINT(S)	552		
KEYPOINT	109 USED FOR KEYPOINT(S)	224		
KEYPOINT	110 USED FOR KEYPOINT(S)	625		
KEYPOINT	111 USED FOR KEYPOINT(S)	302		
KEYPOINT	115 USED FOR KEYPOINT(S)	627		
KEYPOINT	117 USED FOR KEYPOINT(S)	645		
KEYPOINT	119 USED FOR KEYPOINT(S)	561		
KEYPOINT	121 USED FOR KEYPOINT(S)	233		
KEYPOINT	122 USED FOR KEYPOINT(S)	631		
KEYPOINT	123 USED FOR KEYPOINT(S)	303		
KEYPOINT	127 USED FOR KEYPOINT(S)	307		
KEYPOINT	129 USED FOR KEYPOINT(S)	632		
KEYPOINT	131 USED FOR KEYPOINT(S)	309		
KEYPOINT	132 USED FOR KEYPOINT(S)	595		
KEYPOINT	133 USED FOR KEYPOINT(S)	634		
KEYPOINT	134 USED FOR KEYPOINT(S)	317		
KEYPOINT	136 USED FOR KEYPOINT(S)	638		
KEYPOINT	137 USED FOR KEYPOINT(S)	266		
KEYPOINT	138 USED FOR KEYPOINT(S)	310		
KEYPOINT	139 USED FOR KEYPOINT(S)	314		
KEYPOINT	140 USED FOR KEYPOINT(S)	599		
KEYPOINT	141 USED FOR KEYPOINT(S)	639		
KEYPOINT	142 USED FOR KEYPOINT(S)	316		
KEYPOINT	144 USED FOR KEYPOINT(S)	641		
KEYPOINT	145 USED FOR KEYPOINT(S)	270		
KEYPOINT	146 USED FOR KEYPOINT(S)	321		
KEYPOINT	147 USED FOR KEYPOINT(S)	646		
KEYPOINT	148 USED FOR KEYPOINT(S)	323		
KEYPOINT	149 USED FOR KEYPOINT(S)	648		
KEYPOINT	152 USED FOR KEYPOINT(S)	652		
KEYPOINT	153 USED FOR KEYPOINT(S)	324		
KEYPOINT	154 USED FOR KEYPOINT(S)	328		
KEYPOINT	155 USED FOR KEYPOINT(S)	653		
KEYPOINT	156 USED FOR KEYPOINT(S)	330		
KEYPOINT	158 USED FOR KEYPOINT(S)	606		
KEYPOINT	159 USED FOR KEYPOINT(S)	655		
KEYPOINT	160 USED FOR KEYPOINT(S)	279		
KEYPOINT	162 USED FOR KEYPOINT(S)	659		
KEYPOINT	164 USED FOR KEYPOINT(S)	609		
KEYPOINT	165 USED FOR KEYPOINT(S)	331		
KEYPOINT	166 USED FOR KEYPOINT(S)	282		
KEYPOINT	167 USED FOR KEYPOINT(S)	335		
KEYPOINT	168 USED FOR KEYPOINT(S)	660		
KEYPOINT	170 USED FOR KEYPOINT(S)	337		
KEYPOINT	171 USED FOR KEYPOINT(S)	662		

KEYPOINT	173	USED	FOR	KEYPOINT(S)	666
KEYPOINT	174	USED	FOR	KEYPOINT(S)	338
KEYPOINT	176	USED	FOR	KEYPOINT(S)	615
KEYPOINT	177	USED	FOR	KEYPOINT(S)	342
KEYPOINT	178	USED	FOR	KEYPOINT(S)	288
KEYPOINT	179	USED	FOR	KEYPOINT(S)	667
KEYPOINT	180	USED	FOR	KEYPOINT(S)	344
KEYPOINT	182	USED	FOR	KEYPOINT(S)	618
KEYPOINT	183	USED	FOR	KEYPOINT(S)	669
KEYPOINT	184	USED	FOR	KEYPOINT(S)	291
KEYPOINT	215	USED	FOR	KEYPOINT(S)	373
KEYPOINT	216	USED	FOR	KEYPOINT(S)	374
KEYPOINT	220	USED	FOR	KEYPOINT(S)	380
KEYPOINT	225	USED	FOR	KEYPOINT(S)	386
KEYPOINT	226	USED	FOR	KEYPOINT(S)	387
KEYPOINT	229	USED	FOR	KEYPOINT(S)	391
KEYPOINT	234	USED	FOR	KEYPOINT(S)	395
KEYPOINT	235	USED	FOR	KEYPOINT(S)	396
KEYPOINT	238	USED	FOR	KEYPOINT(S)	400
KEYPOINT	269	USED	FOR	KEYPOINT(S)	429
KEYPOINT	273	USED	FOR	KEYPOINT(S)	433
KEYPOINT	277	USED	FOR	KEYPOINT(S)	437
KEYPOINT	280	USED	FOR	KEYPOINT(S)	442
KEYPOINT	283	USED	FOR	KEYPOINT(S)	445
KEYPOINT	286	USED	FOR	KEYPOINT(S)	448
KEYPOINT	289	USED	FOR	KEYPOINT(S)	451
KEYPOINT	292	USED	FOR	KEYPOINT(S)	454
KEYPOINT	295	USED	FOR	KEYPOINT(S)	457
KEYPOINT	298	USED	FOR	KEYPOINT(S)	459
KEYPOINT	299	USED	FOR	KEYPOINT(S)	463
KEYPOINT	301	USED	FOR	KEYPOINT(S)	465
KEYPOINT	305	USED	FOR	KEYPOINT(S)	466
KEYPOINT	306	USED	FOR	KEYPOINT(S)	470
KEYPOINT	308	USED	FOR	KEYPOINT(S)	472
KEYPOINT	312	USED	FOR	KEYPOINT(S)	473
KEYPOINT	313	USED	FOR	KEYPOINT(S)	477
KEYPOINT	315	USED	FOR	KEYPOINT(S)	479
KEYPOINT	319	USED	FOR	KEYPOINT(S)	480
KEYPOINT	320	USED	FOR	KEYPOINT(S)	484
KEYPOINT	322	USED	FOR	KEYPOINT(S)	486
KEYPOINT	326	USED	FOR	KEYPOINT(S)	487
KEYPOINT	327	USED	FOR	KEYPOINT(S)	491
KEYPOINT	329	USED	FOR	KEYPOINT(S)	493
KEYPOINT	333	USED	FOR	KEYPOINT(S)	494
KEYPOINT	334	USED	FOR	KEYPOINT(S)	498
KEYPOINT	336	USED	FOR	KEYPOINT(S)	500
KEYPOINT	340	USED	FOR	KEYPOINT(S)	501
KEYPOINT	341	USED	FOR	KEYPOINT(S)	505
KEYPOINT	343	USED	FOR	KEYPOINT(S)	507
KEYPOINT	378	USED	FOR	KEYPOINT(S)	536
KEYPOINT	379	USED	FOR	KEYPOINT(S)	537
KEYPOINT	383	USED	FOR	KEYPOINT(S)	543
KEYPOINT	388	USED	FOR	KEYPOINT(S)	549
KEYPOINT	389	USED	FOR	KEYPOINT(S)	550
KEYPOINT	392	USED	FOR	KEYPOINT(S)	554
KEYPOINT	397	USED	FOR	KEYPOINT(S)	558
KEYPOINT	398	USED	FOR	KEYPOINT(S)	559
KEYPOINT	401	USED	FOR	KEYPOINT(S)	563
KEYPOINT	432	USED	FOR	KEYPOINT(S)	592
KEYPOINT	436	USED	FOR	KEYPOINT(S)	596
KEYPOINT	440	USED	FOR	KEYPOINT(S)	600
KEYPOINT	443	USED	FOR	KEYPOINT(S)	605
KEYPOINT	446	USED	FOR	KEYPOINT(S)	608
KEYPOINT	449	USED	FOR	KEYPOINT(S)	611
KEYPOINT	452	USED	FOR	KEYPOINT(S)	614
KEYPOINT	455	USED	FOR	KEYPOINT(S)	617
KEYPOINT	458	USED	FOR	KEYPOINT(S)	620
KEYPOINT	461	USED	FOR	KEYPOINT(S)	622
KEYPOINT	462	USED	FOR	KEYPOINT(S)	626
KEYPOINT	464	USED	FOR	KEYPOINT(S)	628

KEYPOINT	468	USED FOR KEYPOINT(S)	629
KEYPOINT	469	USED FOR KEYPOINT(S)	633
KEYPOINT	471	USED FOR KEYPOINT(S)	635
KEYPOINT	475	USED FOR KEYPOINT(S)	636
KEYPOINT	476	USED FOR KEYPOINT(S)	640
KEYPOINT	478	USED FOR KEYPOINT(S)	642
KEYPOINT	482	USED FOR KEYPOINT(S)	643
KEYPOINT	483	USED FOR KEYPOINT(S)	647
KEYPOINT	485	USED FOR KEYPOINT(S)	649
KEYPOINT	489	USED FOR KEYPOINT(S)	650
KEYPOINT	490	USED FOR KEYPOINT(S)	654
KEYPOINT	492	USED FOR KEYPOINT(S)	656
KEYPOINT	496	USED FOR KEYPOINT(S)	657
KEYPOINT	497	USED FOR KEYPOINT(S)	661
KEYPOINT	499	USED FOR KEYPOINT(S)	663
KEYPOINT	503	USED FOR KEYPOINT(S)	664
KEYPOINT	504	USED FOR KEYPOINT(S)	668
KEYPOINT	506	USED FOR KEYPOINT(S)	670
LINE	21	USED FOR LINE(S)	511
LINE	22	USED FOR LINE(S)	1363
LINE	25	USED FOR LINE(S)	1385
LINE	27	USED FOR LINE(S)	549
LINE	30	USED FOR LINE(S)	1406
LINE	32	USED FOR LINE(S)	570
LINE	35	USED FOR LINE(S)	514 931 1348
LINE	36	USED FOR LINE(S)	533 950 1367
LINE	37	USED FOR LINE(S)	746 1163 1580
LINE	38	USED FOR LINE(S)	765 1182 1599
LINE	39	USED FOR LINE(S)	781 1198 1615
LINE	40	USED FOR LINE(S)	662 1079 1496
LINE	41	USED FOR LINE(S)	674 1091 1508
LINE	42	USED FOR LINE(S)	686 1103 1520
LINE	43	USED FOR LINE(S)	797 1214 1631
LINE	44	USED FOR LINE(S)	816 1233 1650
LINE	45	USED FOR LINE(S)	832 1249 1666
LINE	46	USED FOR LINE(S)	848 1265 1682
LINE	74	USED FOR LINE(S)	1529
LINE	75	USED FOR LINE(S)	685
LINE	76	USED FOR LINE(S)	1552
LINE	77	USED FOR LINE(S)	716
LINE	78	USED FOR LINE(S)	1576
LINE	79	USED FOR LINE(S)	740
LINE	83	USED FOR LINE(S)	1376
LINE	84	USED FOR LINE(S)	532
LINE	85	USED FOR LINE(S)	1396
LINE	86	USED FOR LINE(S)	560
LINE	87	USED FOR LINE(S)	1417
LINE	88	USED FOR LINE(S)	581
LINE	158	USED FOR LINE(S)	1364
LINE	160	USED FOR LINE(S)	1359
LINE	172	USED FOR LINE(S)	512
LINE	176	USED FOR LINE(S)	513
LINE	180	USED FOR LINE(S)	1373
LINE	192	USED FOR LINE(S)	531
LINE	204	USED FOR LINE(S)	1386
LINE	205	USED FOR LINE(S)	1387
LINE	206	USED FOR LINE(S)	1584
LINE	207	USED FOR LINE(S)	1635
LINE	208	USED FOR LINE(S)	550
LINE	209	USED FOR LINE(S)	547
LINE	211	USED FOR LINE(S)	1582
LINE	217	USED FOR LINE(S)	1395
LINE	222	USED FOR LINE(S)	558
LINE	224	USED FOR LINE(S)	744
LINE	230	USED FOR LINE(S)	1407
LINE	231	USED FOR LINE(S)	1408
LINE	233	USED FOR LINE(S)	745
LINE	234	USED FOR LINE(S)	571
LINE	235	USED FOR LINE(S)	568
LINE	237	USED FOR LINE(S)	756

LINE	243	USED FOR LINE(S)	1416
LINE	245	USED FOR LINE(S)	754
LINE	248	USED FOR LINE(S)	579
LINE	250	USED FOR LINE(S)	1585
LINE	251	USED FOR LINE(S)	1586
LINE	257	USED FOR LINE(S)	762
LINE	258	USED FOR LINE(S)	760
LINE	263	USED FOR LINE(S)	1591
LINE	267	USED FOR LINE(S)	1592
LINE	269	USED FOR LINE(S)	1602
LINE	271	USED FOR LINE(S)	1600
LINE	278	USED FOR LINE(S)	763
LINE	282	USED FOR LINE(S)	764
LINE	283	USED FOR LINE(S)	773
LINE	287	USED FOR LINE(S)	771
LINE	289	USED FOR LINE(S)	1505
LINE	291	USED FOR LINE(S)	1502
LINE	293	USED FOR LINE(S)	1603
LINE	294	USED FOR LINE(S)	1604
LINE	295	USED FOR LINE(S)	778
LINE	300	USED FOR LINE(S)	776
LINE	303	USED FOR LINE(S)	660
LINE	305	USED FOR LINE(S)	1608
LINE	306	USED FOR LINE(S)	1609
LINE	307	USED FOR LINE(S)	661
LINE	308	USED FOR LINE(S)	1618
LINE	309	USED FOR LINE(S)	1517
LINE	310	USED FOR LINE(S)	1633
LINE	311	USED FOR LINE(S)	1514
LINE	313	USED FOR LINE(S)	1616
LINE	315	USED FOR LINE(S)	779
LINE	320	USED FOR LINE(S)	780
LINE	321	USED FOR LINE(S)	789
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LINE	325	USED FOR LINE(S)	787
LINE	327	USED FOR LINE(S)	673
LINE	328	USED FOR LINE(S)	1619
LINE	329	USED FOR LINE(S)	1620
LINE	330	USED FOR LINE(S)	794
LINE	331	USED FOR LINE(S)	1526
LINE	333	USED FOR LINE(S)	792
LINE	335	USED FOR LINE(S)	1624
LINE	340	USED FOR LINE(S)	1625
LINE	343	USED FOR LINE(S)	684
LINE	345	USED FOR LINE(S)	795
LINE	346	USED FOR LINE(S)	796
LINE	347	USED FOR LINE(S)	807
LINE	348	USED FOR LINE(S)	805
LINE	350	USED FOR LINE(S)	1636
LINE	351	USED FOR LINE(S)	1637
LINE	355	USED FOR LINE(S)	1535
LINE	356	USED FOR LINE(S)	1536
LINE	357	USED FOR LINE(S)	813
LINE	358	USED FOR LINE(S)	811
LINE	359	USED FOR LINE(S)	700
LINE	360	USED FOR LINE(S)	698
LINE	363	USED FOR LINE(S)	1642
LINE	364	USED FOR LINE(S)	1643
LINE	368	USED FOR LINE(S)	1543
LINE	369	USED FOR LINE(S)	1544
LINE	370	USED FOR LINE(S)	1653
LINE	372	USED FOR LINE(S)	708
LINE	373	USED FOR LINE(S)	706
LINE	375	USED FOR LINE(S)	1651
LINE	377	USED FOR LINE(S)	814
LINE	381	USED FOR LINE(S)	1551
LINE	382	USED FOR LINE(S)	815
LINE	383	USED FOR LINE(S)	824
LINE	384	USED FOR LINE(S)	822
LINE	386	USED FOR LINE(S)	714

LINE	388	USED	FOR	LINE(S)	1654
LINE	389	USED	FOR	LINE(S)	1655
LINE	390	USED	FOR	LINE(S)	829
LINE	394	USED	FOR	LINE(S)	1559
LINE	395	USED	FOR	LINE(S)	1560
LINE	396	USED	FOR	LINE(S)	827
LINE	398	USED	FOR	LINE(S)	724
LINE	399	USED	FOR	LINE(S)	722
LINE	401	USED	FOR	LINE(S)	1659
LINE	402	USED	FOR	LINE(S)	1660
LINE	403	USED	FOR	LINE(S)	1669
LINE	407	USED	FOR	LINE(S)	1567
LINE	408	USED	FOR	LINE(S)	1568
LINE	410	USED	FOR	LINE(S)	1667
LINE	411	USED	FOR	LINE(S)	732
LINE	412	USED	FOR	LINE(S)	730
LINE	415	USED	FOR	LINE(S)	830
LINE	416	USED	FOR	LINE(S)	831
LINE	420	USED	FOR	LINE(S)	1575
LINE	421	USED	FOR	LINE(S)	840
LINE	422	USED	FOR	LINE(S)	838
LINE	424	USED	FOR	LINE(S)	1670
LINE	425	USED	FOR	LINE(S)	738
LINE	427	USED	FOR	LINE(S)	1671
LINE	428	USED	FOR	LINE(S)	845
LINE	429	USED	FOR	LINE(S)	843
LINE	431	USED	FOR	LINE(S)	1675
LINE	432	USED	FOR	LINE(S)	1676
LINE	433	USED	FOR	LINE(S)	1685
LINE	435	USED	FOR	LINE(S)	1683
LINE	437	USED	FOR	LINE(S)	846
LINE	438	USED	FOR	LINE(S)	847
LINE	439	USED	FOR	LINE(S)	856
LINE	440	USED	FOR	LINE(S)	854
LINE	442	USED	FOR	LINE(S)	1686
LINE	443	USED	FOR	LINE(S)	1687
LINE	444	USED	FOR	LINE(S)	861
LINE	445	USED	FOR	LINE(S)	859
LINE	447	USED	FOR	LINE(S)	1691
LINE	448	USED	FOR	LINE(S)	1692
LINE	525	USED	FOR	LINE(S)	929
LINE	529	USED	FOR	LINE(S)	928
LINE	530	USED	FOR	LINE(S)	930
LINE	539	USED	FOR	LINE(S)	948
LINE	542	USED	FOR	LINE(S)	949
LINE	551	USED	FOR	LINE(S)	966
LINE	552	USED	FOR	LINE(S)	964
LINE	553	USED	FOR	LINE(S)	967
LINE	561	USED	FOR	LINE(S)	975
LINE	562	USED	FOR	LINE(S)	977
LINE	572	USED	FOR	LINE(S)	987
LINE	573	USED	FOR	LINE(S)	985
LINE	574	USED	FOR	LINE(S)	988
LINE	582	USED	FOR	LINE(S)	996
LINE	583	USED	FOR	LINE(S)	998
LINE	668	USED	FOR	LINE(S)	1077
LINE	671	USED	FOR	LINE(S)	1078
LINE	680	USED	FOR	LINE(S)	1089
LINE	683	USED	FOR	LINE(S)	1090
LINE	692	USED	FOR	LINE(S)	1101
LINE	695	USED	FOR	LINE(S)	1102
LINE	701	USED	FOR	LINE(S)	1115
LINE	702	USED	FOR	LINE(S)	1117
LINE	709	USED	FOR	LINE(S)	1123
LINE	710	USED	FOR	LINE(S)	1125
LINE	717	USED	FOR	LINE(S)	1131
LINE	718	USED	FOR	LINE(S)	1133
LINE	725	USED	FOR	LINE(S)	1139
LINE	726	USED	FOR	LINE(S)	1141
LINE	733	USED	FOR	LINE(S)	1147

LINE	734 USED FOR LINE(S)	1149
LINE	741 USED FOR LINE(S)	1155
LINE	742 USED FOR LINE(S)	1157
LINE	748 USED FOR LINE(S)	1161
LINE	750 USED FOR LINE(S)	1162
LINE	751 USED FOR LINE(S)	1171
LINE	752 USED FOR LINE(S)	1173
LINE	757 USED FOR LINE(S)	1177
LINE	758 USED FOR LINE(S)	1179
LINE	766 USED FOR LINE(S)	1180
LINE	768 USED FOR LINE(S)	1181
LINE	769 USED FOR LINE(S)	1188
LINE	770 USED FOR LINE(S)	1190
LINE	774 USED FOR LINE(S)	1193
LINE	775 USED FOR LINE(S)	1195
LINE	782 USED FOR LINE(S)	1196
LINE	784 USED FOR LINE(S)	1197
LINE	785 USED FOR LINE(S)	1204
LINE	786 USED FOR LINE(S)	1206
LINE	790 USED FOR LINE(S)	1209
LINE	791 USED FOR LINE(S)	1211
LINE	799 USED FOR LINE(S)	1212
LINE	801 USED FOR LINE(S)	1213
LINE	802 USED FOR LINE(S)	1222
LINE	803 USED FOR LINE(S)	1224
LINE	808 USED FOR LINE(S)	1228
LINE	809 USED FOR LINE(S)	1230
LINE	817 USED FOR LINE(S)	1231
LINE	819 USED FOR LINE(S)	1232
LINE	820 USED FOR LINE(S)	1239
LINE	821 USED FOR LINE(S)	1241
LINE	825 USED FOR LINE(S)	1244
LINE	826 USED FOR LINE(S)	1246
LINE	833 USED FOR LINE(S)	1247
LINE	835 USED FOR LINE(S)	1248
LINE	836 USED FOR LINE(S)	1255
LINE	837 USED FOR LINE(S)	1257
LINE	841 USED FOR LINE(S)	1260
LINE	842 USED FOR LINE(S)	1262
LINE	849 USED FOR LINE(S)	1263
LINE	851 USED FOR LINE(S)	1264
LINE	852 USED FOR LINE(S)	1271
LINE	853 USED FOR LINE(S)	1273
LINE	857 USED FOR LINE(S)	1276
LINE	858 USED FOR LINE(S)	1278
LINE	942 USED FOR LINE(S)	1346
LINE	946 USED FOR LINE(S)	1345
LINE	947 USED FOR LINE(S)	1347
LINE	956 USED FOR LINE(S)	1365
LINE	959 USED FOR LINE(S)	1366
LINE	968 USED FOR LINE(S)	1383
LINE	969 USED FOR LINE(S)	1381
LINE	970 USED FOR LINE(S)	1384
LINE	978 USED FOR LINE(S)	1392
LINE	979 USED FOR LINE(S)	1394
LINE	989 USED FOR LINE(S)	1404
LINE	990 USED FOR LINE(S)	1402
LINE	991 USED FOR LINE(S)	1405
LINE	999 USED FOR LINE(S)	1413
LINE	1000 USED FOR LINE(S)	1415
LINE	1085 USED FOR LINE(S)	1494
LINE	1088 USED FOR LINE(S)	1495
LINE	1097 USED FOR LINE(S)	1506
LINE	1100 USED FOR LINE(S)	1507
LINE	1109 USED FOR LINE(S)	1518
LINE	1112 USED FOR LINE(S)	1519
LINE	1118 USED FOR LINE(S)	1532
LINE	1119 USED FOR LINE(S)	1534
LINE	1126 USED FOR LINE(S)	1540
LINE	1127 USED FOR LINE(S)	1542

LINE	1134	USED FOR LINE(S)	1548
LINE	1135	USED FOR LINE(S)	1550
LINE	1142	USED FOR LINE(S)	1556
LINE	1143	USED FOR LINE(S)	1558
LINE	1150	USED FOR LINE(S)	1564
LINE	1151	USED FOR LINE(S)	1566
LINE	1158	USED FOR LINE(S)	1572
LINE	1159	USED FOR LINE(S)	1574
LINE	1165	USED FOR LINE(S)	1578
LINE	1167	USED FOR LINE(S)	1579
LINE	1168	USED FOR LINE(S)	1588
LINE	1169	USED FOR LINE(S)	1590
LINE	1174	USED FOR LINE(S)	1594
LINE	1175	USED FOR LINE(S)	1596
LINE	1183	USED FOR LINE(S)	1597
LINE	1185	USED FOR LINE(S)	1598
LINE	1186	USED FOR LINE(S)	1605
LINE	1187	USED FOR LINE(S)	1607
LINE	1191	USED FOR LINE(S)	1610
LINE	1192	USED FOR LINE(S)	1612
LINE	1199	USED FOR LINE(S)	1613
LINE	1201	USED FOR LINE(S)	1614
LINE	1202	USED FOR LINE(S)	1621
LINE	1203	USED FOR LINE(S)	1623
LINE	1207	USED FOR LINE(S)	1626
LINE	1208	USED FOR LINE(S)	1628
LINE	1216	USED FOR LINE(S)	1629
LINE	1218	USED FOR LINE(S)	1630
LINE	1219	USED FOR LINE(S)	1639
LINE	1220	USED FOR LINE(S)	1641
LINE	1225	USED FOR LINE(S)	1645
LINE	1226	USED FOR LINE(S)	1647
LINE	1234	USED FOR LINE(S)	1648
LINE	1236	USED FOR LINE(S)	1649
LINE	1237	USED FOR LINE(S)	1656
LINE	1238	USED FOR LINE(S)	1658
LINE	1242	USED FOR LINE(S)	1661
LINE	1243	USED FOR LINE(S)	1663
LINE	1250	USED FOR LINE(S)	1664
LINE	1252	USED FOR LINE(S)	1665
LINE	1253	USED FOR LINE(S)	1672
LINE	1254	USED FOR LINE(S)	1674
LINE	1258	USED FOR LINE(S)	1677
LINE	1259	USED FOR LINE(S)	1679
LINE	1266	USED FOR LINE(S)	1680
LINE	1268	USED FOR LINE(S)	1681
LINE	1269	USED FOR LINE(S)	1688
LINE	1270	USED FOR LINE(S)	1690
LINE	1274	USED FOR LINE(S)	1693
LINE	1275	USED FOR LINE(S)	1695
AREA	89	USED FOR AREA(S)	1148
AREA	102	USED FOR AREA(S)	423
AREA	105	USED FOR AREA(S)	1161
AREA	118	USED FOR AREA(S)	439
AREA	124	USED FOR AREA(S)	1168
AREA	127	USED FOR AREA(S)	453
AREA	133	USED FOR AREA(S)	1176
AREA	136	USED FOR AREA(S)	462
AREA	142	USED FOR AREA(S)	1184
AREA	145	USED FOR AREA(S)	469
AREA	151	USED FOR AREA(S)	1192
AREA	154	USED FOR AREA(S)	478
AREA	169	USED FOR AREA(S)	1347
AREA	178	USED FOR AREA(S)	633
AREA	185	USED FOR AREA(S)	640
AREA	194	USED FOR AREA(S)	1350
AREA	201	USED FOR AREA(S)	645
AREA	210	USED FOR AREA(S)	1355
AREA	217	USED FOR AREA(S)	1277
AREA	219	USED FOR AREA(S)	1362

AREA	228	USED	FOR	AREA(S)	648
AREA	230	USED	FOR	AREA(S)	555
AREA	233	USED	FOR	AREA(S)	1289
AREA	235	USED	FOR	AREA(S)	654
AREA	244	USED	FOR	AREA(S)	1364
AREA	246	USED	FOR	AREA(S)	567
AREA	249	USED	FOR	AREA(S)	1301
AREA	251	USED	FOR	AREA(S)	658
AREA	260	USED	FOR	AREA(S)	1368
AREA	262	USED	FOR	AREA(S)	579
AREA	265	USED	FOR	AREA(S)	1374
AREA	268	USED	FOR	AREA(S)	1307
AREA	271	USED	FOR	AREA(S)	593
AREA	274	USED	FOR	AREA(S)	660
AREA	277	USED	FOR	AREA(S)	1314
AREA	280	USED	FOR	AREA(S)	600
AREA	283	USED	FOR	AREA(S)	666
AREA	286	USED	FOR	AREA(S)	1321
AREA	289	USED	FOR	AREA(S)	607
AREA	292	USED	FOR	AREA(S)	1376
AREA	295	USED	FOR	AREA(S)	1328
AREA	298	USED	FOR	AREA(S)	614
AREA	301	USED	FOR	AREA(S)	670
AREA	304	USED	FOR	AREA(S)	1335
AREA	307	USED	FOR	AREA(S)	621
AREA	310	USED	FOR	AREA(S)	1380
AREA	313	USED	FOR	AREA(S)	1342
AREA	316	USED	FOR	AREA(S)	628
AREA	319	USED	FOR	AREA(S)	1386
AREA	321	USED	FOR	AREA(S)	672
AREA	323	USED	FOR	AREA(S)	679
AREA	325	USED	FOR	AREA(S)	1389
AREA	327	USED	FOR	AREA(S)	684
AREA	329	USED	FOR	AREA(S)	1394
AREA	331	USED	FOR	AREA(S)	1401
AREA	333	USED	FOR	AREA(S)	687
AREA	335	USED	FOR	AREA(S)	693
AREA	337	USED	FOR	AREA(S)	1403
AREA	339	USED	FOR	AREA(S)	697
AREA	341	USED	FOR	AREA(S)	1407
AREA	343	USED	FOR	AREA(S)	1413
AREA	345	USED	FOR	AREA(S)	699
AREA	347	USED	FOR	AREA(S)	705
AREA	349	USED	FOR	AREA(S)	1415
AREA	351	USED	FOR	AREA(S)	709
AREA	353	USED	FOR	AREA(S)	1419
AREA	355	USED	FOR	AREA(S)	1425
AREA	357	USED	FOR	AREA(S)	711
AREA	359	USED	FOR	AREA(S)	717
AREA	361	USED	FOR	AREA(S)	1427
AREA	363	USED	FOR	AREA(S)	721
AREA	365	USED	FOR	AREA(S)	1431
AREA	436	USED	FOR	AREA(S)	779
AREA	449	USED	FOR	AREA(S)	795
AREA	456	USED	FOR	AREA(S)	809
AREA	464	USED	FOR	AREA(S)	818
AREA	472	USED	FOR	AREA(S)	825
AREA	480	USED	FOR	AREA(S)	834
AREA	565	USED	FOR	AREA(S)	911
AREA	577	USED	FOR	AREA(S)	923
AREA	589	USED	FOR	AREA(S)	935
AREA	595	USED	FOR	AREA(S)	949
AREA	602	USED	FOR	AREA(S)	956
AREA	609	USED	FOR	AREA(S)	963
AREA	616	USED	FOR	AREA(S)	970
AREA	623	USED	FOR	AREA(S)	977
AREA	630	USED	FOR	AREA(S)	984
AREA	635	USED	FOR	AREA(S)	989
AREA	638	USED	FOR	AREA(S)	996
AREA	643	USED	FOR	AREA(S)	1001

AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000

ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00
ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
XC,YC,ZC= -.32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
XC,YC,ZC= -.32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= .32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= .32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= -.32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= -.32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0

NSLA,S,1,
ESURF,

Inner SS. Side of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #3

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #3

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation - Between Can and IB

Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO          1 STEP          1
```

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

```
UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00
```

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #2

ELEMENT TYPE SET TO 26

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z    BETWEEN 1.2336    AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z    BETWEEN -100.00    AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X    BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=X    BETWEEN .30490    AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X    BETWEEN .30490    AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT    FOR ITEM=LOC COMPONENT=Z    BETWEEN -1.5099    AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
```

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.210 TIME= 13:51:19
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360
KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.130

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21w2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:51:51 NOV 04, 1995 CP= 107.260
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.690 TIME= 13:51:52
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5876.040

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:28:09 NOV 04, 1995 CP= 5876.040
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5876.660 TIME= 15:28:09
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7770.220

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH
/COM,
/AUX12,
ESEL,S,TYPE,,6,

NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,glscangap,

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:59:47 NOV 04, 1995 CP= 7770.300
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE SET TO 18
SE,glscangap,
SE,iobargap,

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 6 TO 6 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 16 TO 16 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7773.070

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21w2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....

DONT MESH; Either Assume its VOID or its meshed earlier

This section used only if both rad. and He conducti
is used in the model.

He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,
VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:00:03 NOV 04, 1995 CP= 7782.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7792.300

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7792.310 TIME= 16:00:13
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1400304 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7794.670 TIME= 16:00:16
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:00:16 NOV 04, 1995 CP= 7794.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7796.110 TIME= 16:00:17
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7796.560 TIME= 16:00:18
 Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
 procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
 TIME AT END OF THE LOAD STEP.10000E-05
 AUTOMATIC TIME STEPPING ON
 INITIAL NUMBER OF SUBSTEPS 0
 MAXIMUM NUMBER OF SUBSTEPS 0
 MINIMUM NUMBER OF SUBSTEPS 1
 MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
 STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19950.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.46736E-12	IXX = .4708E+05	IXX = .4678E+05
YC = -.20872E-01	IYY = .4664E+05	IYY = .4636E+05
ZC = -.11937	IZZ = .1027E+05	IZZ = .1026E+05
	IXY = .8715E-08	IXY = .8910E-08
	IYZ = .4642E-10	IYZ = 49.70
	IZX = -.2956E-08	IZX = -.1843E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	258.158

Range of element maximum matrix coefficients in global coordinates
 Maximum= 11.1632414 at element 4464.
 Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7835.310 TIME= 16:02:01
 Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	22.160	.003
11	320	SHELL57	.780	.002
18	2	MATRIX50	5.420	2.710

Time at end of element matrix formulation CP= 7835.31.
 HT FLOW CONVERGENCE VALUE= 155.7 CRITERION= .1557

Estimated number of active DOF= 8639.
 Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8909.76.

Equation solver maximum pivot= 45.7740153 at node 8097 TEMP.
 Equation solver minimum pivot= 0.217834822 at node 3498 TEMP.
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.5
 HT FLOW CONVERGENCE VALUE= 460.2 CRITERION= .9967E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.20
 HT FLOW CONVERGENCE VALUE= 55.44 CRITERION= .9967E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.24
 HT FLOW CONVERGENCE VALUE= 10.29 CRITERION= .9967E-01
 EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9911
 HT FLOW CONVERGENCE VALUE= .6875 CRITERION= .9967E-01
 EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2102
 HT FLOW CONVERGENCE VALUE= .1698 CRITERION= .9967E-01
 EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1589E-01
 HT FLOW CONVERGENCE VALUE= .9916E-02 CRITERION= .9967E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.340	.002
11	320	SHELL57	.430	.001
18	2	MATRIX50	8.470	4.235

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.250	.000
11	320	SHELL57	.020	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
 *** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS
 ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
 R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS
 BUFFER SIZE USED= 4096
 57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21w2.emat
 5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21w2.esav
 58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21w2.tri
 .047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21w2.dsub
 5.297 MB WRITTEN ON RESULTS FILE: glsh21w2.rth

Solve steady-state for initial conditions
 with WP surface temperatures from repository
 steady-state solution.
 Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
 RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1400518 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14488.000 TIME= 18:12:01
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14488.440 TIME= 18:12:01
The step data was checked and warning messages were found.
Please review output or errors file (glsh21w2.err) for these warning messages.

*** NOTE *** CP= 14488.440 TIME= 18:12:01
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:12:01 NOV 04, 1995 CP= 14488.440
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .9914E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3170E-02
HT FLOW CONVERGENCE VALUE= .2491E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .20000E-05 TIME INC = .10000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21w2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

Time substep ranges from 10 sec to 1/4 loadstep

NSUBST,10,20,4,ON

Begin Transient

Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07

TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

```
960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION      1
1475.75403      .0000000000E+00 .0000000000E+00 .0000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES      1 TO 10009 BY 1
REAL= 26.1400518      IMAG= .0000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14778.110 TIME= 18:22:29
This load step will be a static (steady-state) step.
```


*** NOTE *** CP= 14778.550 TIME= 18:22:29
The step data was checked and warning messages were found.
Please review output or errors file (glsh21w2.err) for these warning messages.

*** NOTE *** CP= 14778.550 TIME= 18:22:29
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:22:29 NOV 04, 1995 CP= 14778.550
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .2491E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2408E-03
HT FLOW CONVERGENCE VALUE= .1472E-03 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 8
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15052.290 TIME= 18:32:31
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:32:31 NOV 04, 1995 CP= 15052.730
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.72 CRITERION= .1023
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.866
HT FLOW CONVERGENCE VALUE= 5.173 CRITERION= .9659E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.087
HT FLOW CONVERGENCE VALUE= .9176 CRITERION= .9659E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7921E-01
HT FLOW CONVERGENCE VALUE= .5475E-01 CRITERION= .9659E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 11
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15701.300 TIME= 18:55:00
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:55:00 NOV 04, 1995 CP= 15701.740
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 23.88 CRITERION= .9673E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.311
HT FLOW CONVERGENCE VALUE= 3.302 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7070
HT FLOW CONVERGENCE VALUE= .5891 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5452E-01
HT FLOW CONVERGENCE VALUE= .3494E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 14
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16343.380 TIME= 19:17:23
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:17:23 NOV 04, 1995 CP= 16343.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 18.57 CRITERION= .9303E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.505
HT FLOW CONVERGENCE VALUE= 2.368 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5155
HT FLOW CONVERGENCE VALUE= .4224 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4131E-01
HT FLOW CONVERGENCE VALUE= .2508E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 17
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16984.970 TIME= 19:39:43
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:39:43 NOV 04, 1995 CP= 16985.410
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.45 CRITERION= .9013E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.042
HT FLOW CONVERGENCE VALUE= 1.852 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4072
HT FLOW CONVERGENCE VALUE= .3270 CRITERION= .8883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3310E-01
HT FLOW CONVERGENCE VALUE= .1929E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 20
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17626.530 TIME= 20:02:05
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:02:05 NOV 04, 1995 CP= 17626.970
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.29 CRITERION= .8764E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.729
HT FLOW CONVERGENCE VALUE= 1.515 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3355
HT FLOW CONVERGENCE VALUE= .2637 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2736E-01
HT FLOW CONVERGENCE VALUE= .1539E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 23
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18268.260 TIME= 20:24:24
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:24:24 NOV 04, 1995 CP= 18268.710
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 11.69 CRITERION= .8543E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.500
HT FLOW CONVERGENCE VALUE= 1.275 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2853
HT FLOW CONVERGENCE VALUE= .2184 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2309E-01
HT FLOW CONVERGENCE VALUE= .1259E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 26
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18910.380 TIME= 20:46:45
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:46:45 NOV 04, 1995 CP= 18910.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.44 CRITERION= .8343E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.325
HT FLOW CONVERGENCE VALUE= 1.096 CRITERION= .8280E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2471
HT FLOW CONVERGENCE VALUE= .1846 CRITERION= .8280E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1981E-01
HT FLOW CONVERGENCE VALUE= .1050E-01 CRITERION= .8280E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 29
 *** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19552.840 TIME= 21:09:05
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 21:09:05 NOV 04, 1995 CP= 19553.290
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.432 CRITERION= .8163E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.185
 HT FLOW CONVERGENCE VALUE= .9581 CRITERION= .8110E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2167
 HT FLOW CONVERGENCE VALUE= .1583 CRITERION= .8110E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1708E-01
 HT FLOW CONVERGENCE VALUE= .8836E-02 CRITERION= .8110E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 32
 *** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20199.900 TIME= 21:31:31
 This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 21:31:31 NOV 04, 1995 CP= 20200.340
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 8.601 CRITERION= .7998E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.072
 HT FLOW CONVERGENCE VALUE= .8473 CRITERION= .7954E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1923
 HT FLOW CONVERGENCE VALUE= .1375 CRITERION= .7954E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1495E-01
 HT FLOW CONVERGENCE VALUE= .7542E-02 CRITERION= .7954E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 35
 *** TIME = .284019E+08 TIME INC = .315576E+07
 Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08
 TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
 1156.10879 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=

IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 46.6526711 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20848.690 TIME= 21:53:56
This load step will be a static (steady-state) step.

*** NOTE *** CP= 20849.140 TIME= 21:53:56
The step data was checked and warning messages were found.
Please review output or errors file (glsh21w2.err) for these warning
messages.

*** NOTE *** CP= 20849.140 TIME= 21:53:56

Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 21:53:56 NOV 04, 1995 CP= 20849.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 7.900 CRITERION= .7847E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9767
HT FLOW CONVERGENCE VALUE= .7568 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1722
HT FLOW CONVERGENCE VALUE= .1207 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1318E-01
HT FLOW CONVERGENCE VALUE= .6498E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 38
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21497.860 TIME= 22:16:22
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:16:22 NOV 04, 1995 CP= 21498.300
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 54.46 CRITERION= .8678E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.693
HT FLOW CONVERGENCE VALUE= 4.301 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.018
HT FLOW CONVERGENCE VALUE= .6117 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6504E-01
HT FLOW CONVERGENCE VALUE= .2756E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 41
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22139.560 TIME= 22:38:41
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 22:38:42 NOV 04, 1995 CP= 22140.000
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 33.40 CRITERION= .7127E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.938
 HT FLOW CONVERGENCE VALUE= 2.401 CRITERION= .6316E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5499
 HT FLOW CONVERGENCE VALUE= .3009 CRITERION= .6316E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3024E-01
 HT FLOW CONVERGENCE VALUE= .1180E-01 CRITERION= .6316E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 44
 *** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22788.330 TIME= 23:01:07
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:01:07 NOV 04, 1995 CP= 22788.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 23.86 CRITERION= .6454E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.744
 HT FLOW CONVERGENCE VALUE= 1.635 CRITERION= .6005E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3637
 HT FLOW CONVERGENCE VALUE= .1860 CRITERION= .6005E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1762E-01
 HT FLOW CONVERGENCE VALUE= .6540E-02 CRITERION= .6005E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 47
 *** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23431.120 TIME= 23:23:27
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 23:23:27 NOV 04, 1995 CP= 23431.570
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 18.77 CRITERION= .6076E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.118
 HT FLOW CONVERGENCE VALUE= 1.237 CRITERION= .5783E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2708
 HT FLOW CONVERGENCE VALUE= .1315 CRITERION= .5783E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1202E-01
 HT FLOW CONVERGENCE VALUE= .4308E-02 CRITERION= .5783E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 50
 *** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24080.310 TIME= 23:45:54
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:45:54 NOV 04, 1995 CP= 24080.750
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.63 CRITERION= .5816E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.738
HT FLOW CONVERGENCE VALUE= .9890 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2151
HT FLOW CONVERGENCE VALUE= .1005 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9058E-02
HT FLOW CONVERGENCE VALUE= .3139E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 53
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24728.490 TIME= 00:08:19
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:08:19 NOV 05, 1995 CP= 24728.930
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.55 CRITERION= .5614E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.487
HT FLOW CONVERGENCE VALUE= .8223 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1784
HT FLOW CONVERGENCE VALUE= .8078E-01 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7275E-02
HT FLOW CONVERGENCE VALUE= .2437E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 56
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25378.350 TIME= 00:30:44
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:30:44 NOV 05, 1995 CP= 25378.790
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 12.31 CRITERION= .5451E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.336
HT FLOW CONVERGENCE VALUE= .7197 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1558
HT FLOW CONVERGENCE VALUE= .6839E-01 CRITERION= .5312E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6131E-02
HT FLOW CONVERGENCE VALUE= .1999E-02 CRITERION= .5312E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 59
*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26021.180 TIME= 00:53:03
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 00:53:04 NOV 05, 1995 CP= 26021.620
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.748 CRITERION= .5271E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.045
HT FLOW CONVERGENCE VALUE= .5341 CRITERION= .5182E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1174
HT FLOW CONVERGENCE VALUE= .5115E-01 CRITERION= .5182E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 61
*** TIME = .284018E+09 TIME INC = .315576E+08
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 68.6460010 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26484.530 TIME= 01:09:19
This load step will be a static (steady-state) step.

*** NOTE *** CP= 26484.970 TIME= 01:09:19
The step data was checked and warning messages were found.
Please review output or errors file (glsh21w2.err) for these warning
messages.

*** NOTE *** CP= 26484.970 TIME= 01:09:19
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:09:19 NOV 05, 1995 CP= 26484.970
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 22
TIME AT END OF THE LOAD STEP.31558E+09
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 8.422 CRITERION= .5126E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8945
 HT FLOW CONVERGENCE VALUE= .4397 CRITERION= .5058E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9730E-01
 HT FLOW CONVERGENCE VALUE= .4166E-01 CRITERION= .5058E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 63
 *** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26942.760 TIME= 01:25:28
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 01:25:28 NOV 05, 1995 CP= 26943.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 55.30 CRITERION= .6758E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.795
 HT FLOW CONVERGENCE VALUE= 2.037 CRITERION= .4021E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5153
 HT FLOW CONVERGENCE VALUE= .1725 CRITERION= .4021E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1877E-01
 HT FLOW CONVERGENCE VALUE= .4373E-02 CRITERION= .4021E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 66
 *** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27590.430 TIME= 01:47:53
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 01:47:54 NOV 05, 1995 CP= 27590.870
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.04 CRITERION= .3993E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.170
 HT FLOW CONVERGENCE VALUE= .9403 CRITERION= .3214E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2183
 HT FLOW CONVERGENCE VALUE= .5800E-01 CRITERION= .3214E-01
 EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7881E-02
 HT FLOW CONVERGENCE VALUE= .1469E-02 CRITERION= .3214E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
 *** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 69
 *** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28238.530 TIME= 02:10:18
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 02:10:19 NOV 05, 1995 CP= 28238.970
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.122 CRITERION= .2661E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.262
HT FLOW CONVERGENCE VALUE= .6109 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9441E-01
HT FLOW CONVERGENCE VALUE= .1914E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 71
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28702.050 TIME= 02:26:34
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:26:34 NOV 05, 1995 CP= 28702.500
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.019 CRITERION= .2078E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.676
HT FLOW CONVERGENCE VALUE= .4396 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5166E-01
HT FLOW CONVERGENCE VALUE= .7479E-02 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 73
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29160.850 TIME= 02:42:43
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:42:43 NOV 05, 1995 CP= 29161.290
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 4.417 CRITERION= .1696E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.948
HT FLOW CONVERGENCE VALUE= .3094 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3124E-01
HT FLOW CONVERGENCE VALUE= .3249E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 75
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29624.090 TIME= 02:58:58
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:58:58 NOV 05, 1995 CP= 29624.540
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 4.384 CRITERION= .1407E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.312

HT FLOW CONVERGENCE VALUE= .2190 CRITERION= .1373E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1922E-01
 HT FLOW CONVERGENCE VALUE= .1495E-02 CRITERION= .1373E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 77
 *** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30082.770 TIME= 03:15:07
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:15:08 NOV 05, 1995 CP= 30083.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.633 CRITERION= .1237E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.901
 HT FLOW CONVERGENCE VALUE= .1695 CRITERION= .1128E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1065E-01
 HT FLOW CONVERGENCE VALUE= .7578E-03 CRITERION= .1128E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 79
 *** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30544.980 TIME= 03:31:22
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:31:22 NOV 05, 1995 CP= 30545.430
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 4.714 CRITERION= .1028E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.347
 HT FLOW CONVERGENCE VALUE= .1160 CRITERION= .9340E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7916E-02
 HT FLOW CONVERGENCE VALUE= .4444E-03 CRITERION= .9340E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 81
 *** TIME = .284018E+10 TIME INC = .315576E+09
 Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10
 TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
 115.610895 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=

IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 75.6848701 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31007.560 TIME= 03:47:36
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31008.000 TIME= 03:47:37
The step data was checked and warning messages were found.
Please review output or errors file (glsh21w2.err) for these warning
messages.

*** NOTE *** CP= 31008.010 TIME= 03:47:37

Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:47:37 NOV 05, 1995 CP= 31008.010
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
TIME AT END OF THE LOAD STEP.31558E+10
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 4.133 CRITERION= .8701E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.918
HT FLOW CONVERGENCE VALUE= .8158E-01 CRITERION= .7808E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6429E-02
HT FLOW CONVERGENCE VALUE= .2817E-03 CRITERION= .7808E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 83
*** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31470.670 TIME= 04:03:50
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:03:51 NOV 05, 1995 CP= 31471.110
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 20.96 CRITERION= .2040E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.482
HT FLOW CONVERGENCE VALUE= .1933 CRITERION= .2424E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6621E-01
HT FLOW CONVERGENCE VALUE= .1155E-02 CRITERION= .2424E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 85
*** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31929.400 TIME= 04:20:00
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:20:01 NOV 05, 1995 CP= 31929.850

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.55 CRITERION= .1362E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.254
HT FLOW CONVERGENCE VALUE= .2028E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3009E-02
HT FLOW CONVERGENCE VALUE= .3204E-04 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 87
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32393.030 TIME= 04:36:15
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:36:16 NOV 05, 1995 CP= 32393.480
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 7.346 CRITERION= .7454E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.130
HT FLOW CONVERGENCE VALUE= .1217E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2349E-02
HT FLOW CONVERGENCE VALUE= .2146E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 89
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32851.350 TIME= 04:52:24
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:52:25 NOV 05, 1995 CP= 32851.790
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.788 CRITERION= .5881E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8759
HT FLOW CONVERGENCE VALUE= .8144E-02 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1612E-02
HT FLOW CONVERGENCE VALUE= .1218E-04 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 91
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33314.780 TIME= 05:08:39
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:08:40 NOV 05, 1995 CP= 33315.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 6.625 CRITERION= .6680E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9247
HT FLOW CONVERGENCE VALUE= .7509E-02 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1555E-02
HT FLOW CONVERGENCE VALUE= .9833E-05 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 93
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33777.880 TIME= 05:24:53
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:24:53 NOV 05, 1995 CP= 33778.320
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 6.571 CRITERION= .6609E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8878
HT FLOW CONVERGENCE VALUE= .6105E-02 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1292E-02
HT FLOW CONVERGENCE VALUE= .6783E-05 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 95
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34241.510 TIME= 05:41:08
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:41:09 NOV 05, 1995 CP= 34241.960
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 6.273 CRITERION= .6300E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8305
HT FLOW CONVERGENCE VALUE= .4800E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1032E-02
HT FLOW CONVERGENCE VALUE= .4492E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 97
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34700.310 TIME= 05:57:18
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:57:19 NOV 05, 1995 CP= 34700.750
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.929 CRITERION= .5948E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7725
HT FLOW CONVERGENCE VALUE= .3748E-02 CRITERION= .4900E-03

EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8166E-03
HT FLOW CONVERGENCE VALUE= .2947E-05 CRITERION= .4900E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 99
*** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35163.540 TIME= 06:13:33
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:13:34 NOV 05, 1995 CP= 35163.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 5.408 CRITERION= .5423E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6983
HT FLOW CONVERGENCE VALUE= .2834E-02 CRITERION= .4042E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6238E-03
HT FLOW CONVERGENCE VALUE= .1866E-05 CRITERION= .4042E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 101
*** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 35619.990

Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:29:40 NOV 05, 1995 CP= 35619.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME
2 NSOL 7655 TEMP peakgls 67.71 .3156E+11 129.9 .3156E+07

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= 3155791.56

***** ROUTINE COMPLETED ***** CP = 35620.300

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 06:29:43 NOV 05, 1995 CP= 35620.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM

27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+07

SET COMMAND GOT LOAD STEP= 4 SUBSTEP= 1 CUMULATIVE ITERATION= 11
TIME/FREQUENCY= .31558E+07

TITLE=
DHLW WP at Time of Peak Temp. (.100001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (.100001 years)

*** WARNING *** CP= 35659.970 TIME= 06:30:38
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35660.000 TIME= 06:30:39
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 50
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.

- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 31.815 BY .80917 TO 134.58

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 35707.140 TIME= 06:31:32
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35707.170 TIME= 06:31:32
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 63
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 31.815 BY .80917 TO 134.58

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 35754.030 TIME= 06:32:26
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35754.060 TIME= 06:32:26
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 31.815 BY .80917 TO 134.58

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 35773.190 TIME= 06:32:48
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35773.220 TIME= 06:32:48
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 83
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 31.815 BY .80917 TO 134.58

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 35820.580 TIME= 06:33:41
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35820.620 TIME= 06:33:41
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 35829.030

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:33:51 NOV 05, 1995 CP= 35829.040
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

 Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
 VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
 VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
 VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
 VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
 VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
 VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
 VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
 VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
 VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	7952 TEMP	t94i045	67.70	.3156E+11	125.2 .3156E+07
3	NSOL	7726 TEMP	t94o045	67.70	.3156E+11	125.3 .3156E+07
4	NSOL	7730 TEMP	h94i045	67.74	.3156E+11	134.6 .1000E-05
5	NSOL	7654 TEMP	c94i045	67.72	.3156E+11	131.6 .1000E-05
6	NSOL	7686 TEMP	h94o045	67.65	.3156E+11	116.1 .3156E+07
7	NSOL	7667 TEMP	s94i045	67.53	.3156E+11	94.29 .6312E+09
8	NSOL	7929 TEMP	s94o045	67.53	.3156E+11	94.22 .6312E+09
9	NSOL	8013 TEMP	i94i045	56.93	31.56	84.01 .9467E+09
10	NSOL	8030 TEMP	i94o045	56.60	31.56	83.90 .9467E+09
11	NSOL	8145 TEMP	o94o045	56.24	31.56	83.78 .9467E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:33:55 NOV 05, 1995 CP= 35831.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.057	125.120	134.650	131.555	115.569	87.6554
.20000E-05	125.055	125.117	134.647	131.553	115.566	87.6527

31.558	125.055	125.117	134.647	131.553	115.566	87.6527
.31558E+07	125.211	125.271	134.518	131.537	116.064	89.0334
.63116E+07	124.840	124.899	133.872	130.979	115.961	89.7229
.94673E+07	124.245	124.302	133.016	130.196	115.589	90.0732
.12623E+08	123.581	123.636	132.111	129.355	115.121	90.2646
.15779E+08	122.905	122.958	131.212	128.513	114.621	90.3680
.18935E+08	122.239	122.292	130.341	127.695	114.117	90.4184
.22090E+08	121.594	121.645	129.505	126.907	113.619	90.4343
.25246E+08	120.996	121.047	128.734	126.180	113.157	90.4414
.28402E+08	120.433	120.482	128.010	125.496	112.719	90.4380
.31558E+08	119.905	119.953	127.333	124.858	112.308	90.4297
.63115E+08	116.510	116.552	122.947	120.740	109.737	90.5879
.94673E+08	115.152	115.191	121.089	119.036	108.848	91.1258
.12623E+09	114.607	114.644	120.246	118.292	108.607	91.7603
.15779E+09	114.360	114.396	119.790	117.909	108.586	92.3651
.18935E+09	114.206	114.240	119.468	117.647	108.614	92.8979
.22090E+09	114.074	114.108	119.191	117.422	108.641	93.3604
.25246E+09	113.969	114.002	118.956	117.234	108.678	93.7884
.28402E+09	113.714	113.746	118.577	116.897	108.552	94.0291
.31558E+09	113.411	113.442	118.155	116.513	108.366	94.1890
.63115E+09	109.676	109.700	113.409	112.076	105.578	94.2914
.94673E+09	105.124	105.143	108.067	106.968	101.748	92.7063
.12623E+10	100.423	100.438	102.750	101.839	97.6241	90.3483
.15779E+10	96.2050	96.2174	98.0548	97.2978	93.8829	88.0048
.18935E+10	92.6199	92.6299	94.1018	93.4728	90.6913	85.9154
.22090E+10	89.5953	89.6034	90.7915	90.2680	87.9911	84.0898
.25246E+10	86.9238	86.9304	87.8976	87.4597	85.5823	82.3718
.28402E+10	84.7558	84.7613	85.5564	85.1884	83.6288	80.9656
.31558E+10	82.9784	82.9830	83.6437	83.3324	82.0253	79.7961
.63115E+10	75.8974	75.8988	76.0989	75.9976	75.5877	74.8920
.94673E+10	73.7130	73.7139	73.8475	73.7783	73.5015	73.0325
.12623E+11	72.6127	72.6135	72.7200	72.6642	72.4421	72.0662
.15779E+11	71.7580	71.7586	71.8456	71.7996	71.6174	71.3093
.18935E+11	70.8507	70.8512	70.9224	70.8843	70.7345	70.4812
.22090E+11	69.9770	69.9774	70.0357	70.0043	69.8809	69.6724
.25246E+11	69.1580	69.1583	69.2062	69.1801	69.0785	68.9068
.28402E+11	68.3949	68.3951	68.4345	68.4129	68.3290	68.1875
.31558E+11	67.7042	67.7044	67.7367	67.7189	67.6496	67.5328

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:33:55 NOV 05, 1995 CP= 35831.250
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP	8013 TEMP	8030 TEMP	8145 TEMP
	s94o045	i94i045	i94o045	o94o045
.10000E-05	87.4828	56.9361	56.5991	56.2395
.20000E-05	87.4801	56.9347	56.5978	56.2382
31.558	87.4801	56.9346	56.5976	56.2380
.31558E+07	88.8666	59.8236	59.4972	59.1486
.63116E+07	89.5610	61.6681	61.3512	61.0126
.94673E+07	89.9158	62.9796	62.6713	62.3419
.12623E+08	90.1113	64.0049	63.7046	63.3835
.15779E+08	90.2185	64.8475	64.5545	64.2412
.18935E+08	90.2723	65.5622	65.2759	64.9697
.22090E+08	90.2914	66.1819	65.9017	65.6022
.25246E+08	90.3013	66.7360	66.4615	66.1680
.28402E+08	90.3007	67.2345	66.9653	66.6774
.31558E+08	90.2948	67.6884	67.4241	67.1414
.63115E+08	90.4699	70.9712	70.7399	70.4924
.94673E+08	91.0167	73.1774	72.9632	72.7341
.12623E+09	91.6566	74.8612	74.6576	74.4397
.15779E+09	92.2653	76.2258	76.0297	75.8198
.18935E+09	92.8012	77.3673	77.1773	76.9738

.22090E+09	93.2665	78.3500	78.1653	77.9673
.25246E+09	93.6969	79.2407	79.0607	78.8677
.28402E+09	93.9400	79.8954	79.7197	79.5314
.31558E+09	94.1020	80.4308	80.2592	80.0755
.63115E+09	94.2221	83.4793	83.3428	83.1966
.94673E+09	92.6508	84.0111	83.9018	83.7848
.12623E+10	90.3035	83.2669	83.1791	83.0851
.15779E+10	87.9686	82.2049	82.1339	82.0581
.18935E+10	85.8859	81.1426	81.0850	81.0235
.22090E+10	84.0656	80.1460	80.0990	80.0489
.25246E+10	82.3519	79.0893	79.0507	79.0095
.28402E+10	80.9491	78.2174	78.1853	78.1512
.31558E+10	79.7823	77.4776	77.4508	77.4222
.63115E+10	74.8877	74.1435	74.1351	74.1262
.94673E+10	73.0296	72.5203	72.5147	72.5087
.12623E+11	72.0638	71.6524	71.6479	71.6431
.15779E+11	71.3073	70.9680	70.9643	70.9604
.18935E+11	70.4796	70.1988	70.1957	70.1925
.22090E+11	69.6711	69.4385	69.4360	69.4334
.25246E+11	68.9058	68.7130	68.7109	68.7087
.28402E+11	68.1867	68.0268	68.0251	68.0233
.31558E+11	67.5321	67.3994	67.3980	67.3965

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 35831.460 TIME= 06:33:56
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7947 TEMP	t04i045	67.70	.3156E+11	124.2	.3156E+07
3	NSOL	7718 TEMP	t04o045	67.70	.3156E+11	124.3	.3156E+07
4	NSOL	7720 TEMP	h04i045	67.73	.3156E+11	133.7	.1000E-05
5	NSOL	7642 TEMP	c04i045	67.71	.3156E+11	130.4	.3156E+07
6	NSOL	7679 TEMP	h04o045	67.64	.3156E+11	115.0	.3156E+07
7	NSOL	7662 TEMP	s04i045	67.53	.3156E+11	93.80	.6312E+09
8	NSOL	7927 TEMP	s04o045	67.53	.3156E+11	93.73	.6312E+09
9	NSOL	8008 TEMP	i04i045	55.93	31.56	83.81	.9467E+09
10	NSOL	8027 TEMP	i04o045	55.58	31.56	83.69	.9467E+09
11	NSOL	8142 TEMP	o04o045	55.23	31.56	83.58	.9467E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:33:58 NOV 05, 1995 CP= 35833.390
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.031	124.097	133.727	130.325	114.424	86.2418
.20000E-05	124.028	124.095	133.724	130.323	114.422	86.2393
31.558	124.029	124.095	133.724	130.323	114.422	86.2393
.31558E+07	124.233	124.298	133.647	130.373	114.984	87.6935
.63116E+07	123.898	123.960	133.037	129.862	114.927	88.4374
.94673E+07	123.330	123.391	132.208	129.116	114.591	88.8322
.12623E+08	122.690	122.749	131.326	128.307	114.155	89.0618
.15779E+08	122.034	122.092	130.447	127.494	113.681	89.1989
.18935E+08	121.387	121.443	129.594	126.700	113.201	89.2794
.22090E+08	120.759	120.814	128.774	125.935	112.725	89.3226
.25246E+08	120.176	120.230	128.017	125.228	112.282	89.3544
.28402E+08	119.627	119.680	127.306	124.563	111.862	89.3737
.31558E+08	119.112	119.164	126.641	123.942	111.467	89.3863
.63115E+08	115.809	115.854	122.340	119.943	109.010	89.6865
.94673E+08	114.504	114.545	120.531	118.304	108.183	90.3012
.12623E+09	113.993	114.033	119.721	117.604	107.983	90.9847
.15779E+09	113.772	113.811	119.289	117.253	107.991	91.6251
.18935E+09	113.639	113.676	118.987	117.016	108.044	92.1865
.22090E+09	113.525	113.561	118.726	116.813	108.090	92.6735
.25246E+09	113.436	113.471	118.506	116.644	108.146	93.1232
.28402E+09	113.195	113.229	118.140	116.324	108.036	93.3831
.31558E+09	112.905	112.938	117.729	115.955	107.863	93.5602
.63115E+09	109.266	109.292	113.068	111.632	105.181	93.7962
.94673E+09	104.784	104.805	107.784	106.605	101.424	92.3055
.12623E+10	100.138	100.155	102.511	101.536	97.3552	90.0192
.15779E+10	95.9659	95.9793	97.8527	97.0454	93.6585	87.7331
.18935E+10	92.4189	92.4297	93.9311	93.2617	90.5038	85.6903
.22090E+10	89.4263	89.4350	90.6472	90.0912	87.8340	83.9026
.25246E+10	86.7809	86.7880	87.7751	87.3106	85.4500	82.2151
.28402E+10	84.6347	84.6405	85.4522	85.0624	83.5169	80.8339
.31558E+10	82.8752	82.8801	83.5547	83.2252	81.9301	79.6845
.63115E+10	75.8628	75.8643	76.0687	75.9619	75.5559	74.8554
.94673E+10	73.6890	73.6900	73.8265	73.7536	73.4795	73.0073
.12623E+11	72.5933	72.5941	72.7029	72.6441	72.4242	72.0457
.15779E+11	71.7419	71.7425	71.8314	71.7830	71.6026	71.2924
.18935E+11	70.8373	70.8378	70.9105	70.8705	70.7222	70.4672
.22090E+11	69.9658	69.9663	70.0259	69.9928	69.8706	69.6608
.25246E+11	69.1487	69.1491	69.1980	69.1706	69.0699	68.8972
.28402E+11	68.3871	68.3874	68.4276	68.4049	68.3219	68.1795
.31558E+11	67.6977	67.6980	67.7310	67.7122	67.6437	67.5261

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:33:58 NOV 05, 1995 CP= 35833.410
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	86.0728	55.9288	55.5848	55.2327
.20000E-05	86.0702	55.9276	55.5836	55.2315
31.558	86.0702	55.9274	55.5834	55.2313
.31558E+07	87.5300	58.8931	58.5600	58.2185
.63116E+07	88.2788	60.7918	60.4684	60.1366
.94673E+07	88.6780	62.1460	61.8315	61.5086

.12623E+08	88.9116	63.2070	62.9007	62.5860
.15779E+08	89.0524	64.0804	63.7815	63.4744
.18935E+08	89.1363	64.8221	64.5301	64.2299
.22090E+08	89.1826	65.4657	65.1801	64.8864
.25246E+08	89.2172	66.0412	65.7614	65.4736
.28402E+08	89.2392	66.5591	66.2846	66.0023
.31558E+08	89.2542	67.0306	66.7612	66.4839
.63115E+08	89.5709	70.4280	70.1923	69.9495
.94673E+08	90.1943	72.6928	72.4746	72.2497
.12623E+09	90.8831	74.4129	74.2055	73.9915
.15779E+09	91.5274	75.8033	75.6036	75.3974
.18935E+09	92.0918	76.9653	76.7718	76.5719
.22090E+09	92.5815	77.9651	77.7770	77.5825
.25246E+09	93.0336	78.8709	78.6875	78.4980
.28402E+09	93.2957	79.5383	79.3594	79.1745
.31558E+09	93.4750	80.0852	79.9107	79.7301
.63115E+09	93.7283	83.2185	83.0796	82.9358
.94673E+09	92.2511	83.8053	83.6941	83.5790
.12623E+10	89.9754	83.1006	83.0112	82.9188
.15779E+10	87.6977	82.0692	81.9970	81.9225
.18935E+10	85.6614	81.0312	80.9726	80.9121
.22090E+10	83.8790	80.0541	80.0062	79.9569
.25246E+10	82.1957	79.0127	78.9734	78.9329
.28402E+10	80.8177	78.1532	78.1206	78.0870
.31558E+10	79.6710	77.4234	77.3962	77.3681
.63115E+10	74.8512	74.1259	74.1174	74.1087
.94673E+10	73.0044	72.5082	72.5025	72.4966
.12623E+11	72.0434	71.6426	71.6380	71.6333
.15779E+11	71.2905	70.9599	70.9562	70.9523
.18935E+11	70.4656	70.1920	70.1889	70.1858
.22090E+11	69.6595	69.4329	69.4304	69.4278
.25246E+11	68.8961	68.7083	68.7062	68.7041
.28402E+11	68.1787	68.0229	68.0212	68.0194
.31558E+11	67.5254	67.3962	67.3947	67.3933

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35833.610 TIME= 06:33:58
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	63 TEMP	t01i135	67.70	.3156E+11	124.2	.3156E+07
3 NSOL	20 TEMP	t01o135	67.70	.3156E+11	124.3	.3156E+07

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4 NSOL 22 TEMP h01i135 67.73 .3156E+11 133.7 .1000E-05
5 NSOL 1 TEMP c01i135 67.71 .3156E+11 130.3 .3156E+07
6 NSOL 11 TEMP h01o135 67.64 .3156E+11 114.9 .3156E+07
7 NSOL 6 TEMP s01i135 67.53 .3156E+11 93.76 .6312E+09
8 NSOL 58 TEMP s01o135 67.53 .3156E+11 93.69 .6312E+09
9 NSOL 84 TEMP i01i135 55.78 31.56 83.77 .9467E+09
10 NSOL 106 TEMP i01o135 55.44 31.56 83.65 .9467E+09
11 NSOL 124 TEMP o01o135 55.09 31.56 83.54 .9467E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:34:00 NOV 05, 1995 CP= 35835.550
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.021	124.087	133.697	130.277	114.357	86.1562
.20000E-05	124.018	124.084	133.694	130.274	114.355	86.1536
31.558	124.018	124.084	133.694	130.274	114.355	86.1536
.31558E+07	124.223	124.287	133.618	130.326	114.920	87.6106
.63116E+07	123.888	123.950	133.008	129.816	114.864	88.3569
.94673E+07	123.320	123.381	132.180	129.072	114.530	88.7537
.12623E+08	122.680	122.739	131.299	128.264	114.095	88.9853
.15779E+08	122.025	122.082	130.420	127.451	113.623	89.1241
.18935E+08	121.378	121.434	129.568	126.658	113.143	89.2063
.22090E+08	120.750	120.805	128.748	125.894	112.668	89.2510
.25246E+08	120.168	120.221	127.992	125.188	112.227	89.2841
.28402E+08	119.618	119.671	127.281	124.524	111.808	89.3047
.31558E+08	119.103	119.155	126.617	123.903	111.414	89.3184
.63115E+08	115.801	115.846	122.319	119.909	108.963	89.6268
.94673E+08	114.496	114.538	120.511	118.272	108.140	90.2458
.12623E+09	113.986	114.026	119.702	117.573	107.941	90.9320
.15779E+09	113.766	113.804	119.271	117.224	107.951	91.5744
.18935E+09	113.632	113.669	118.969	116.988	108.005	92.1374
.22090E+09	113.519	113.555	118.709	116.785	108.053	92.6258
.25246E+09	113.430	113.465	118.489	116.617	108.109	93.0767
.28402E+09	113.189	113.223	118.124	116.298	108.000	93.3378
.31558E+09	112.899	112.932	117.713	115.930	107.829	93.5160
.63115E+09	109.261	109.288	113.055	111.612	105.153	93.7608
.94673E+09	104.780	104.801	107.774	106.588	101.401	92.2769
.12623E+10	100.135	100.151	102.503	101.523	97.3368	89.9959
.15779E+10	95.9631	95.9764	97.8456	97.0343	93.6435	87.7141
.18935E+10	92.4165	92.4273	93.9251	93.2526	90.4914	85.6747
.22090E+10	89.4243	89.4330	90.6423	90.0836	87.8239	83.8898
.25246E+10	86.7792	86.7863	87.7710	87.3043	85.4416	82.2044
.28402E+10	84.6332	84.6391	85.4488	85.0571	83.5099	80.8250
.31558E+10	82.8740	82.8788	83.5518	83.2207	81.9242	79.6770
.63115E+10	75.8624	75.8638	76.0678	75.9605	75.5540	74.8530
.94673E+10	73.6888	73.6897	73.8259	73.7526	73.4782	73.0057
.12623E+11	72.5930	72.5938	72.7024	72.6433	72.4232	72.0444
.15779E+11	71.7417	71.7424	71.8310	71.7823	71.6018	71.2913
.18935E+11	70.8371	70.8376	70.9102	70.8700	70.7215	70.4663
.22090E+11	69.9657	69.9661	70.0256	69.9924	69.8701	69.6601
.25246E+11	69.1486	69.1489	69.1977	69.1702	69.0695	68.8966
.28402E+11	68.3871	68.3874	68.4274	68.4046	68.3215	68.1790
.31558E+11	67.6976	67.6979	67.7308	67.7120	67.6434	67.5257

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:34:00 NOV 05, 1995 CP= 35835.560
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

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DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP s01o135	84 TEMP i01i135	106 TEMP i01o135	124 TEMP o01o135
.10000E-05	85.9870	55.7856	55.4411	55.0873
.20000E-05	85.9844	55.7844	55.4398	55.0861
31.558	85.9844	55.7842	55.4397	55.0859
.31558E+07	87.4470	58.7567	58.4231	58.0801
.63116E+07	88.1981	60.6609	60.3370	60.0037
.94673E+07	88.5994	62.0197	61.7048	61.3804
.12623E+08	88.8350	63.0848	62.7780	62.4618
.15779E+08	88.9775	63.9618	63.6624	63.3539
.18935E+08	89.0630	64.7067	64.4142	64.1127
.22090E+08	89.1109	65.3533	65.0672	64.7722
.25246E+08	89.1468	65.9315	65.6512	65.3621
.28402E+08	89.1700	66.4518	66.1769	65.8933
.31558E+08	89.1862	66.9256	66.6557	66.3772
.63115E+08	89.5111	70.3381	70.1020	69.8580
.94673E+08	90.1388	72.6106	72.3921	72.1662
.12623E+09	90.8304	74.3356	74.1279	73.9129
.15779E+09	91.4766	75.7295	75.5294	75.3223
.18935E+09	92.0427	76.8942	76.7004	76.4996
.22090E+09	92.5337	77.8964	77.7079	77.5126
.25246E+09	92.9870	78.8042	78.6206	78.4302
.28402E+09	93.2503	79.4736	79.2944	79.1086
.31558E+09	93.4306	80.0222	79.8474	79.6660
.63115E+09	93.6929	83.1693	83.0302	82.8857
.94673E+09	92.2225	83.7661	83.6548	83.5392
.12623E+10	89.9521	83.0691	82.9796	82.8867
.15779E+10	87.6786	82.0437	81.9714	81.8965
.18935E+10	85.6458	81.0103	80.9517	80.8910
.22090E+10	83.8661	80.0370	79.9891	79.9396
.25246E+10	82.1850	78.9986	78.9593	78.9186
.28402E+10	80.8088	78.1415	78.1088	78.0751
.31558E+10	79.6635	77.4136	77.3863	77.3581
.63115E+10	74.8488	74.1228	74.1143	74.1055
.94673E+10	73.0028	72.5061	72.5004	72.4945
.12623E+11	72.0421	71.6409	71.6363	71.6316
.15779E+11	71.2894	70.9585	70.9548	70.9509
.18935E+11	70.4647	70.1909	70.1878	70.1846
.22090E+11	69.6588	69.4320	69.4294	69.4268
.25246E+11	68.8955	68.7075	68.7054	68.7033
.28402E+11	68.1782	68.0222	68.0205	68.0187
.31558E+11	67.5250	67.3956	67.3942	67.3927

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 35835.770 TIME= 06:34:00
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045

VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045

VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045

VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045

VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045

VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	67.57	.3156E+11	99.46	.9467E+07
3 NSOL	7722 TEMP	tb4o045	67.57	.3156E+11	99.39	.9467E+07
4 NSOL	7724 TEMP	hb4i045	67.54	.3156E+11	96.20	.3156E+09
5 NSOL	7650 TEMP	cb4i045	67.52	.3156E+11	94.01	.6312E+09
6 NSOL	7682 TEMP	hb4o045	67.50	.3156E+11	91.82	.6312E+09
7 NSOL	7666 TEMP	sb4i045	67.47	.3156E+11	89.32	.6312E+09
8 NSOL	7928 TEMP	sb4o045	67.47	.3156E+11	89.29	.6312E+09
9 NSOL	8012 TEMP	fb4i045	52.53	31.56	82.74	.9467E+09
10 NSOL	8029 TEMP	fb4o045	52.25	31.56	82.65	.9467E+09
11 NSOL	8144 TEMP	ob4o045	51.97	31.56	82.56	.9467E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:02 NOV 05, 1995 CP= 35837.700
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	97.9085	97.8295	91.5857	86.8244	81.2612	74.8489
.20000E-05	97.9054	97.8263	91.5827	86.8217	81.2588	74.8466
31.558	97.9053	97.8262	91.5827	86.8217	81.2587	74.8465
.31558E+07	98.9803	98.9037	92.8655	88.2734	82.9119	76.7310
.63116E+07	99.3815	99.3071	93.4522	89.0035	83.8114	77.8272
.94673E+07	99.4614	99.3891	93.7012	89.3800	84.3376	78.5276
.12623E+08	99.4029	99.3325	93.7970	89.5905	84.6826	79.0293
.15779E+08	99.2760	99.2074	93.8112	89.7091	84.9232	79.4120
.18935E+08	99.1136	99.0466	93.7785	89.7719	85.0975	79.7163
.22090E+08	98.9323	98.8669	93.7170	89.7985	85.2268	79.9653
.25246E+08	98.7593	98.6953	93.6534	89.8152	85.3371	80.1848
.28402E+08	98.5894	98.5266	93.5845	89.8206	85.4291	80.3776
.31558E+08	98.4267	98.3651	93.5155	89.8203	85.5090	80.5509
.63115E+08	97.5491	97.4954	93.2699	90.0427	86.2769	81.9520
.94673E+08	97.5596	97.5100	93.6081	90.6278	87.1510	83.1601
.12623E+09	97.8771	97.8300	94.1257	91.2984	88.0012	84.2172
.15779E+09	98.2577	98.2123	94.6490	91.9319	88.7642	85.1289
.18935E+09	98.6106	98.5667	95.1165	92.4883	89.4247	85.9091
.22090E+09	98.9174	98.8747	95.5224	92.9707	89.9971	86.5846
.25246E+09	99.2059	99.1642	95.8995	93.4165	90.5232	87.2030
.28402E+09	99.3140	99.2734	96.0906	93.6709	90.8516	87.6167
.31558E+09	99.3466	99.3070	96.2017	93.8411	91.0909	87.9355
.63115E+09	98.3727	98.3414	95.8818	94.0070	91.8223	89.3190
.94673E+09	95.9435	95.9185	93.9569	92.4517	90.6961	88.6881
.12623E+10	92.9216	92.9017	91.3299	90.1139	88.6934	87.0717
.15779E+10	90.0582	90.0423	88.7776	87.7912	86.6369	85.3213
.18935E+10	87.5652	87.5523	86.5284	85.7239	84.7812	83.7083
.22090E+10	85.4240	85.4136	84.5797	83.9204	83.1468	82.2674
.25246E+10	83.4594	83.4509	82.7665	82.2222	81.5828	80.8567
.28402E+10	81.8607	81.8537	81.2872	80.8346	80.3024	79.6984
.31558E+10	80.5403	80.5344	80.0611	79.6815	79.2347	78.7280
.63115E+10	75.1176	75.1158	74.9692	74.8497	74.7085	74.5488
.94673E+10	73.1829	73.1817	73.0831	73.0022	72.9066	72.7984
.12623E+11	72.1860	72.1851	72.1061	72.0412	71.9643	71.8774

.15779E+11	71.4071	71.4063	71.3416	71.2883	71.2252	71.1538
.18935E+11	70.5612	70.5605	70.5074	70.4635	70.4115	70.3528
.22090E+11	69.7380	69.7375	69.6938	69.6576	69.6147	69.5663
.25246E+11	68.9605	68.9601	68.9242	68.8943	68.8589	68.8190
.28402E+11	68.2316	68.2313	68.2017	68.1770	68.1478	68.1148
.31558E+11	67.5690	67.5688	67.5443	67.5240	67.4998	67.4725

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:02 NOV 05, 1995 CP= 35837.710
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP	8012 TEMP	8029 TEMP	8144 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	74.7788	52.5325	52.2549	51.9720
.20000E-05	74.7765	52.5315	52.2538	51.9709
31.558	74.7765	52.5313	52.2536	51.9707
.31558E+07	76.6635	55.6065	55.3374	55.0637
.63116E+07	77.7619	57.6031	57.3417	57.0760
.94673E+07	78.4643	59.0465	58.7922	58.5340
.12623E+08	78.9677	60.1891	59.9412	59.6898
.15779E+08	79.3520	61.1371	60.8952	60.6500
.18935E+08	79.6578	61.9474	61.7110	61.4715
.22090E+08	79.9080	62.6546	62.4233	62.1890
.25246E+08	80.1288	63.2881	63.0614	62.8320
.28402E+08	80.3227	63.8597	63.6373	63.4123
.31558E+08	80.4969	64.3810	64.1627	63.9418
.63115E+08	81.9051	68.1174	67.9262	67.7333
.94673E+08	83.1168	70.5606	70.3835	70.2051
.12623E+09	84.1762	72.3911	72.2226	72.0531
.15779E+09	85.0895	73.8609	73.6987	73.5355
.18935E+09	85.8711	75.0868	74.9296	74.7715
.22090E+09	86.5477	76.1419	75.9890	75.8354
.25246E+09	87.1671	77.0972	76.9481	76.7984
.28402E+09	87.5817	77.8101	77.6647	77.5187
.31558E+09	87.9014	78.4000	78.2580	78.1155
.63115E+09	89.2920	81.8854	81.7723	81.6592
.94673E+09	88.6665	82.7388	82.6483	82.5578
.12623E+10	87.0542	82.2414	82.1686	82.0959
.15779E+10	85.3071	81.3737	81.3149	81.2563
.18935E+10	83.6967	80.4650	80.4172	80.3696
.22090E+10	82.2579	79.5907	79.5517	79.5129
.25246E+10	80.8489	78.6307	78.5986	78.5667
.28402E+10	79.6919	77.8358	77.8092	77.7828
.31558E+10	78.7225	77.1574	77.1352	77.1130
.63115E+10	74.5471	74.0424	74.0355	74.0286
.94673E+10	72.7973	72.4518	72.4471	72.4425
.12623E+11	71.8765	71.5973	71.5936	71.5899
.15779E+11	71.1531	70.9227	70.9197	70.9166
.18935E+11	70.3521	70.1614	70.1589	70.1564
.22090E+11	69.5657	69.4077	69.4056	69.4036
.25246E+11	68.8185	68.6875	68.6858	68.6841
.28402E+11	68.1144	68.0058	68.0043	68.0029
.31558E+11	67.4722	67.3820	67.3808	67.3797

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35837.920 TIME= 06:34:02
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135
 VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1033 TEMP	t01i135	67.57	.3156E+11	99.45	.9467E+07
3	NSOL	733 TEMP	t01o135	67.57	.3156E+11	99.37	.9467E+07
4	NSOL	735 TEMP	h01i135	67.54	.3156E+11	96.18	.3156E+09
5	NSOL	679 TEMP	c01i135	67.52	.3156E+11	93.99	.6312E+09
6	NSOL	704 TEMP	h01o135	67.50	.3156E+11	91.80	.6312E+09
7	NSOL	691 TEMP	s01i135	67.47	.3156E+11	89.29	.6312E+09
8	NSOL	1018 TEMP	s01o135	67.47	.3156E+11	89.26	.6312E+09
9	NSOL	1292 TEMP	i01i135	52.43	31.56	82.71	.9467E+09
10	NSOL	1307 TEMP	i01o135	52.15	31.56	82.62	.9467E+09
11	NSOL	2078 TEMP	o01o135	51.87	31.56	82.53	.9467E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:04 NOV 05, 1995 CP= 35839.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	97.8907	97.8114	91.5502	86.7719	81.1951	74.7720
.20000E-05	97.8875	97.8082	91.5473	86.7693	81.1927	74.7697
31.558	97.8874	97.8081	91.5473	86.7692	81.1926	74.7697
.31558E+07	98.9631	98.8863	92.8313	88.2228	82.8481	76.6569
.63116E+07	99.3648	99.2903	93.4191	88.9544	83.7496	77.7554
.94673E+07	99.4452	99.3727	93.6690	89.3322	84.2775	78.4578
.12623E+08	99.3871	99.3166	93.7655	89.5439	84.6241	78.9613
.15779E+08	99.2605	99.1918	93.7805	89.6636	84.8660	79.3457
.18935E+08	99.0985	99.0314	93.7485	89.7274	85.0416	79.6516
.22090E+08	98.9175	98.8519	93.6876	89.7549	85.1721	79.9019
.25246E+08	98.7448	98.6806	93.6245	89.7725	85.2835	80.1227
.28402E+08	98.5751	98.5121	93.5562	89.7786	85.3765	80.3167
.31558E+08	98.4126	98.3509	93.4876	89.7791	85.4573	80.4911
.63115E+08	97.5367	97.4829	93.2454	90.0065	86.2316	81.8997
.94673E+08	97.5481	97.4984	93.5854	90.5942	87.1091	83.1118
.12623E+09	97.8662	97.8190	94.1042	91.2666	87.9615	84.1714
.15779E+09	98.2472	98.2018	94.6283	91.9013	88.7260	85.0849
.18935E+09	98.6005	98.5565	95.0965	92.4587	89.3878	85.8666
.22090E+09	98.9076	98.8648	95.5030	92.9420	89.9612	86.5434
.25246E+09	99.1964	99.1546	95.8806	93.3885	90.4883	87.1629
.28402E+09	99.3047	99.2640	96.0722	93.6436	90.8176	87.5776

.31558E+09	99.3376	99.2978	96.1837	93.8145	91.0578	87.8974
.63115E+09	98.3655	98.3340	95.8674	93.9858	91.7959	89.2888
.94673E+09	95.9375	95.9125	93.9453	92.4346	90.6748	88.6638
.12623E+10	92.9167	92.8968	91.3204	90.1000	88.6761	87.0519
.15779E+10	90.0542	90.0382	88.7698	87.7798	86.6228	85.3052
.18935E+10	87.5618	87.5489	86.5220	85.7146	84.7697	83.6951
.22090E+10	85.4212	85.4107	84.5744	83.9127	83.1373	82.2565
.25246E+10	83.4570	83.4485	82.7620	82.2158	81.5749	80.8477
.28402E+10	81.8587	81.8517	81.2835	80.8293	80.2958	79.6909
.31558E+10	80.5386	80.5327	80.0580	79.6770	79.2291	78.7217
.63115E+10	75.1171	75.1153	74.9682	74.8482	74.7067	74.5468
.94673E+10	73.1825	73.1813	73.0824	73.0012	72.9054	72.7971
.12623E+11	72.1857	72.1848	72.1056	72.0404	71.9633	71.8763
.15779E+11	71.4068	71.4061	71.3412	71.2877	71.2244	71.1529
.18935E+11	70.5610	70.5603	70.5070	70.4630	70.4108	70.3520
.22090E+11	69.7378	69.7373	69.6935	69.6572	69.6141	69.5657
.25246E+11	68.9604	68.9600	68.9239	68.8940	68.8585	68.8185
.28402E+11	68.2315	68.2311	68.2015	68.1767	68.1474	68.1144
.31558E+11	67.5689	67.5687	67.5442	67.5237	67.4995	67.4722

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:04 NOV 05, 1995 CP= 35839.870
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	74.7018	52.4283	52.1506	51.8678
.20000E-05	74.6995	52.4272	52.1496	51.8668
31.558	74.6995	52.4270	52.1494	51.8666
.31558E+07	76.5893	55.5075	55.2384	54.9648
.63116E+07	77.6900	57.5081	57.2468	56.9813
.94673E+07	78.3944	58.9551	58.7008	58.4427
.12623E+08	78.8996	60.1006	59.8529	59.6015
.15779E+08	79.2856	61.0514	60.8095	60.5644
.18935E+08	79.5929	61.8641	61.6278	61.3883
.22090E+08	79.8446	62.5734	62.3422	62.1080
.25246E+08	80.0666	63.2090	62.9824	62.7530
.28402E+08	80.2617	63.7824	63.5601	63.3352
.31558E+08	80.4371	64.3054	64.0871	63.8663
.63115E+08	81.8527	68.0529	67.8617	67.6689
.94673E+08	83.0685	70.5018	70.3247	70.1464
.12623E+09	84.1303	72.3358	72.1674	71.9980
.15779E+09	85.0455	73.8082	73.6460	73.4829
.18935E+09	85.8285	75.0362	74.8790	74.7210
.22090E+09	86.5064	76.0930	75.9401	75.7866
.25246E+09	87.1269	77.0498	76.9007	76.7512
.28402E+09	87.5426	77.7641	77.6187	77.4728
.31558E+09	87.8632	78.3552	78.2133	78.0709
.63115E+09	89.2617	81.8506	81.7376	81.6245
.94673E+09	88.6421	82.7112	82.6206	82.5302
.12623E+10	87.0344	82.2191	82.1463	82.0737
.15779E+10	85.2910	81.3557	81.2969	81.2383
.18935E+10	83.6835	80.4503	80.4026	80.3550
.22090E+10	82.2470	79.5787	79.5397	79.5009
.25246E+10	80.8399	78.6207	78.5887	78.5568
.28402E+10	79.6844	77.8275	77.8010	77.7745
.31558E+10	78.7162	77.1505	77.1282	77.1061
.63115E+10	74.5451	74.0402	74.0333	74.0264
.94673E+10	72.7959	72.4503	72.4456	72.4410
.12623E+11	71.8754	71.5961	71.5924	71.5887
.15779E+11	71.1522	70.9218	70.9187	70.9156
.18935E+11	70.3514	70.1606	70.1581	70.1556
.22090E+11	69.5651	69.4070	69.4050	69.4029

.25246E+11	68.8180	68.6870	68.6853	68.6836
.28402E+11	68.1140	68.0053	68.0039	68.0025
.31558E+11	67.4719	67.3816	67.3804	67.3793

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 35840.080 TIME= 06:34:04
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	8470 TEMP	tt4i045	67.58	.3156E+11	101.3	.9467E+07
3	NSOL	8270 TEMP	tt4o045	67.58	.3156E+11	101.4	.9467E+07
4	NSOL	8272 TEMP	ht4i045	67.65	.3156E+11	117.1	.3156E+07
5	NSOL	8234 TEMP	ct4i045	67.64	.3156E+11	116.5	.3156E+07
6	NSOL	8251 TEMP	ht4o045	67.58	.3156E+11	101.3	.9467E+07
7	NSOL	8242 TEMP	st4i045	67.22	31.56	86.81	.6312E+09
8	NSOL	8460 TEMP	st4o045	67.11	31.56	86.77	.6312E+09
9	NSOL	8556 TEMP	it4i045	47.39	31.56	81.60	.9467E+09
10	NSOL	8566 TEMP	it4o045	47.18	31.56	81.54	.9467E+09
11	NSOL	8691 TEMP	ot4o045	46.95	31.56	81.46	.9467E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:06 NOV 05, 1995 CP= 35842.010
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	99.7982	99.8444	116.483	115.913	99.6172	67.2234
.20000E-05	99.7955	99.8418	116.481	115.911	99.6152	67.2218
31.558	99.7955	99.8417	116.481	115.911	99.6152	67.2218
.31558E+07	100.874	100.919	117.055	116.540	100.810	69.5239
.63116E+07	101.257	101.301	116.974	116.492	101.251	70.9324
.94673E+07	101.312	101.355	116.602	116.143	101.340	71.8897
.12623E+08	101.226	101.268	116.124	115.685	101.277	72.6124
.15779E+08	101.072	101.112	115.610	115.186	101.138	73.1898

.18935E+08	100.883	100.922	115.089	114.678	100.960	73.6684
.22090E+08	100.675	100.714	114.575	114.174	100.760	74.0751
.25246E+08	100.477	100.516	114.097	113.706	100.569	74.4371
.28402E+08	100.284	100.322	113.643	113.262	100.381	74.7601
.31558E+08	100.099	100.136	113.217	112.844	100.201	75.0529
.63115E+08	99.0670	99.0993	110.554	110.239	99.2029	77.2566
.94673E+08	98.9940	99.0240	109.631	109.351	99.1589	78.8887
.12623E+09	99.2609	99.2895	109.379	109.124	99.4517	80.2118
.15779E+09	99.6052	99.6328	109.353	109.117	99.8176	81.3157
.18935E+09	99.9282	99.9549	109.379	109.157	100.158	82.2493
.22090E+09	100.208	100.234	109.401	109.192	100.452	83.0553
.25246E+09	100.472	100.497	109.433	109.236	100.728	83.7895
.28402E+09	100.555	100.580	109.298	109.110	100.816	84.3051
.31558E+09	100.563	100.587	109.100	108.919	100.827	84.7166
.63115E+09	99.3690	99.3884	106.168	106.029	99.6035	86.8141
.94673E+09	96.7513	96.7669	102.191	102.072	96.9225	86.6830
.12623E+10	93.5742	93.5868	97.9639	97.8372	93.6862	85.4421
.15779E+10	90.5858	90.5959	94.1096	94.0145	90.6541	83.9880
.18935E+10	87.9934	88.0016	90.8521	90.7684	88.0327	82.6116
.22090E+10	85.7731	85.7798	88.1052	88.0323	85.7937	81.3614
.25246E+10	83.7457	83.7513	85.6626	85.5990	83.7535	80.1025
.28402E+10	82.0975	82.1020	83.6859	83.6308	82.0978	79.0668
.31558E+10	80.7379	80.7417	82.0664	82.0186	80.7338	78.1951
.63115E+10	75.1782	75.1794	75.5915	75.5743	75.1713	74.3765
.94673E+10	73.2233	73.2241	73.5016	73.4894	73.2171	72.6803
.12623E+11	72.2182	72.2188	72.4411	72.4311	72.2125	71.7819
.15779E+11	71.4333	71.4338	71.6159	71.6076	71.4283	71.0750
.18935E+11	70.5826	70.5830	70.7326	70.7257	70.5781	70.2875
.22090E+11	69.7555	69.7558	69.8789	69.8730	69.7514	69.5121
.25246E+11	68.9748	68.9751	69.0764	69.0715	68.9713	68.7741
.28402E+11	68.2433	68.2436	68.3270	68.3229	68.2402	68.0775
.31558E+11	67.5787	67.5789	67.6477	67.6443	67.5759	67.4416

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:06 NOV 05, 1995 CP= 35842.020
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1129	47.3920	47.1804	46.9535
.20000E-05	67.1113	47.3912	47.1796	46.9527
31.558	67.1113	47.3910	47.1795	46.9526
.31558E+07	69.4174	50.8160	50.6112	50.3914
.63116E+07	70.8293	53.0680	52.8693	52.6558
.94673E+07	71.7896	54.7175	54.5243	54.3166
.12623E+08	72.5150	56.0345	55.8462	55.6440
.15779E+08	73.0949	57.1340	56.9504	56.7530
.18935E+08	73.5757	58.0783	57.8989	57.7060
.22090E+08	73.9845	58.9052	58.7298	58.5411
.25246E+08	74.3483	59.6460	59.4741	59.2892
.28402E+08	74.6731	60.3147	60.1461	59.9648
.31558E+08	74.9676	60.9247	60.7591	60.5811
.63115E+08	77.1821	65.2388	65.0940	64.9382
.94673E+08	78.8200	67.9758	67.8419	67.6977
.12623E+09	80.1466	69.9868	69.8595	69.7224
.15779E+09	81.2530	71.5852	71.4626	71.3306
.18935E+09	82.1887	72.9127	72.7940	72.6660
.22090E+09	82.9965	74.0535	73.9380	73.8136
.25246E+09	83.7322	75.0841	74.9716	74.8504
.28402E+09	84.2493	75.8625	75.7528	75.6345
.31558E+09	84.6621	76.5121	76.4050	76.2896
.63115E+09	86.7709	80.4475	80.3624	80.2705
.94673E+09	86.6484	81.6050	81.5368	81.4633

.12623E+10	85.4142	81.3301	81.2753	81.2162
.15779E+10	83.9654	80.6350	80.5908	80.5431
.18935E+10	82.5932	79.8619	79.8260	79.7873
.22090E+10	81.3463	79.0956	79.0662	79.0346
.25246E+10	80.0901	78.2205	78.1963	78.1704
.28402E+10	79.0565	77.4937	77.4736	77.4521
.31558E+10	78.1864	76.8696	76.8529	76.8349
.63115E+10	74.3737	73.9504	73.9452	73.9396
.94673E+10	72.6785	72.3889	72.3854	72.3816
.12623E+11	71.7805	71.5465	71.5437	71.5407
.15779E+11	71.0738	70.8808	70.8785	70.8760
.18935E+11	70.2865	70.1267	70.1248	70.1228
.22090E+11	69.5113	69.3790	69.3774	69.3757
.25246E+11	68.7734	68.6637	68.6624	68.6610
.28402E+11	68.0770	67.9860	67.9849	67.9838
.31558E+11	67.4411	67.3656	67.3647	67.3638

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35842.230 TIME= 06:34:06
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1206 TEMP	t01i135	67.58	.3156E+11	101.3	.9467E+07
3	NSOL	885 TEMP	t01o135	67.58	.3156E+11	101.3	.9467E+07
4	NSOL	887 TEMP	h01i135	67.65	.3156E+11	117.0	.3156E+07
5	NSOL	849 TEMP	c01i135	67.64	.3156E+11	116.5	.3156E+07
6	NSOL	866 TEMP	h01o135	67.58	.3156E+11	101.3	.9467E+07
7	NSOL	857 TEMP	s01i135	67.15	31.56	86.79	.6312E+09
8	NSOL	1196 TEMP	s01o135	67.03	31.56	86.74	.6312E+09
9	NSOL	1394 TEMP	i01i135	47.28	31.56	81.58	.9467E+09
10	NSOL	1404 TEMP	i01o135	47.07	31.56	81.51	.9467E+09
11	NSOL	2146 TEMP	o01o135	46.84	31.56	81.43	.9467E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:08 NOV 05, 1995 CP= 35844.160
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.7902	99.8363	116.455	115.868	99.5561	67.1471
.20000E-05	99.7876	99.8337	116.453	115.866	99.5541	67.1455
31.558	99.7876	99.8337	116.453	115.866	99.5541	67.1454
.31558E+07	100.867	100.912	117.029	116.497	100.751	69.4505
.63116E+07	101.250	101.294	116.948	116.450	101.195	70.8615
.94673E+07	101.305	101.347	116.577	116.103	101.285	71.8209
.12623E+08	101.219	101.261	116.100	115.645	101.223	72.5455
.15779E+08	101.065	101.106	115.586	115.147	101.085	73.1246
.18935E+08	100.876	100.915	115.066	114.640	100.908	73.6048
.22090E+08	100.669	100.707	114.552	114.137	100.710	74.0129
.25246E+08	100.471	100.509	114.074	113.670	100.520	74.3762
.28402E+08	100.278	100.315	113.621	113.226	100.333	74.7004
.31558E+08	100.093	100.130	113.196	112.809	100.153	74.9944
.63115E+08	99.0615	99.0937	110.535	110.208	99.1616	77.2056
.94673E+08	98.9890	99.0189	109.613	109.323	99.1207	78.8418
.12623E+09	99.2562	99.2847	109.363	109.097	99.4155	80.1674
.15779E+09	99.6006	99.6281	109.337	109.091	99.7829	81.2731
.18935E+09	99.9238	99.9504	109.363	109.132	100.124	82.2082
.22090E+09	100.204	100.230	109.386	109.168	100.419	83.0155
.25246E+09	100.468	100.493	109.419	109.213	100.696	83.7508
.28402E+09	100.551	100.576	109.284	109.087	100.786	84.2675
.31558E+09	100.559	100.583	109.086	108.896	100.797	84.6799
.63115E+09	99.3658	99.3851	106.157	106.011	99.5797	86.7851
.94673E+09	96.7487	96.7642	102.182	102.057	96.9033	86.6597
.12623E+10	93.5721	93.5846	97.9365	97.8255	93.6706	85.4232
.15779E+10	90.5840	90.5941	94.1036	94.0050	90.6414	83.9726
.18935E+10	87.9919	88.0001	90.8471	90.7605	88.0223	82.5990
.22090E+10	85.7718	85.7785	88.1011	88.0258	85.7851	81.3511
.25246E+10	83.7447	83.7502	85.6592	85.5936	83.7464	80.0940
.28402E+10	82.0966	82.1011	83.6831	83.6263	82.0919	79.0597
.31558E+10	80.7371	80.7409	82.0640	82.0148	80.7289	78.1891
.63115E+10	75.1779	75.1791	75.5907	75.5731	75.1697	74.3746
.94673E+10	73.2231	73.2239	73.5010	73.4886	73.2160	72.6790
.12623E+11	72.2180	72.2187	72.4407	72.4305	72.2117	71.7809
.15779E+11	71.4332	71.4337	71.6156	71.6071	71.4275	71.0742
.18935E+11	70.5825	70.5829	70.7324	70.7252	70.5775	70.2867
.22090E+11	69.7554	69.7557	69.8786	69.8726	69.7509	69.5115
.25246E+11	68.9748	68.9751	69.0762	69.0712	68.9709	68.7736
.28402E+11	68.2433	68.2435	68.3269	68.3227	68.2399	68.0771
.31558E+11	67.5786	67.5788	67.6476	67.6441	67.5757	67.4412

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:08 NOV 05, 1995 CP= 35844.170
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.0365	47.2829	47.0710	46.8428
.20000E-05	67.0349	47.2821	47.0702	46.8420
31.558	67.0349	47.2820	47.0701	46.8419
.31558E+07	69.3439	50.7126	50.5075	50.2864
.63116E+07	70.7582	52.9690	52.7699	52.5552
.94673E+07	71.7207	54.6222	54.4286	54.2198
.12623E+08	72.4480	55.9424	55.7538	55.5504
.15779E+08	73.0296	57.0448	56.8609	56.6623
.18935E+08	73.5120	57.9916	57.8119	57.6179
.22090E+08	73.9222	58.8209	58.6451	58.4553
.25246E+08	74.2874	59.5637	59.3915	59.2055

.28402E+08	74.6133	60.2344	60.0655	59.8831
.31558E+08	74.9089	60.8461	60.6802	60.5012
.63115E+08	77.1311	65.1718	65.0268	64.8701
.94673E+08	78.7730	67.9149	67.7807	67.6357
.12623E+09	80.1022	69.9296	69.8021	69.6642
.15779E+09	81.2104	71.5306	71.4079	71.2751
.18935E+09	82.1476	72.8602	72.7413	72.6126
.22090E+09	82.9566	74.0028	73.8872	73.7620
.25246E+09	83.6935	75.0350	74.9224	74.8004
.28402E+09	84.2116	75.8148	75.7049	75.5860
.31558E+09	84.6254	76.4658	76.3585	76.2424
.63115E+09	86.7418	80.4115	80.3262	80.2338
.94673E+09	86.6251	81.5764	81.5081	81.4342
.12623E+10	85.3953	81.3072	81.2523	81.1928
.15779E+10	83.9500	80.6164	80.5721	80.5241
.18935E+10	82.5806	79.8468	79.8108	79.7719
.22090E+10	81.3360	79.0831	79.0537	79.0220
.25246E+10	80.0816	78.2103	78.1861	78.1599
.28402E+10	79.0494	77.4851	77.4651	77.4434
.31558E+10	78.1804	76.8625	76.8457	76.8276
.63115E+10	74.3718	73.9481	73.9429	73.9373
.94673E+10	72.6772	72.3874	72.3838	72.3800
.12623E+11	71.7794	71.5453	71.5424	71.5394
.15779E+11	71.0729	70.8798	70.8775	70.8750
.18935E+11	70.2858	70.1259	70.1240	70.1219
.22090E+11	69.5107	69.3783	69.3767	69.3750
.25246E+11	68.7729	68.6631	68.6618	68.6604
.28402E+11	68.0766	67.9855	67.9844	67.9833
.31558E+11	67.4408	67.3652	67.3643	67.3634

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 35844.380 TIME= 06:34:09
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135
 VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135
 VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135
 VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135
 VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135
 VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135
 VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135
 VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135
 VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135
 VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135
 VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135
 VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135
 VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135
 VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2751 TEMP	ot1o135	32.10	31.56	78.27	.1262E+10
3	NSOL	2714 TEMP	ot1i135	32.14	31.56	78.28	.1262E+10
4	NSOL	1968 TEMP	it1o135	44.43	31.56	80.96	.9467E+09
5	NSOL	1931 TEMP	it1i135	44.44	31.56	80.96	.9467E+09
6	NSOL	1088 TEMP	st1o135	46.24	31.56	81.19	.9467E+09
7	NSOL	1082 TEMP	st1i135	46.27	31.56	81.19	.9467E+09
8	NSOL	849 TEMP	ht1i135	67.64	.3156E+11	116.5	.3156E+07
9	NSOL	853 TEMP	gt1i135	67.68	.3156E+11	123.4	.3156E+07
10	NSOL	1 TEMP	c01i135	67.71	.3156E+11	130.3	.3156E+07
11	NSOL	683 TEMP	gb1i135	67.72	.3156E+11	131.5	.1000E-05
12	NSOL	684 TEMP	gb1h135	67.71	.3156E+11	129.8	.3156E+07
13	NSOL	679 TEMP	sb1i135	67.52	.3156E+11	93.99	.6312E+09
14	NSOL	962 TEMP	sb1o135	67.52	.3156E+11	93.87	.6312E+09
15	NSOL	1640 TEMP	ib1i135	56.71	31.56	84.01	.9467E+09
16	NSOL	1677 TEMP	ib1o135	56.05	31.56	83.79	.9467E+09
17	NSOL	2751 TEMP	ob1o135	32.10	31.56	78.27	.1262E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:12 NOV 05, 1995 CP= 35847.510
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.0955	32.1374	44.4293	44.4445	46.2456	46.2667
.20000E-05	32.0954	32.1372	44.4287	44.4439	46.2449	46.2659
31.558	32.0953	32.1372	44.4286	44.4438	46.2448	46.2658
.31558E+07	36.3724	36.4119	48.0687	48.0828	49.6847	49.7047
.63116E+07	39.2797	39.3173	50.4739	50.4872	51.9568	51.9759
.94673E+07	41.4754	41.5115	52.2446	52.2572	53.6276	53.6460
.12623E+08	43.2647	43.2995	53.6631	53.6752	54.9655	54.9833
.15779E+08	44.7808	44.8144	54.8502	54.8617	56.0852	56.1024
.18935E+08	46.0973	46.1299	55.8712	55.8824	57.0485	57.0653
.22090E+08	47.2606	47.2923	56.7667	56.7775	57.8937	57.9100
.25246E+08	48.3041	48.3348	57.5686	57.5791	58.6513	58.6672
.28402E+08	49.2489	49.2789	58.2928	58.3029	59.3360	59.3516
.31558E+08	50.1117	50.1410	58.9531	58.9629	59.9609	59.9761
.63115E+08	56.0921	56.1168	63.5968	63.6049	64.3811	64.3940
.94673E+08	59.6831	59.7054	66.5039	66.5111	67.1763	67.1881
.12623E+09	62.2184	62.2393	68.6207	68.6274	69.2247	69.2358
.15779E+09	64.1908	64.2106	70.2949	70.3012	70.8505	70.8611
.18935E+09	65.8154	65.8345	71.6824	71.6883	72.2005	72.2107
.22090E+09	67.2088	67.2272	72.8737	72.8793	73.3610	73.3708
.25246E+09	68.4631	68.4808	73.9488	73.9542	74.4094	74.4189
.28402E+09	69.4395	69.4567	74.7652	74.7704	75.2040	75.2132
.31558E+09	70.2724	70.2891	75.4490	75.4541	75.8692	75.8781
.63115E+09	75.6307	75.6435	79.6370	79.6407	79.9331	79.9400
.94673E+09	77.7916	77.8017	80.9607	80.9637	81.1889	81.1944
.12623E+10	78.2676	78.2757	80.8068	80.8091	80.9914	80.9958
.15779E+10	78.1578	78.1643	80.2063	80.2082	80.3584	80.3620
.18935E+10	77.8445	77.8498	79.5088	79.5103	79.6350	79.6380
.22090E+10	77.4429	77.4473	78.8033	78.8046	78.9087	78.9111
.25246E+10	76.8553	76.8589	77.9767	77.9778	78.0657	78.0677
.28402E+10	76.3575	76.3605	77.2892	77.2901	77.3645	77.3662
.31558E+10	75.9160	75.9185	76.6969	76.6976	76.7611	76.7624
.63115E+10	73.6485	73.6493	73.8942	73.8944	73.9159	73.9164
.94673E+10	72.1835	72.1841	72.3503	72.3504	72.3656	72.3659
.12623E+11	71.3811	71.3815	71.5152	71.5153	71.5278	71.5280

.15779E+11	70.7447	70.7451	70.8549	70.8551	70.8654	70.8656
.18935E+11	70.0143	70.0146	70.1053	70.1053	70.1140	70.1142
.22090E+11	69.2861	69.2863	69.3611	69.3612	69.3685	69.3686
.25246E+11	68.5869	68.5871	68.6489	68.6489	68.6551	68.6552
.28402E+11	67.9224	67.9226	67.9737	67.9737	67.9789	67.9790
.31558E+11	67.3129	67.3130	67.3553	67.3554	67.3597	67.3598

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:12 NOV 05, 1995 CP= 35847.520
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	115.868	123.111	130.277	131.506	129.780	86.7719
.20000E-05	115.866	123.109	130.274	131.503	129.777	86.7693
31.558	115.866	123.109	130.274	131.503	129.777	86.7692
.31558E+07	116.497	123.448	130.326	131.489	129.837	88.2228
.63116E+07	116.450	123.167	129.816	130.932	129.331	88.9544
.94673E+07	116.103	122.618	129.072	130.150	128.589	89.3322
.12623E+08	115.645	121.983	128.264	129.310	127.783	89.5439
.15779E+08	115.147	121.326	127.451	128.470	126.971	89.6636
.18935E+08	114.640	120.674	126.658	127.652	126.180	89.7274
.22090E+08	114.137	120.039	125.894	126.865	125.416	89.7549
.25246E+08	113.670	119.450	125.188	126.139	124.712	89.7725
.28402E+08	113.226	118.895	124.524	125.456	124.049	89.7786
.31558E+08	112.809	118.375	123.903	124.818	123.430	89.7791
.63115E+08	110.208	115.070	119.909	120.706	119.456	90.0065
.94673E+08	109.323	113.806	118.272	119.003	117.839	90.5942
.12623E+09	109.097	113.342	117.573	118.261	117.155	91.2666
.15779E+09	109.091	113.163	117.224	117.880	116.819	91.9013
.18935E+09	109.132	113.065	116.988	117.619	116.594	92.4587
.22090E+09	109.168	112.981	116.785	117.394	116.401	92.9420
.25246E+09	109.213	112.919	116.617	117.207	116.241	93.3885
.28402E+09	109.087	112.696	116.298	116.871	115.930	93.6436
.31558E+09	108.896	112.416	115.930	116.487	115.568	93.8145
.63115E+09	106.011	108.811	111.612	112.055	111.301	93.9858
.94673E+09	102.057	104.320	106.588	106.952	106.318	92.4346
.12623E+10	97.8255	99.6697	101.523	101.825	101.286	90.1000
.15779E+10	94.0050	95.5145	97.0343	97.2864	96.8295	87.7798
.18935E+10	90.7605	92.0013	93.2526	93.4635	93.0766	85.7146
.22090E+10	88.0258	89.0496	90.0836	90.2603	89.9333	83.9127
.25246E+10	85.5936	86.4443	87.3043	87.4532	87.1758	82.2158
.28402E+10	83.6263	84.3374	85.0571	85.1831	84.9473	80.8293
.31558E+10	82.0148	82.6139	83.2207	83.3278	83.1266	79.6770
.63115E+10	75.5731	75.7653	75.9605	75.9962	75.9283	74.8482
.94673E+10	73.4886	73.6195	73.7526	73.7773	73.7304	73.0012
.12623E+11	72.4305	72.5360	72.6433	72.6634	72.6252	72.0404
.15779E+11	71.6071	71.6939	71.7823	71.7989	71.7674	71.2877
.18935E+11	70.7252	70.7969	70.8700	70.8838	70.8575	70.4630
.22090E+11	69.8726	69.9319	69.9924	70.0038	69.9820	69.6572
.25246E+11	69.0712	69.1202	69.1702	69.1798	69.1616	68.8940
.28402E+11	68.3227	68.3633	68.4046	68.4126	68.3975	68.1767
.31558E+11	67.6441	67.6777	67.7120	67.7186	67.7060	67.5237

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:12 NOV 05, 1995 CP= 35847.530
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	86.4788	56.7159	56.0489	32.0955
.20000E-05	86.4761	56.7147	56.0477	32.0954
31.558	86.4760	56.7145	56.0475	32.0953
.31558E+07	87.9390	59.6458	58.9997	36.3724
.63116E+07	88.6790	61.5141	60.8868	39.2797
.94673E+07	89.0645	62.8407	62.2307	41.4754
.12623E+08	89.2832	63.8768	63.2826	43.2647
.15779E+08	89.4093	64.7276	64.1480	44.7808
.18935E+08	89.4790	65.4487	64.8826	46.0973
.22090E+08	89.5120	66.0736	65.5199	47.2606
.25246E+08	89.5345	66.6323	66.0899	48.3041
.28402E+08	89.5452	67.1347	66.6029	49.2489
.31558E+08	89.5500	67.5922	67.0701	50.1117
.63115E+08	89.8062	70.9004	70.4441	56.0921
.94673E+08	90.4090	73.1241	72.7019	59.6831
.12623E+09	91.0905	74.8215	74.4201	62.2184
.15779E+09	91.7319	76.1967	75.8102	64.1908
.18935E+09	92.2945	77.3468	76.9723	65.8154
.22090E+09	92.7824	78.3365	77.9723	67.2088
.25246E+09	93.2331	79.2332	78.8783	68.4631
.28402E+09	93.4920	79.8918	79.5455	69.4395
.31558E+09	93.6666	80.4298	80.0917	70.2724
.63115E+09	93.8681	83.4849	83.2163	75.6307
.94673E+09	92.3404	84.0090	83.7944	77.7916
.12623E+10	90.0243	83.2557	83.0836	78.2676
.15779E+10	87.7187	82.1876	82.0490	78.1578
.18935E+10	85.6650	81.1225	81.0102	77.8445
.22090E+10	83.8722	80.1253	80.0338	77.4429
.25246E+10	82.1825	79.0689	78.9937	76.8553
.28402E+10	80.8016	78.1981	78.1358	76.3575
.31558E+10	79.6539	77.4598	77.4078	75.9160
.63115E+10	74.8410	74.1358	74.1196	73.6485
.94673E+10	72.9964	72.5146	72.5037	72.1835
.12623E+11	72.0365	71.6475	71.6388	71.3811
.15779E+11	71.2845	70.9639	70.9567	70.7447
.18935E+11	70.4604	70.1952	70.1893	70.0143
.22090E+11	69.6550	69.4355	69.4307	69.2861
.25246E+11	68.8922	68.7104	68.7064	68.5869
.28402E+11	68.1753	68.0245	68.0213	67.9224
.31558E+11	67.5225	67.3975	67.3948	67.3129

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 35847.740 TIME= 06:34:12
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045

VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9855 TEMP	ot4o045	32.13	31.56	78.27	.1262E+10
3	NSOL	9818 TEMP	ot4i045	32.17	31.56	78.28	.1262E+10
4	NSOL	9546 TEMP	it4o045	44.46	31.56	80.97	.9467E+09
5	NSOL	9509 TEMP	it4i045	44.47	31.56	80.97	.9467E+09
6	NSOL	8352 TEMP	st4o045	46.27	31.56	81.20	.9467E+09
7	NSOL	8346 TEMP	st4i045	46.30	31.56	81.20	.9467E+09
8	NSOL	8234 TEMP	ht4i045	67.64	.3156E+11	116.5	.3156E+07
9	NSOL	8238 TEMP	gt4i045	67.68	.3156E+11	123.5	.3156E+07
10	NSOL	7642 TEMP	c04i045	67.71	.3156E+11	130.4	.3156E+07
11	NSOL	7654 TEMP	gb4i045	67.72	.3156E+11	131.6	.1000E-05
12	NSOL	7655 TEMP	gb4h045	67.71	.3156E+11	129.9	.3156E+07
13	NSOL	7650 TEMP	sb4i045	67.52	.3156E+11	94.01	.6312E+09
14	NSOL	7871 TEMP	sb4o045	67.52	.3156E+11	93.89	.6312E+09
15	NSOL	8934 TEMP	ib4i045	56.80	31.56	84.03	.9467E+09
16	NSOL	8971 TEMP	ib4o045	56.13	31.56	83.82	.9467E+09
17	NSOL	9855 TEMP	ob4o045	32.13	31.56	78.27	.1262E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:15 NOV 05, 1995 CP= 35851.060
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.1286	32.1677	44.4565	44.4717	46.2753	46.2964
.20000E-05	32.1284	32.1675	44.4559	44.4711	46.2745	46.2956
31.558	32.1284	32.1675	44.4558	44.4710	46.2744	46.2955
.31558E+07	36.4032	36.4401	48.0942	48.1083	49.7127	49.7327
.63116E+07	39.3088	39.3440	50.4983	50.5115	51.9834	52.0026
.94673E+07	41.5031	41.5369	52.2680	52.2806	53.6532	53.6716
.12623E+08	43.2913	43.3238	53.6856	53.6977	54.9902	55.0080
.15779E+08	44.8065	44.8379	54.8719	54.8835	56.1091	56.1263
.18935E+08	46.1220	46.1525	55.8923	55.9035	57.0717	57.0885
.22090E+08	47.2846	47.3142	56.7872	56.7979	57.9162	57.9325
.25246E+08	48.3273	48.3561	57.5885	57.5990	58.6732	58.6892
.28402E+08	49.2715	49.2996	58.3122	58.3223	59.3574	59.3730
.31558E+08	50.1337	50.1611	58.9720	58.9819	59.9818	59.9970
.63115E+08	56.1104	56.1335	63.6128	63.6209	64.3987	64.4117
.94673E+08	59.6995	59.7203	66.5184	66.5256	67.1923	67.2041
.12623E+09	62.2336	62.2531	68.6343	68.6409	69.2397	69.2507
.15779E+09	64.2051	64.2237	70.3078	70.3140	70.8648	70.8753
.18935E+09	65.8292	65.8470	71.6947	71.7006	72.2142	72.2243

.22090E+09	67.2220	67.2392	72.8856	72.8912	73.3741	73.3839
.25246E+09	68.4758	68.4924	73.9603	73.9657	74.4221	74.4316
.28402E+09	69.4518	69.4678	74.7763	74.7815	75.2163	75.2255
.31558E+09	70.2843	70.2999	75.4599	75.4649	75.8811	75.8901
.63115E+09	75.6397	75.6517	79.6453	79.6490	79.9423	79.9492
.94673E+09	77.7987	77.8081	80.9673	80.9702	81.1962	81.2017
.12623E+10	78.2732	78.2808	80.8121	80.8144	80.9973	81.0017
.15779E+10	78.1624	78.1685	80.2106	80.2125	80.3631	80.3667
.18935E+10	77.8482	77.8532	79.5122	79.5138	79.6389	79.6419
.22090E+10	77.4460	77.4501	78.8062	78.8075	78.9119	78.9143
.25246E+10	76.8578	76.8612	77.9791	77.9802	78.0683	78.0703
.28402E+10	76.3597	76.3624	77.2912	77.2921	77.3667	77.3684
.31558E+10	75.9177	75.9201	76.6985	76.6993	76.7629	76.7643
.63115E+10	73.6490	73.6498	73.8947	73.8950	73.9165	73.9170
.94673E+10	72.1839	72.1844	72.3506	72.3508	72.3660	72.3663
.12623E+11	71.3814	71.3818	71.5155	71.5156	71.5281	71.5283
.15779E+11	70.7450	70.7453	70.8552	70.8553	70.8657	70.8659
.18935E+11	70.0145	70.0148	70.1054	70.1055	70.1143	70.1144
.22090E+11	69.2862	69.2865	69.3613	69.3614	69.3687	69.3688
.25246E+11	68.5870	68.5872	68.6490	68.6491	68.6552	68.6553
.28402E+11	67.9225	67.9227	67.9738	67.9738	67.9790	67.9791
.31558E+11	67.3130	67.3131	67.3554	67.3555	67.3598	67.3599

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:15 NOV 05, 1995 CP= 35851.070
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.913	123.158	130.325	131.555	129.828	86.8244
.20000E-05	115.911	123.155	130.323	131.553	129.825	86.8217
31.558	115.911	123.155	130.323	131.553	129.825	86.8217
.31558E+07	116.540	123.492	130.373	131.537	129.883	88.2734
.63116E+07	116.492	123.210	129.862	130.979	129.376	89.0035
.94673E+07	116.143	122.661	129.116	130.196	128.633	89.3800
.12623E+08	115.685	122.024	128.307	129.355	127.826	89.5905
.15779E+08	115.186	121.366	127.494	128.513	127.013	89.7091
.18935E+08	114.678	120.713	126.700	127.695	126.221	89.7719
.22090E+08	114.174	120.077	125.935	126.907	125.457	89.7985
.25246E+08	113.706	119.488	125.228	126.180	124.751	89.8152
.28402E+08	113.262	118.932	124.563	125.496	124.088	89.8206
.31558E+08	112.844	118.412	123.942	124.858	123.468	89.8203
.63115E+08	110.239	115.102	119.943	120.740	119.490	90.0427
.94673E+08	109.351	113.836	118.304	119.036	117.870	90.6278
.12623E+09	109.124	113.370	117.604	118.292	117.185	91.2984
.15779E+09	109.117	113.190	117.253	117.909	116.847	91.9319
.18935E+09	109.157	113.092	117.016	117.647	116.621	92.4883
.22090E+09	109.192	113.007	116.813	117.422	116.428	92.9707
.25246E+09	109.236	112.944	116.644	117.234	116.268	93.4165
.28402E+09	109.110	112.720	116.324	116.897	115.955	93.6709
.31558E+09	108.919	112.440	115.955	116.513	115.593	93.8411
.63115E+09	106.029	108.830	111.632	112.076	111.321	94.0070
.94673E+09	102.072	104.335	106.605	106.968	106.334	92.4517
.12623E+10	97.8372	99.6822	101.536	101.839	101.300	90.1139
.15779E+10	94.0145	95.5247	97.0454	97.2978	96.8402	87.7912
.18935E+10	90.7684	92.0097	93.2617	93.4728	93.0855	85.7239
.22090E+10	88.0323	89.0566	90.0912	90.2680	89.9406	83.9204
.25246E+10	85.5990	86.4500	87.3106	87.4597	87.1819	82.2222
.28402E+10	83.6308	84.3422	85.0624	85.1884	84.9524	80.8346
.31558E+10	82.0186	82.6180	83.2252	83.3324	83.1308	79.6815
.63115E+10	75.5743	75.7666	75.9619	75.9976	75.9297	74.8497
.94673E+10	73.4894	73.6204	73.7536	73.7783	73.7313	73.0022

.12623E+11	72.4311	72.5367	72.6441	72.6642	72.6260	72.0412
.15779E+11	71.6076	71.6945	71.7830	71.7996	71.7680	71.2883
.18935E+11	70.7257	70.7974	70.8705	70.8843	70.8581	70.4635
.22090E+11	69.8730	69.9323	69.9928	70.0043	69.9824	69.6576
.25246E+11	69.0715	69.1206	69.1706	69.1801	69.1620	68.8943
.28402E+11	68.3229	68.3635	68.4049	68.4129	68.3978	68.1770
.31558E+11	67.6443	67.6779	67.7122	67.7189	67.7063	67.5240

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=WP 9000/7XX 06:34:15 NOV 05, 1995 CP= 35851.080
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	86.5313	56.7992	56.1340	32.1286
.20000E-05	86.5286	56.7979	56.1328	32.1284
31.558	86.5286	56.7977	56.1326	32.1284
.31558E+07	87.9898	59.7253	59.0809	36.4032
.63116E+07	88.7283	61.5906	60.9650	39.3088
.94673E+07	89.1124	62.9145	62.3062	41.5031
.12623E+08	89.3299	63.9483	63.3558	43.2913
.15779E+08	89.4549	64.7970	64.2190	44.8065
.18935E+08	89.5236	65.5163	64.9517	46.1220
.22090E+08	89.5556	66.1395	65.5873	47.2846
.25246E+08	89.5773	66.6966	66.1557	48.3273
.28402E+08	89.5873	67.1976	66.6672	49.2715
.31558E+08	89.5913	67.6538	67.1331	50.1337
.63115E+08	89.8424	70.9532	70.4982	56.1104
.94673E+08	90.4426	73.1724	72.7515	59.6995
.12623E+09	91.1224	74.8670	74.4668	62.2336
.15779E+09	91.7625	76.2403	75.8549	64.2051
.18935E+09	92.3242	77.3888	77.0153	65.8292
.22090E+09	92.8112	78.3771	78.0139	67.2220
.25246E+09	93.2611	79.2727	78.9187	68.4758
.28402E+09	93.5194	79.9301	79.5848	69.4518
.31558E+09	93.6933	80.4671	80.1300	70.2843
.63115E+09	93.8894	83.5141	83.2463	75.6397
.94673E+09	92.3576	84.0323	83.8183	77.7987
.12623E+10	90.0383	83.2744	83.1028	78.2732
.15779E+10	87.7301	82.2027	82.0645	78.1624
.18935E+10	85.6743	81.1348	81.0228	77.8482
.22090E+10	83.8799	80.1354	80.0441	77.4460
.25246E+10	82.1889	79.0772	79.0022	76.8578
.28402E+10	80.8070	78.2050	78.1429	76.3597
.31558E+10	79.6584	77.4656	77.4137	75.9177
.63115E+10	74.8425	74.1376	74.1215	73.6490
.94673E+10	72.9974	72.5158	72.5049	72.1839
.12623E+11	72.0373	71.6485	71.6399	71.3814
.15779E+11	71.2851	70.9647	70.9576	70.7450
.18935E+11	70.4609	70.1959	70.1900	70.0145
.22090E+11	69.6554	69.4360	69.4312	69.2862
.25246E+11	68.8926	68.7108	68.7069	68.5870
.28402E+11	68.1756	68.0249	68.0217	67.9225
.31558E+11	67.5228	67.3978	67.3951	67.3130

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= otloise

*** WARNING *** CP= 35851.290 TIME= 06:34:15
 NSOL command erases all previously stored or calculated data

unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise
 VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise
 VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise
 VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise
 VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise
 VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise
 VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise
 VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise
 VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise
 VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise
 VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise
 VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise
 VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise
 VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise
 VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2763 TEMP	ot1oise	31.25	31.56	78.11	.1262E+10
3	NSOL	2726 TEMP	ot1iise	31.28	31.56	78.12	.1262E+10
4	NSOL	1980 TEMP	it1oise	50.13	31.56	82.50	.9467E+09
5	NSOL	1943 TEMP	it1iise	50.18	31.56	82.52	.9467E+09
6	NSOL	1281 TEMP	st1oise	56.79	31.56	84.13	.9467E+09
7	NSOL	1247 TEMP	st1iise	57.30	31.56	84.28	.9467E+09
8	NSOL	1206 TEMP	ht1iise	67.58	.3156E+11	101.3	.9467E+07
9	NSOL	1207 TEMP	gt1iise	67.66	.3156E+11	116.7	.3156E+07
10	NSOL	63 TEMP	c01iise	67.70	.3156E+11	124.2	.3156E+07
11	NSOL	1034 TEMP	gb1iise	67.70	.3156E+11	125.2	.3156E+07
12	NSOL	1035 TEMP	gb1hise	67.66	.3156E+11	117.4	.3156E+07
13	NSOL	1033 TEMP	sb1iise	67.57	.3156E+11	99.45	.9467E+07
14	NSOL	1071 TEMP	sb1oise	67.57	.3156E+11	98.99	.3156E+09
15	NSOL	1652 TEMP	ib1iise	60.00	31.56	84.98	.9467E+09
16	NSOL	1689 TEMP	ib1oise	59.23	31.56	84.74	.9467E+09
17	NSOL	2763 TEMP	ob1oise	31.25	31.56	78.11	.1262E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:19 NOV 05, 1995 CP= 35854.420
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	31.2479	31.2764	50.1354	50.1840	56.7946	57.2992
.20000E-05	31.2478	31.2763	50.1345	50.1831	56.7934	57.2980

31.558	31.2477	31.2762	50.1344	50.1830	56.7932	57.2978
.31558E+07	35.5776	35.6043	53.5082	53.5546	59.7603	60.2464
.63116E+07	38.5248	38.5501	55.6978	55.7424	61.6478	62.1180
.94673E+07	40.7533	40.7775	57.2826	57.3257	62.9860	63.4419
.12623E+08	42.5708	42.5940	58.5369	58.5787	64.0296	64.4727
.15779E+08	44.1115	44.1340	59.5773	59.6178	64.8857	65.3170
.18935E+08	45.4499	45.4716	60.4659	60.5053	65.6104	66.0311
.22090E+08	46.6329	46.6539	61.2407	61.2791	66.2378	66.6487
.25246E+08	47.6940	47.7144	61.9336	61.9710	66.7983	67.2002
.28402E+08	48.6549	48.6748	62.5578	62.5944	67.3020	67.6957
.31558E+08	49.5323	49.5516	63.1263	63.1621	67.7606	68.1467
.63115E+08	55.6082	55.6244	67.1614	67.1921	71.0730	71.4081
.94673E+08	59.2477	59.2622	69.7576	69.7857	73.2985	73.6073
.12623E+09	61.8126	61.8261	71.6848	71.7112	74.9976	75.2904
.15779E+09	63.8061	63.8189	73.2241	73.2494	76.3741	76.6555
.18935E+09	65.4474	65.4597	74.5040	74.5284	77.5249	77.7971
.22090E+09	66.8549	66.8667	75.6033	75.6269	78.5147	78.7790
.25246E+09	68.1216	68.1330	76.5966	76.6195	79.4113	79.6685
.28402E+09	69.1089	69.1199	77.3390	77.3613	80.0679	80.3186
.31558E+09	69.9518	69.9625	77.9535	77.9752	80.6041	80.8486
.63115E+09	75.3864	75.3945	81.5867	81.6037	83.6328	83.8259
.94673E+09	77.5995	77.6059	82.5046	82.5180	84.1268	84.2806
.12623E+10	78.1138	78.1189	82.0418	82.0525	83.3473	83.4704
.15779E+10	78.0336	78.0377	81.2004	81.2090	82.2587	82.3578
.18935E+10	77.7434	77.7468	80.3146	80.3216	81.1781	81.2584
.22090E+10	77.3602	77.3630	79.4606	79.4663	80.1692	80.2346
.25246E+10	76.7870	76.7892	78.5173	78.5220	79.1037	79.1574
.28402E+10	76.3007	76.3026	77.7375	77.7413	78.2261	78.2706
.31558E+10	75.8682	75.8698	77.0720	77.0753	77.4827	77.5199
.63115E+10	73.6333	73.6338	74.0114	74.0124	74.1421	74.1537
.94673E+10	72.1732	72.1736	72.4295	72.4302	72.5186	72.5264
.12623E+11	71.3728	71.3730	71.5788	71.5794	71.6507	71.6569
.15779E+11	70.7378	70.7381	70.9072	70.9076	70.9664	70.9715
.18935E+11	70.0087	70.0089	70.1483	70.1486	70.1972	70.2014
.22090E+11	69.2814	69.2815	69.3966	69.3969	69.4371	69.4405
.25246E+11	68.5830	68.5831	68.6781	68.6784	68.7116	68.7145
.28402E+11	67.9192	67.9193	67.9978	67.9980	68.0256	68.0279
.31558E+11	67.3102	67.3103	67.3753	67.3755	67.3983	67.4003

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:19 NOV 05, 1995 CP= 35854.430
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gb1iise	1035 TEMP gb1hise	1033 TEMP sb1iise
.10000E-05	99.7902	116.194	124.021	125.047	117.018	97.8907
.20000E-05	99.7876	116.192	124.018	125.044	117.015	97.8875
31.558	99.7876	116.192	124.018	125.044	117.015	97.8874
.31558E+07	100.867	116.675	124.223	125.201	117.423	98.9631
.63116E+07	101.250	116.567	123.888	124.831	117.269	99.3648
.94673E+07	101.305	116.197	123.320	124.235	116.864	99.4452
.12623E+08	101.219	115.733	122.680	123.571	116.373	99.3871
.15779E+08	101.065	115.236	122.025	122.895	115.853	99.2605
.18935E+08	100.876	114.735	121.378	122.230	115.332	99.0985
.22090E+08	100.669	114.240	120.750	121.585	114.820	98.9175
.25246E+08	100.471	113.780	120.168	120.987	114.345	98.7448
.28402E+08	100.278	113.344	119.618	120.424	113.895	98.5751
.31558E+08	100.093	112.934	119.103	119.896	113.473	98.4126
.63115E+08	99.0615	110.356	115.801	116.502	110.808	97.5367
.94673E+08	98.9890	109.446	114.496	115.145	109.848	97.5481
.12623E+09	99.2562	109.186	113.986	114.600	109.554	97.8662
.15779E+09	99.6006	109.147	113.766	114.354	109.491	98.2472

.18935E+09	99.9238	109.161	113.632	114.199	109.484	98.6005
.22090E+09	100.204	109.175	113.519	114.068	109.481	98.9076
.25246E+09	100.468	109.200	113.430	113.963	109.491	99.1964
.28402E+09	100.551	109.063	113.189	113.708	109.343	99.3047
.31558E+09	100.559	108.870	112.899	113.405	109.140	99.3376
.63115E+09	99.3658	106.022	109.261	109.671	106.228	98.3655
.94673E+09	96.7487	102.145	104.780	105.120	102.317	95.9375
.12623E+10	93.5721	97.9773	100.135	100.419	98.1262	92.9167
.15779E+10	90.5840	94.1916	95.9631	96.2021	94.3217	90.0542
.18935E+10	87.9919	90.9571	92.4165	92.6175	91.0704	87.5618
.22090E+10	85.7718	88.2182	89.4243	89.5933	88.3163	85.4212
.25246E+10	83.7447	85.7761	86.7792	86.9220	85.8615	83.4570
.28402E+10	82.0966	83.7941	84.6332	84.7543	83.8680	81.8587
.31558E+10	80.7371	82.1666	82.8740	82.9772	82.2308	80.5386
.63115E+10	75.1779	75.6352	75.8624	75.8970	75.6584	75.1171
.94673E+10	73.2231	73.5341	73.6888	73.7127	73.5506	73.1825
.12623E+11	72.2180	72.4685	72.5930	72.6125	72.4821	72.1857
.15779E+11	71.4332	71.6392	71.7417	71.7578	71.6506	71.4068
.18935E+11	70.5825	70.7525	70.8371	70.8505	70.7621	70.5610
.22090E+11	69.7554	69.8958	69.9657	69.9768	69.9039	69.7378
.25246E+11	68.9748	69.0908	69.1486	69.1579	69.0976	68.9604
.28402E+11	68.2433	68.3392	68.3871	68.3948	68.3450	68.2315
.31558E+11	67.5786	67.6581	67.6976	67.7041	67.6629	67.5689

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:19 NOV 05, 1995 CP= 35854.440
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP	1652 TEMP	1689 TEMP	2763 TEMP
	sb1oise	ib1iise	ib1oise	ob1oise
.10000E-05	97.1966	59.9979	59.2287	31.2479
.20000E-05	97.1934	59.9965	59.2273	31.2478
.31.558	97.1934	59.9963	59.2271	31.2477
.31558E+07	98.2908	62.8135	62.0677	35.5776
.63116E+07	98.7124	64.5791	63.8550	38.5248
.94673E+07	98.8111	65.8115	65.1076	40.7533
.12623E+08	98.7698	66.7617	66.0765	42.5708
.15779E+08	98.6586	67.5341	66.8660	44.1115
.18935E+08	98.5107	68.1833	67.5311	45.4499
.22090E+08	98.3429	68.7419	68.1044	46.6329
.25246E+08	98.1821	69.2403	68.6161	47.6940
.28402E+08	98.0234	69.6871	69.0754	48.6549
.31558E+08	97.8712	70.0932	69.4929	49.5323
.63115E+08	97.0643	73.0589	72.5358	55.6082
.94673E+08	97.1115	75.1090	74.6255	59.2477
.12623E+09	97.4514	76.7018	76.2422	61.8126
.15779E+09	97.8479	78.0031	77.5604	63.8061
.18935E+09	98.2136	79.0940	78.6649	65.4474
.22090E+09	98.5315	80.0327	79.6154	66.8549
.25246E+09	98.8298	80.8838	80.4771	68.1216
.28402E+09	98.9473	81.4999	81.1031	69.1089
.31558E+09	98.9887	81.9972	81.6099	69.9518
.63115E+09	98.0888	84.7147	84.4079	75.3864
.94673E+09	95.7169	84.9808	84.7368	77.5995
.12623E+10	92.7400	84.0278	83.8331	78.1138
.15779E+10	89.9122	82.8042	82.6482	78.0336
.18935E+10	87.4470	81.6186	81.4928	77.7434
.22090E+10	85.3278	80.5273	80.4251	77.3602
.25246E+10	83.3805	79.3973	79.3136	76.7870
.28402E+10	81.7954	78.4689	78.3998	76.3007
.31558E+10	80.4857	77.6855	77.6278	75.8682
.63115E+10	75.1007	74.2049	74.1871	73.6333
.94673E+10	73.1716	72.5609	72.5490	72.1732

.12623E+11	72.1770	71.6846	71.6751	71.3728
.15779E+11	71.3997	70.9942	70.9864	70.7378
.18935E+11	70.5551	70.2200	70.2137	70.0087
.22090E+11	69.7330	69.4559	69.4506	69.2814
.25246E+11	68.9564	68.7271	68.7228	68.5830
.28402E+11	68.2282	68.0383	68.0348	67.9192
.31558E+11	67.5662	67.4089	67.4059	67.3102

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 35854.650 TIME= 06:34:19
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2682 TEMP	ot1oose	34.28	31.56	78.69	.1262E+10
3 NSOL	2673 TEMP	ot1oose	34.38	31.56	78.71	.1262E+10
4 NSOL	1899 TEMP	it1oose	35.96	31.56	79.04	.1262E+10
5 NSOL	1794 TEMP	it1oose	35.92	31.56	79.04	.1262E+10
6 NSOL	1276 TEMP	st1oose	42.98	31.56	80.30	.9467E+09
7 NSOL	1233 TEMP	st1oose	43.01	31.56	80.31	.9467E+09
8 NSOL	1196 TEMP	ht1oose	67.03	31.56	86.74	.6312E+09
9 NSOL	1197 TEMP	gt1oose	67.50	.3156E+11	91.96	.6312E+09
10 NSOL	58 TEMP	c01oose	67.53	.3156E+11	93.69	.6312E+09
11 NSOL	1019 TEMP	gb1oose	67.53	.3156E+11	94.19	.6312E+09
12 NSOL	1020 TEMP	gb1hose	67.51	.3156E+11	92.86	.6312E+09
13 NSOL	1018 TEMP	sb1oose	67.47	.3156E+11	89.26	.6312E+09
14 NSOL	1066 TEMP	sb1oose	67.47	.3156E+11	89.20	.6312E+09
15 NSOL	1529 TEMP	ib1oose	52.20	31.56	82.64	.9467E+09
16 NSOL	1608 TEMP	ib1oose	51.98	31.56	82.56	.9467E+09
17 NSOL	2682 TEMP	ob1oose	34.28	31.56	78.69	.1262E+10

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:22 NOV 05, 1995 CP= 35857.790
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1oose	2673 TEMP ot1oose	1899 TEMP it1oose	1794 TEMP it1oose	1276 TEMP st1oose	1233 TEMP st1oose
.10000E-05	34.2853	34.3787	35.9610	35.9208	42.9761	43.0063
.20000E-05	34.2850	34.3785	35.9607	35.9205	42.9755	43.0057
31.558	34.2850	34.3785	35.9606	35.9204	42.9754	43.0056
.31558E+07	38.4355	38.5244	40.0274	39.9896	46.5653	46.5936
.63116E+07	41.2456	41.3309	42.7711	42.7352	48.9595	48.9864
.94673E+07	43.3605	43.4427	44.8296	44.7953	50.7358	50.7617
.12623E+08	45.0802	45.1597	46.5000	46.4669	52.1671	52.1919
.15779E+08	46.5350	46.6121	47.9109	47.8790	53.3703	53.3943
.18935E+08	47.7967	47.8717	49.1332	49.1024	54.4091	54.4324
.22090E+08	48.9107	48.9837	50.2114	50.1815	55.3230	55.3457
.25246E+08	49.9098	49.9810	51.1782	51.1491	56.1429	56.1650
.28402E+08	50.8143	50.8838	52.0531	52.0248	56.8847	56.9062
.31558E+08	51.6401	51.7082	52.8518	52.8242	57.5621	57.5831
.63115E+08	57.3783	57.4364	58.4103	58.3873	62.3314	62.3491
.94673E+08	60.8458	60.8988	61.7857	61.7650	65.3059	65.3219
.12623E+09	63.3055	63.3554	64.1891	64.1698	67.4632	67.4781
.15779E+09	65.2241	65.2717	66.0675	66.0492	69.1667	69.1808
.18935E+09	66.8061	66.8520	67.6175	67.6001	70.5786	70.5921
.22090E+09	68.1633	68.2077	68.9474	68.9307	71.7920	71.8050
.25246E+09	69.3856	69.4286	70.1454	70.1293	72.8876	72.9001
.28402E+09	70.3338	70.3755	71.0719	71.0563	73.7248	73.7369
.31558E+09	71.1405	71.1812	71.8585	71.8433	74.4299	74.4417
.63115E+09	76.2973	76.3289	76.8549	76.8435	78.8128	78.8218
.94673E+09	78.3175	78.3426	78.7594	78.7504	80.3017	80.3089
.12623E+10	78.6889	78.7090	79.0433	79.0361	80.2814	80.2873
.15779E+10	78.4980	78.5142	78.7839	78.7781	79.7866	79.7914
.18935E+10	78.1211	78.1343	78.3535	78.3488	79.1713	79.1753
.22090E+10	77.6693	77.6801	77.8593	77.8554	78.5304	78.5337
.25246E+10	77.0422	77.0511	77.1987	77.1955	77.7543	77.7571
.28402E+10	76.5130	76.5204	76.6430	76.6404	77.1063	77.1086
.31558E+10	76.0464	76.0526	76.1554	76.1532	76.5449	76.5468
.63115E+10	73.6897	73.6916	73.7240	73.7233	73.8483	73.8489
.94673E+10	72.2116	72.2129	72.2348	72.2344	72.3198	72.3202
.12623E+11	71.4037	71.4048	71.4224	71.4220	71.4910	71.4914
.15779E+11	70.7633	70.7642	70.7787	70.7783	70.8353	70.8356
.18935E+11	70.0297	70.0304	70.0424	70.0421	70.0892	70.0894
.22090E+11	69.2988	69.2994	69.3092	69.3090	69.3480	69.3482
.25246E+11	68.5974	68.5979	68.6060	68.6058	68.6382	68.6383
.28402E+11	67.9311	67.9315	67.9382	67.9381	67.9649	67.9650
.31558E+11	67.3201	67.3204	67.3260	67.3259	67.3482	67.3483

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:22 NOV 05, 1995 CP= 35857.800
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP ht1oose	1197 TEMP gt1oose	58 TEMP c01oose	1019 TEMP gb1oose	1020 TEMP gb1hose	1018 TEMP sb1oose
.10000E-05	67.0365	81.3821	85.9870	87.3967	84.1244	74.7018

.20000E-05	67.0349	81.3799	85.9844	87.3940	84.1219	74.6995
31.558	67.0349	81.3799	85.9844	87.3940	84.1218	74.6995
.31558E+07	69.3439	83.0461	87.4470	88.7832	85.6299	76.5893
.63116E+07	70.7582	83.9545	88.1981	89.4800	86.4231	77.6900
.94673E+07	71.7207	84.4882	88.5994	89.8370	86.8634	78.3944
.12623E+08	72.4480	84.8395	88.8350	90.0344	87.1350	78.8996
.15779E+08	73.0296	85.0854	88.9775	90.1433	87.3111	79.2856
.18935E+08	73.5120	85.2642	89.0630	90.1987	87.4278	79.5929
.22090E+08	73.9222	85.3973	89.1109	90.2193	87.5047	79.8446
.25246E+08	74.2874	85.5108	89.1468	90.2306	87.5676	80.0666
.28402E+08	74.6133	85.6054	89.1700	90.2312	87.6160	80.2617
.31558E+08	74.9089	85.6875	89.1862	90.2266	87.6557	80.4371
.63115E+08	77.1311	86.4635	89.5111	90.4098	88.1456	81.8527
.94673E+08	78.7730	87.3352	90.1388	90.9609	88.8645	83.0685
.12623E+09	80.1022	88.1815	90.8304	91.6036	89.6140	84.1303
.15779E+09	81.2104	88.9404	91.4766	92.2143	90.3026	85.0455
.18935E+09	82.1476	89.5971	92.0427	92.7518	90.9032	85.8285
.22090E+09	82.9566	90.1660	92.5337	93.2185	91.4244	86.5064
.25246E+09	83.6935	90.6887	92.9870	93.6502	91.9048	87.1269
.28402E+09	84.2116	91.0142	93.2503	93.8943	92.1934	87.5426
.31558E+09	84.6254	91.2513	93.4306	94.0574	92.3973	87.8632
.63115E+09	86.7418	91.9644	93.6929	94.1864	92.8572	89.2617
.94673E+09	86.6251	90.8234	92.2225	92.6219	91.5417	88.6421
.12623E+10	85.3953	88.8074	89.9521	90.2800	89.3949	87.0344
.15779E+10	83.9500	86.7376	87.6786	87.9494	87.2215	85.2910
.18935E+10	82.5806	84.8692	85.6458	85.8702	85.2695	83.6835
.22090E+10	81.3360	83.2229	83.8661	84.0527	83.5553	82.2470
.25246E+10	80.0816	81.6487	82.1850	82.3411	81.9267	80.8399
.28402E+10	79.0494	80.3591	80.8088	80.9402	80.5929	79.6844
.31558E+10	78.1804	79.2837	79.6635	79.7747	79.4816	78.7162
.63115E+10	74.3718	74.7257	74.8488	74.8853	74.7905	74.5451
.94673E+10	72.6772	72.9186	73.0028	73.0279	72.9632	72.7959
.12623E+11	71.7794	71.9741	72.0421	72.0625	72.0103	71.8754
.15779E+11	71.0729	71.2333	71.2894	71.3062	71.2632	71.1522
.18935E+11	70.2858	70.4183	70.4647	70.4787	70.4431	70.3514
.22090E+11	69.5107	69.6203	69.6588	69.6704	69.6410	69.5651
.25246E+11	68.7729	68.8636	68.8955	68.9051	68.8808	68.8180
.28402E+11	68.0766	68.1517	68.1782	68.1862	68.1660	68.1140
.31558E+11	67.4408	67.5031	67.5250	67.5317	67.5149	67.4719

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:22 NOV 05, 1995 CP= 35857.810
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP	1529 TEMP	1608 TEMP	2682 TEMP
	sb1oose	ib1iose	ib1oose	ob1oose
.10000E-05	74.5601	52.2045	51.9766	34.2853
.20000E-05	74.5579	52.2035	51.9755	34.2850
31.558	74.5578	52.2033	51.9753	34.2850
.31558E+07	76.4522	55.2909	55.0700	38.4355
.63116E+07	77.5570	57.2976	57.0830	41.2456
.94673E+07	78.2650	58.7500	58.5411	43.3605
.12623E+08	78.7736	59.9005	59.6968	45.0802
.15779E+08	79.1627	60.8558	60.6569	46.5350
.18935E+08	79.4728	61.6727	61.4782	47.7967
.22090E+08	79.7270	62.3859	62.1956	48.9107
.25246E+08	79.9514	63.0249	62.8384	49.9098
.28402E+08	80.1487	63.6016	63.4186	50.8143
.31558E+08	80.3261	64.1277	63.9479	51.6401
.63115E+08	81.7556	67.8962	67.7384	57.3783
.94673E+08	82.9787	70.3563	70.2101	60.8458
.12623E+09	84.0450	72.1974	72.0582	63.3055
.15779E+09	84.9634	73.6748	73.5408	65.2241

.18935E+09	85.7489	74.9069	74.7769	66.8061
.22090E+09	86.4291	75.9673	75.8409	68.1633
.25246E+09	87.0516	76.9272	76.8040	69.3856
.28402E+09	87.4691	77.6445	77.5242	70.3338
.31558E+09	87.7915	78.2384	78.1210	71.1405
.63115E+09	89.2046	81.7569	81.6633	76.2973
.94673E+09	88.5963	82.6355	82.5603	78.3175
.12623E+10	86.9975	82.1577	82.0971	78.6889
.15779E+10	85.2612	81.3056	81.2567	78.4980
.18935E+10	83.6592	80.4093	80.3695	78.1211
.22090E+10	82.2272	79.5450	79.5125	77.6693
.25246E+10	80.8235	78.5929	78.5661	77.0422
.28402E+10	79.6708	77.8044	77.7821	76.5130
.31558E+10	78.7048	77.1310	77.1124	76.0464
.63115E+10	74.5415	74.0340	74.0282	73.6897
.94673E+10	72.7935	72.4461	72.4422	72.2116
.12623E+11	71.8735	71.5928	71.5896	71.4037
.15779E+11	71.1506	70.9190	70.9164	70.7633
.18935E+11	70.3501	70.1583	70.1562	70.0297
.22090E+11	69.5641	69.4052	69.4034	69.2988
.25246E+11	68.8172	68.6854	68.6840	68.5974
.28402E+11	68.1133	68.0040	68.0028	67.9311
.31558E+11	67.4713	67.3806	67.3796	67.3201

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 35858.020 TIME= 06:34:22
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise

VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise

VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise

VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise

VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise

VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise

VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise

VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise

VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise

VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise

VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise

VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise

VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise

VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise

VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9867 TEMP	ot4oise	31.25	31.56	78.11	.1262E+10

3	NSOL	9830	TEMP	ot4iise	31.28	31.56	78.12	.1262E+10
4	NSOL	9558	TEMP	it4oise	50.14	31.56	82.51	.9467E+09
5	NSOL	9521	TEMP	it4iise	50.19	31.56	82.52	.9467E+09
6	NSOL	8545	TEMP	st4oise	56.80	31.56	84.13	.9467E+09
7	NSOL	8511	TEMP	st4iise	57.31	31.56	84.28	.9467E+09
8	NSOL	8470	TEMP	ht4iise	67.58	.3156E+11	101.3	.9467E+07
9	NSOL	8471	TEMP	gt4iise	67.66	.3156E+11	116.7	.3156E+07
10	NSOL	7947	TEMP	c04iise	67.70	.3156E+11	124.2	.3156E+07
11	NSOL	7952	TEMP	gb4iise	67.70	.3156E+11	125.2	.3156E+07
12	NSOL	7953	TEMP	gb4hise	67.66	.3156E+11	117.4	.3156E+07
13	NSOL	7951	TEMP	sb4iise	67.57	.3156E+11	99.46	.9467E+07
14	NSOL	7996	TEMP	sb4oise	67.57	.3156E+11	99.00	.3156E+09
15	NSOL	8946	TEMP	ib4iise	60.01	31.56	84.98	.9467E+09
16	NSOL	8983	TEMP	ib4oise	59.24	31.56	84.74	.9467E+09
17	NSOL	9867	TEMP	ob4oise	31.25	31.56	78.11	.1262E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:25 NOV 05, 1995 CP= 35861.150
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.2537	31.2821	50.1435	50.1921	56.8057	57.3100
.20000E-05	31.2535	31.2819	50.1426	50.1912	56.8044	57.3087
31.558	31.2535	31.2819	50.1425	50.1911	56.8043	57.3086
.31558E+07	35.5829	35.6095	53.5159	53.5623	59.7706	60.2564
.63116E+07	38.5298	38.5550	55.7051	55.7497	61.6576	62.1275
.94673E+07	40.7580	40.7822	57.2896	57.3326	62.9953	63.4510
.12623E+08	42.5753	42.5985	58.5437	58.5854	64.0387	64.4814
.15779E+08	44.1159	44.1382	59.5838	59.6243	64.8944	65.3255
.18935E+08	45.4541	45.4757	60.4722	60.5116	65.6189	66.0393
.22090E+08	46.6370	46.6579	61.2469	61.2852	66.2460	66.6566
.25246E+08	47.6979	47.7183	61.9396	61.9770	66.8062	67.2079
.28402E+08	48.6587	48.6785	62.5636	62.6002	67.3098	67.7033
.31558E+08	49.5360	49.5553	63.1320	63.1678	67.7682	68.1540
.63115E+08	55.6113	55.6274	67.1662	67.1969	71.0794	71.4143
.94673E+08	59.2504	59.2649	69.7620	69.7900	73.3042	73.6129
.12623E+09	61.8151	61.8286	71.6889	71.7153	75.0029	75.2955
.15779E+09	63.8084	63.8212	73.2280	73.2533	76.3791	76.6603
.18935E+09	65.4496	65.4619	74.5077	74.5321	77.5297	77.8017
.22090E+09	66.8571	66.8688	75.6069	75.6305	78.5193	78.7835
.25246E+09	68.1237	68.1350	76.6001	76.6230	79.4157	79.6728
.28402E+09	69.1109	69.1218	77.3423	77.3646	80.0723	80.3228
.31558E+09	69.9537	69.9644	77.9567	77.9785	80.6083	80.8526
.63115E+09	75.3878	75.3959	81.5893	81.6062	83.6360	83.8290
.94673E+09	77.6006	77.6070	82.5066	82.5200	84.1294	84.2831
.12623E+10	78.1147	78.1197	82.0434	82.0541	83.3493	83.4724
.15779E+10	78.0343	78.0384	81.2017	81.2103	82.2604	82.3595
.18935E+10	77.7440	77.7474	80.3156	80.3226	81.1795	81.2598
.22090E+10	77.3607	77.3634	79.4614	79.4671	80.1703	80.2357
.25246E+10	76.7874	76.7896	78.5180	78.5227	79.1046	79.1583
.28402E+10	76.3010	76.3029	77.7381	77.7420	78.2269	78.2714
.31558E+10	75.8685	75.8701	77.0726	77.0758	77.4833	77.5205
.63115E+10	73.6334	73.6339	74.0116	74.0126	74.1423	74.1539
.94673E+10	72.1733	72.1736	72.4296	72.4303	72.5187	72.5265
.12623E+11	71.3728	71.3731	71.5789	71.5795	71.6508	71.6571
.15779E+11	70.7379	70.7381	70.9073	70.9077	70.9665	70.9716
.18935E+11	70.0087	70.0089	70.1483	70.1487	70.1973	70.2015
.22090E+11	69.2814	69.2816	69.3966	69.3969	69.4371	69.4406
.25246E+11	68.5830	68.5831	68.6782	68.6784	68.7117	68.7146
.28402E+11	67.9192	67.9193	67.9978	67.9980	68.0256	68.0280
.31558E+11	67.3102	67.3103	67.3753	67.3755	67.3984	67.4003

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:25 NOV 05, 1995 CP= 35861.160
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.7982	116.205	124.031	125.057	117.029	97.9085
.20000E-05	99.7955	116.202	124.028	125.055	117.026	97.9054
31.558	99.7955	116.202	124.029	125.055	117.026	97.9053
.31558E+07	100.874	116.685	124.233	125.211	117.434	98.9803
.63116E+07	101.257	116.577	123.898	124.840	117.279	99.3815
.94673E+07	101.312	116.207	123.330	124.245	116.874	99.4614
.12623E+08	101.226	115.742	122.690	123.581	116.383	99.4029
.15779E+08	101.072	115.245	122.034	122.905	115.863	99.2760
.18935E+08	100.883	114.744	121.387	122.239	115.342	99.1136
.22090E+08	100.675	114.249	120.759	121.594	114.830	98.9323
.25246E+08	100.477	113.789	120.176	120.996	114.355	98.7593
.28402E+08	100.284	113.353	119.627	120.433	113.905	98.5894
.31558E+08	100.099	112.943	119.112	119.905	113.482	98.4267
.63115E+08	99.0670	110.364	115.809	116.510	110.816	97.5491
.94673E+08	98.9940	109.453	114.504	115.152	109.856	97.5596
.12623E+09	99.2609	109.193	113.993	114.607	109.562	97.8771
.15779E+09	99.6052	109.154	113.772	114.360	109.498	98.2577
.18935E+09	99.9282	109.168	113.639	114.206	109.491	98.6106
.22090E+09	100.208	109.181	113.525	114.074	109.488	98.9174
.25246E+09	100.472	109.205	113.436	113.969	109.498	99.2059
.28402E+09	100.555	109.069	113.195	113.714	109.350	99.3140
.31558E+09	100.563	108.875	112.905	113.411	109.146	99.3466
.63115E+09	99.3690	106.026	109.266	109.676	106.233	98.3727
.94673E+09	96.7513	102.149	104.784	105.124	102.321	95.9435
.12623E+10	93.5742	97.9805	100.138	100.423	98.1297	92.9216
.15779E+10	90.5858	94.1942	95.9659	96.2050	94.3246	90.0582
.18935E+10	87.9934	90.9594	92.4189	92.6199	91.0729	87.5652
.22090E+10	85.7731	88.2201	89.4263	89.5953	88.3184	85.4240
.25246E+10	83.7457	85.7777	86.7809	86.9238	85.8632	83.4594
.28402E+10	82.0975	83.7954	84.6347	84.7558	83.8695	81.8607
.31558E+10	80.7379	82.1678	82.8752	82.9784	82.2320	80.5403
.63115E+10	75.1782	75.6356	75.8628	75.8974	75.6588	75.1176
.94673E+10	73.2233	73.5344	73.6890	73.7130	73.5509	73.1829
.12623E+11	72.2182	72.4687	72.5933	72.6127	72.4823	72.1860
.15779E+11	71.4333	71.6394	71.7419	71.7580	71.6508	71.4071
.18935E+11	70.5826	70.7526	70.8373	70.8507	70.7623	70.5612
.22090E+11	69.7555	69.8959	69.9658	69.9770	69.9040	69.7380
.25246E+11	68.9748	69.0909	69.1487	69.1580	69.0977	68.9605
.28402E+11	68.2433	68.3393	68.3871	68.3949	68.3451	68.2316
.31558E+11	67.5787	67.6581	67.6977	67.7042	67.6630	67.5690

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:25 NOV 05, 1995 CP= 35861.170
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.2147	60.0074	59.2377	31.2537

.20000E-05	97.2115	60.0060	59.2364	31.2535
31.558	97.2115	60.0058	59.2361	31.2535
.31558E+07	98.3082	62.8222	62.0760	35.5829
.63116E+07	98.7293	64.5874	63.8629	38.5298
.94673E+07	98.8275	65.8194	65.1152	40.7580
.12623E+08	98.7858	66.7693	66.0837	42.5753
.15779E+08	98.6742	67.5414	66.8729	44.1159
.18935E+08	98.5260	68.1903	67.5377	45.4541
.22090E+08	98.3579	68.7487	68.1108	46.6370
.25246E+08	98.1968	69.2469	68.6224	47.6979
.28402E+08	98.0379	69.6935	69.0814	48.6587
.31558E+08	97.8855	70.0995	69.4988	49.5360
.63115E+08	97.0769	73.0640	72.5407	55.6113
.94673E+08	97.1232	75.1136	74.6298	59.2504
.12623E+09	97.4624	76.7060	76.2462	61.8151
.15779E+09	97.8584	78.0070	77.5641	63.8084
.18935E+09	98.2238	79.0978	78.6685	65.4496
.22090E+09	98.5414	80.0363	79.6187	66.8571
.25246E+09	98.8395	80.8873	80.4803	68.1237
.28402E+09	98.9567	81.5033	81.1062	69.1109
.31558E+09	98.9979	82.0004	81.6129	69.9537
.63115E+09	98.0961	84.7171	84.4102	75.3878
.94673E+09	95.7229	84.9827	84.7386	77.6006
.12623E+10	92.7450	84.0293	83.8345	78.1147
.15779E+10	89.9163	82.8054	82.6493	78.0343
.18935E+10	87.4504	81.6197	81.4937	77.7440
.22090E+10	85.3306	80.5282	80.4259	77.3607
.25246E+10	83.3829	79.3980	79.3143	76.7874
.28402E+10	81.7974	78.4695	78.4004	76.3010
.31558E+10	80.4874	77.6860	77.6283	75.8685
.63115E+10	75.1013	74.2050	74.1873	73.6334
.94673E+10	73.1719	72.5610	72.5491	72.1733
.12623E+11	72.1773	71.6847	71.6752	71.3728
.15779E+11	71.3999	70.9942	70.9865	70.7379
.18935E+11	70.5553	70.2201	70.2137	70.0087
.22090E+11	69.7331	69.4559	69.4507	69.2814
.25246E+11	68.9566	68.7272	68.7229	68.5830
.28402E+11	68.2283	68.0384	68.0348	67.9192
.31558E+11	67.5663	67.4089	67.4060	67.3102

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 35861.380 TIME= 06:34:26
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose

VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose

VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose

VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose
 VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9786 TEMP	ot4oose	34.33	31.56	78.70	.1262E+10
3 NSOL	9777 TEMP	ot4iose	34.42	31.56	78.72	.1262E+10
4 NSOL	9477 TEMP	it4oose	36.00	31.56	79.05	.1262E+10
5 NSOL	9318 TEMP	it4iose	35.97	31.56	79.04	.1262E+10
6 NSOL	8540 TEMP	st4oose	43.03	31.56	80.31	.9467E+09
7 NSOL	8497 TEMP	st4iose	43.06	31.56	80.32	.9467E+09
8 NSOL	8460 TEMP	ht4iose	67.11	31.56	86.77	.6312E+09
9 NSOL	8461 TEMP	gt4iose	67.50	.3156E+11	92.00	.6312E+09
10 NSOL	7927 TEMP	c04iose	67.53	.3156E+11	93.73	.6312E+09
11 NSOL	7929 TEMP	gb4iose	67.53	.3156E+11	94.22	.6312E+09
12 NSOL	7930 TEMP	gb4hose	67.52	.3156E+11	92.89	.6312E+09
13 NSOL	7928 TEMP	sb4iose	67.47	.3156E+11	89.29	.6312E+09
14 NSOL	7991 TEMP	sb4oose	67.47	.3156E+11	89.23	.6312E+09
15 NSOL	8787 TEMP	ib4iose	52.31	31.56	82.66	.9467E+09
16 NSOL	8902 TEMP	ib4oose	52.08	31.56	82.59	.9467E+09
17 NSOL	9786 TEMP	ob4oose	34.33	31.56	78.70	.1262E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:29 NOV 05, 1995 CP= 35864.510
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.3291	34.4216	36.0053	35.9654	43.0269	43.0578
.20000E-05	34.3289	34.4214	36.0050	35.9651	43.0263	43.0572
31.558	34.3288	34.4214	36.0050	35.9650	43.0262	43.0571
.31558E+07	38.4764	38.5644	40.0688	40.0312	46.6134	46.6424
.63116E+07	41.2843	41.3688	42.8103	42.7746	49.0055	49.0330
.94673E+07	43.3975	43.4789	44.8671	44.8329	50.7801	50.8065
.12623E+08	45.1156	45.1944	46.5359	46.5031	52.2098	52.2353
.15779E+08	46.5691	46.6455	47.9456	47.9139	53.4117	53.4363
.18935E+08	47.8298	47.9040	49.1668	49.1361	54.4493	54.4731
.22090E+08	48.9427	49.0150	50.2439	50.2142	55.3621	55.3853
.25246E+08	49.9409	50.0114	51.2097	51.1808	56.1810	56.2036
.28402E+08	50.8445	50.9134	52.0838	52.0557	56.9219	56.9439
.31558E+08	51.6696	51.7370	52.8817	52.8543	57.5985	57.6200
.63115E+08	57.4028	57.4603	58.4352	58.4123	62.3623	62.3805
.94673E+08	60.8678	60.9203	61.8081	61.7875	65.3340	65.3504
.12623E+09	63.3260	63.3754	64.2099	64.1908	67.4895	67.5048
.15779E+09	65.2435	65.2906	66.0872	66.0691	69.1917	69.2062
.18935E+09	66.8246	66.8700	67.6364	67.6190	70.6027	70.6165
.22090E+09	68.1811	68.2250	68.9656	68.9489	71.8152	71.8286
.25246E+09	69.4027	69.4453	70.1629	70.1469	72.9100	72.9229
.28402E+09	70.3503	70.3917	71.0889	71.0733	73.7466	73.7590
.31558E+09	71.1566	71.1969	71.8749	71.8598	74.4511	74.4632
.63115E+09	76.3095	76.3408	76.8674	76.8560	78.8292	78.8385
.94673E+09	78.3271	78.3519	78.7692	78.7603	80.3147	80.3221

.12623E+10	78.6966	78.7165	79.0511	79.0440	80.2918	80.2979
.15779E+10	78.5042	78.5203	78.7903	78.7845	79.7950	79.8000
.18935E+10	78.1262	78.1393	78.3587	78.3540	79.1782	79.1823
.22090E+10	77.6735	77.6842	77.8635	77.8597	78.5360	78.5394
.25246E+10	77.0456	77.0544	77.2023	77.1991	77.7590	77.7618
.28402E+10	76.5159	76.5232	76.6460	76.6433	77.1102	77.1125
.31558E+10	76.0488	76.0549	76.1579	76.1556	76.5481	76.5501
.63115E+10	73.6905	73.6924	73.7248	73.7241	73.8493	73.8500
.94673E+10	72.2121	72.2134	72.2354	72.2349	72.3205	72.3210
.12623E+11	71.4041	71.4052	71.4228	71.4224	71.4916	71.4919
.15779E+11	70.7637	70.7645	70.7790	70.7787	70.8357	70.8360
.18935E+11	70.0300	70.0307	70.0426	70.0424	70.0896	70.0898
.22090E+11	69.2990	69.2996	69.3095	69.3092	69.3483	69.3486
.25246E+11	68.5976	68.5981	68.6062	68.6060	68.6384	68.6386
.28402E+11	67.9312	67.9316	67.9384	67.9382	67.9651	67.9653
.31558E+11	67.3202	67.3206	67.3261	67.3260	67.3483	67.3485

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:29 NOV 05, 1995 CP= 35864.530
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1129	81.4615	86.0728	87.4828	84.2051	74.7788
.20000E-05	67.1113	81.4593	86.0702	87.4801	84.2026	74.7765
31.558	67.1113	81.4593	86.0702	87.4801	84.2026	74.7765
.31558E+07	69.4174	83.1229	87.5300	88.8666	85.7079	76.6635
.63116E+07	70.8293	84.0290	88.2788	89.5610	86.4988	77.7619
.94673E+07	71.7896	84.5607	88.6780	89.9158	86.9371	78.4643
.12623E+08	72.5150	84.9102	88.9116	90.1113	87.2069	78.9677
.15779E+08	73.0949	85.1544	89.0524	90.2185	87.3813	79.3520
.18935E+08	73.5757	85.3317	89.1363	90.2723	87.4964	79.6578
.22090E+08	73.9845	85.4634	89.1826	90.2914	87.5720	79.9080
.25246E+08	74.3483	85.5756	89.2172	90.3013	87.6336	80.1288
.28402E+08	74.6731	85.6690	89.2392	90.3007	87.6807	80.3227
.31558E+08	74.9676	85.7500	89.2542	90.2948	87.7193	80.4969
.63115E+08	77.1821	86.5185	89.5709	90.4699	88.2015	81.9051
.94673E+08	78.8200	87.3861	90.1943	91.0167	88.9163	83.1168
.12623E+09	80.1466	88.2297	90.8831	91.6566	89.6631	84.1762
.15779E+09	81.2530	88.9868	91.5274	92.2653	90.3499	85.0895
.18935E+09	82.1887	89.6421	92.0918	92.8012	90.9490	85.8711
.22090E+09	82.9965	90.2096	92.5815	93.2665	91.4688	86.5477
.25246E+09	83.7322	90.7312	93.0336	93.6969	91.9481	87.1671
.28402E+09	84.2493	91.0556	93.2957	93.9400	92.2355	87.5817
.31558E+09	84.6621	91.2917	93.4750	94.1020	92.4384	87.9014
.63115E+09	86.7709	91.9966	93.7283	94.2221	92.8901	89.2920
.94673E+09	86.6484	90.8495	92.2511	92.6508	91.5682	88.6665
.12623E+10	85.4142	88.8285	89.9754	90.3035	89.4165	87.0542
.15779E+10	83.9654	86.7549	87.6977	87.9686	87.2392	85.3071
.18935E+10	82.5932	84.8833	85.6614	85.8859	85.2840	83.6967
.22090E+10	81.3463	83.2346	83.8790	84.0656	83.5673	82.2579
.25246E+10	80.0901	81.6583	82.1957	82.3519	81.9366	80.8489
.28402E+10	79.0565	80.3672	80.8177	80.9491	80.6011	79.6919
.31558E+10	78.1864	79.2905	79.6710	79.7823	79.4885	78.7225
.63115E+10	74.3737	74.7278	74.8512	74.8877	74.7928	74.5471
.94673E+10	72.6785	72.9200	73.0044	73.0296	72.9647	72.7973
.12623E+11	71.7805	71.9753	72.0434	72.0638	72.0115	71.8765
.15779E+11	71.0738	71.2343	71.2905	71.3073	71.2642	71.1531
.18935E+11	70.2865	70.4191	70.4656	70.4796	70.4439	70.3521
.22090E+11	69.5113	69.6210	69.6595	69.6711	69.6417	69.5657
.25246E+11	68.7734	68.8642	68.8961	68.9058	68.8814	68.8185
.28402E+11	68.0770	68.1522	68.1787	68.1867	68.1664	68.1144

1 .31558E+11 67.4411 67.5034 67.5254 67.5321 67.5153 67.4722

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:29 NOV 05, 1995 CP= 35864.540
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	74.6370	52.3105	52.0835	34.3291
.20000E-05	74.6347	52.3094	52.0824	34.3289
31.558	74.6346	52.3093	52.0822	34.3288
.31558E+07	76.5263	55.3916	55.1716	38.4764
.63116E+07	77.6287	57.3943	57.1805	41.2843
.94673E+07	78.3348	58.8432	58.6351	43.3975
.12623E+08	78.8415	59.9906	59.7878	45.1156
.15779E+08	79.2289	60.9431	60.7451	46.5691
.18935E+08	79.5375	61.7576	61.5640	47.8298
.22090E+08	79.7904	62.4686	62.2791	48.9427
.25246E+08	80.0135	63.1056	62.9199	49.9409
.28402E+08	80.2096	63.6805	63.4982	50.8445
.31558E+08	80.3859	64.2049	64.0258	51.6696
.63115E+08	81.8079	67.9621	67.8050	57.4028
.94673E+08	83.0269	70.4164	70.2708	60.8678
.12623E+09	84.0907	72.2539	72.1154	63.3260
.15779E+09	85.0073	73.7287	73.5953	65.2435
.18935E+09	85.7914	74.9587	74.8294	66.8246
.22090E+09	86.4703	76.0174	75.8915	68.1811
.25246E+09	87.0917	76.9758	76.8531	69.4027
.28402E+09	87.5082	77.6916	77.5719	70.3503
.31558E+09	87.8296	78.2843	78.1674	71.1566
.63115E+09	89.2349	81.7926	81.6994	76.3095
.94673E+09	88.6207	82.6638	82.5890	78.3271
.12623E+10	87.0173	82.1805	82.1202	78.6966
.15779E+10	85.2773	81.3241	81.2754	78.5042
.18935E+10	83.6724	80.4244	80.3848	78.1262
.22090E+10	82.2380	79.5574	79.5250	77.6735
.25246E+10	80.8325	78.6031	78.5764	77.0456
.28402E+10	79.6783	77.8128	77.7907	76.5159
.31558E+10	78.7111	77.1381	77.1196	76.0488
.63115E+10	74.5435	74.0363	74.0305	73.6905
.94673E+10	72.7949	72.4477	72.4438	72.2121
.12623E+11	71.8746	71.5940	71.5909	71.4041
.15779E+11	71.1515	70.9200	70.9174	70.7637
.18935E+11	70.3508	70.1592	70.1571	70.0300
.22090E+11	69.5647	69.4059	69.4041	69.2990
.25246E+11	68.8177	68.6860	68.6846	68.5976
.28402E+11	68.1137	68.0045	68.0033	67.9312
.31558E+11	67.4716	67.3809	67.3800	67.3202

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 35864.750 TIME= 06:34:29
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose
 VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2874 TEMP	otwoose	34.80	31.56	78.80	.1262E+10
3	NSOL	2610 TEMP	otwiose	35.17	31.56	78.88	.1262E+10
4	NSOL	2556 TEMP	itwoose	35.55	31.56	78.96	.1262E+10
5	NSOL	2504 TEMP	itwiose	35.88	31.56	79.03	.1262E+10
6	NSOL	563 TEMP	stwoose	38.94	31.56	79.65	.1262E+10
7	NSOL	2186 TEMP	stwiose	39.22	31.56	79.70	.1262E+10
8	NSOL	2150 TEMP	htwiose	48.35	31.56	81.89	.9467E+09
9	NSOL	2151 TEMP	gtwiose	53.52	31.56	83.22	.9467E+09
10	NSOL	126 TEMP	c0wiose	56.91	31.56	84.08	.9467E+09
11	NSOL	2085 TEMP	gbwiose	57.95	31.56	84.30	.9467E+09
12	NSOL	2086 TEMP	gbwoose	55.94	31.56	83.72	.9467E+09
13	NSOL	2084 TEMP	sbwiose	52.58	31.56	82.75	.9467E+09
14	NSOL	660 TEMP	sbwoose	52.43	31.56	82.71	.9467E+09
15	NSOL	2236 TEMP	ibwiose	52.20	31.56	82.63	.9467E+09
16	NSOL	2272 TEMP	ibwoose	51.99	31.56	82.56	.9467E+09
17	NSOL	2874 TEMP	obwoose	34.80	31.56	78.80	.1262E+10

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:32 NOV 05, 1995 CP= 35867.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwiose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	34.7971	35.1753	35.5549	35.8804	38.9359	39.2190
.20000E-05	34.7969	35.1750	35.5546	35.8801	38.9355	39.2186
31.558	34.7968	35.1749	35.5546	35.8801	38.9354	39.2185
.31558E+07	38.9232	39.2830	39.6438	39.9530	42.8413	43.1091
.63116E+07	41.7139	42.0590	42.4049	42.7011	45.4601	45.7162
.94673E+07	43.8121	44.1446	44.4778	44.7631	47.4138	47.6600
.12623E+08	45.5169	45.8385	46.1606	46.4363	48.9932	49.2308
.15779E+08	46.9585	47.2703	47.5825	47.8497	50.3237	50.5537

.18935E+08	48.2084	48.5114	48.8147	49.0742	51.4740	51.6972
.22090E+08	49.3115	49.6065	49.9017	50.1543	52.4871	52.7041
.25246E+08	50.3008	50.5886	50.8765	51.1228	53.3952	53.6067
.28402E+08	51.1963	51.4774	51.7587	51.9992	54.2166	54.4230
.31558E+08	52.0139	52.2889	52.5640	52.7993	54.9662	55.1679
.63115E+08	57.6973	57.9320	58.1665	58.3669	60.2013	60.3724
.94673E+08	61.1368	61.3509	61.5646	61.7470	63.4113	63.5667
.12623E+09	63.5794	63.7808	63.9818	64.1533	65.7133	65.8591
.15779E+09	65.4858	65.6782	65.8701	66.0338	67.5195	67.6585
.18935E+09	67.0581	67.2433	67.4280	67.5855	69.0122	69.1456
.22090E+09	68.4070	68.5861	68.7646	68.9168	70.2932	70.4221
.25246E+09	69.6219	69.7955	69.9685	70.1160	71.4480	71.5727
.28402E+09	70.5634	70.7321	70.9002	71.0436	72.3361	72.4571
.31558E+09	71.3640	71.5281	71.6916	71.8310	73.0869	73.2045
.63115E+09	76.4710	76.5987	76.7259	76.8341	77.8043	77.8954
.94673E+09	78.4551	78.5563	78.6571	78.7429	79.5106	79.5827
.12623E+10	78.7991	78.8803	78.9610	79.0298	79.6457	79.7036
.15779E+10	78.5867	78.6522	78.7174	78.7729	79.2705	79.3173
.18935E+10	78.1931	78.2464	78.2993	78.3444	78.7492	78.7873
.22090E+10	77.7281	77.7716	77.8149	77.8517	78.1830	78.2142
.25246E+10	77.0906	77.1264	77.1621	77.1924	77.4659	77.4916
.28402E+10	76.5531	76.5829	76.6125	76.6378	76.8651	76.8865
.31558E+10	76.0800	76.1049	76.1298	76.1509	76.3417	76.3596
.63115E+10	73.7002	73.7081	73.7159	73.7225	73.7828	73.7884
.94673E+10	72.2187	72.2240	72.2293	72.2338	72.2748	72.2786
.12623E+11	71.4094	71.4137	71.4179	71.4216	71.4545	71.4576
.15779E+11	70.7680	70.7715	70.7750	70.7780	70.8051	70.8076
.18935E+11	70.0336	70.0365	70.0393	70.0418	70.0642	70.0663
.22090E+11	69.3020	69.3043	69.3067	69.3087	69.3272	69.3290
.25246E+11	68.6000	68.6020	68.6039	68.6056	68.6209	68.6223
.28402E+11	67.9333	67.9349	67.9365	67.9379	67.9505	67.9517
.31558E+11	67.3219	67.3232	67.3246	67.3257	67.3362	67.3372

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:32 NOV 05, 1995 CP= 35867.890
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP cwwiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.3544	53.5181	56.9101	57.9484	55.9439	52.5765
.20000E-05	48.3536	53.5170	56.9087	57.9470	55.9426	52.5754
31.558	48.3535	53.5169	56.9086	57.9468	55.9424	52.5753
.31558E+07	51.7467	56.6343	59.8399	60.8007	58.8760	55.6535
.63116E+07	53.9695	58.6438	61.7071	62.6129	60.7550	57.6505
.94673E+07	55.5919	60.0874	63.0321	63.8944	62.0953	59.0932
.12623E+08	56.8839	61.2244	64.0664	64.8922	63.1458	60.2346
.15779E+08	57.9606	62.1639	64.9153	65.7098	64.0109	61.1813
.18935E+08	58.8838	62.9642	65.6345	66.4014	64.7459	61.9903
.22090E+08	59.6914	63.6605	66.2575	66.9999	65.3840	62.6961
.25246E+08	60.4144	64.2832	66.8142	67.5346	65.9549	63.3285
.28402E+08	61.0669	64.8441	67.3148	68.0154	66.4689	63.8989
.31558E+08	61.6617	65.3549	67.7704	68.4529	66.9371	64.4192
.63115E+08	65.8754	69.0126	71.0623	71.6272	70.3180	68.1492
.94673E+08	68.5618	71.4131	73.2745	73.7793	72.5776	70.5903
.12623E+09	70.5424	73.2179	74.9634	75.4309	74.2955	72.4202
.15779E+09	72.1192	74.6692	76.3319	76.7728	75.6850	73.8899
.18935E+09	73.4295	75.8796	77.4764	77.8964	76.8466	75.1157
.22090E+09	74.5554	76.9204	78.4612	78.8635	77.8464	76.1706
.25246E+09	75.5728	77.8624	79.3535	79.7403	78.7525	77.1257
.28402E+09	76.3388	78.5613	80.0084	80.3819	79.4207	77.8383
.31558E+09	76.9765	79.1368	80.5431	80.9048	79.9684	78.4276
.63115E+09	80.8120	82.4862	83.5752	83.8489	83.1138	81.9061

.94673E+09	81.8928	83.2207	84.0848	84.3009	83.7150	82.7528
.12623E+10	81.5585	82.6257	83.3207	83.4952	83.0241	82.2500
.15779E+10	80.8171	81.6805	82.2433	82.3856	82.0048	81.3785
.18935E+10	80.0082	80.7114	81.1702	81.2869	80.9772	80.4674
.22090E+10	79.2139	79.7899	80.1659	80.2622	80.0089	79.5916
.25246E+10	78.3171	78.7928	79.1035	79.1837	78.9749	78.6306
.28402E+10	77.5732	77.9690	78.2276	78.2948	78.1214	77.8352
.31558E+10	76.9358	77.2680	77.4852	77.5418	77.3965	77.1565
.63115E+10	73.9706	74.0756	74.1444	74.1628	74.1171	74.0416
.94673E+10	72.4024	72.4738	72.5206	72.5332	72.5023	72.4511
.12623E+11	71.5573	71.6147	71.6524	71.6627	71.6379	71.5967
.15779E+11	70.8896	70.9369	70.9679	70.9764	70.9560	70.9222
.18935E+11	70.1339	70.1729	70.1986	70.2056	70.1888	70.1610
.22090E+11	69.3849	69.4171	69.4383	69.4441	69.4303	69.4073
.25246E+11	68.6686	68.6952	68.7127	68.7175	68.7062	68.6872
.28402E+11	67.9900	68.0120	68.0265	68.0305	68.0211	68.0055
.31558E+11	67.3689	67.3871	67.3991	67.4025	67.3947	67.3817

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 06:34:32 NOV 05, 1995 CP= 35867.900
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP sbwoose	2236 TEMP ibwiose	2272 TEMP ibwoose	2874 TEMP obwoose
.10000E-05	52.4291	52.1981	51.9896	34.7971
.20000E-05	52.4280	52.1971	51.9885	34.7969
31.558	52.4279	52.1969	51.9884	34.7968
.31558E+07	55.5108	55.2872	55.0853	38.9232
.63116E+07	57.5120	57.2950	57.0990	41.7139
.94673E+07	58.9586	58.7476	58.5570	43.8121
.12623E+08	60.1034	59.8980	59.7124	45.5169
.15779E+08	61.0534	60.8530	60.6719	46.9585
.18935E+08	61.8653	61.6696	61.4927	48.2084
.22090E+08	62.5739	62.3824	62.2094	49.3115
.25246E+08	63.2087	63.0212	62.8517	50.3008
.28402E+08	63.7815	63.5976	63.4314	51.1963
.31558E+08	64.3039	64.1234	63.9602	52.0139
.63115E+08	68.0485	67.8907	67.7482	57.6973
.94673E+08	70.4972	70.3512	70.2194	61.1368
.12623E+09	72.3317	72.1930	72.0677	63.5794
.15779E+09	73.8046	73.6711	73.5504	65.4858
.18935E+09	75.0331	74.9037	74.7868	67.0581
.22090E+09	76.0903	75.9646	75.8509	68.4070
.25246E+09	77.0475	76.9249	76.8142	69.6219
.28402E+09	77.7620	77.6425	77.5344	70.5634
.31558E+09	78.3531	78.2364	78.1310	71.3640
.63115E+09	81.8469	81.7542	81.6705	76.4710
.94673E+09	82.7055	82.6314	82.5644	78.4551
.12623E+10	82.2120	82.1525	82.0987	78.7991
.15779E+10	81.3479	81.2999	81.2565	78.5867
.18935E+10	80.4425	80.4036	80.3684	78.1931
.22090E+10	79.5714	79.5396	79.5109	77.7281
.25246E+10	78.6140	78.5879	78.5643	77.0906
.28402E+10	77.8214	77.7998	77.7802	76.5531
.31558E+10	77.1450	77.1269	77.1105	76.0800
.63115E+10	74.0380	74.0324	74.0273	73.7002
.94673E+10	72.4487	72.4449	72.4415	72.2187
.12623E+11	71.5948	71.5918	71.5890	71.4094
.15779E+11	70.9206	70.9182	70.9159	70.7680
.18935E+11	70.1597	70.1576	70.1558	70.0336
.22090E+11	69.4063	69.4046	69.4031	69.3020
.25246E+11	68.6863	68.6849	68.6837	68.6000
.28402E+11	68.0047	68.0036	68.0026	67.9333

.31558E+11 67.3811 67.3802 67.3793 67.3219

***** ROUTINE COMPLETED ***** CP = 35867.910

End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21w2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21w2.db
FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS= 30529
MAXIMUM RECORD NUMBER = 427
RECORD SIZE (1*4 WORDS) = 16384
PAGE FILE SIZE (MB) = 26.688

```

*-----*
|                                     |
|               ANSYS RUN COMPLETED               |
|-----|
|               REV. 5.0 A               |               HP 9000/7XX               |
| CP TIME      (sec) = 35892.590          | TIME = 06:35:18          |
| ELAPSED TIME (sec) = 60318.000          | DATE  = 11/05/95          |
|-----|
*-----*

```

WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****

JOB NAME = glsh21j2
MEMORY REQUESTED (MB) = 87.0
BATCH MODE REQUESTED
start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****

WORK SPACE REQUESTED	=	22806528	87.000 MB	COMMAND LINE
MINIMUM WORK SPACE REQUIRED	=	4718592	18.000 MB	
MINIMUM WORK SPACE RECOMMENDED	=	6702496	25.568 MB	
WORK SPACE OBTAINED	=	22806526	87.000 MB	
BYTES PER WORD	=	4		

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FINITE ELEMENT COMPUTER PROGRAM. NEITHER SWANSON ANALYSIS
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POSSIBLE. SUGGESTIONS AND COMMENTS ARE WELCOMED. ANY
ERRORS ENCOUNTERED IN EITHER THE DOCUMENTATION OR THE
RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
ENTER HELP FOR GENERAL ANSYS HELP INFORMATION

```
1 /COM, *****
2 /COM, ANSYS REVISION 5.0A 05/23/1995
3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
4 /COM, *****
5 /COM, *
6 /COM, * File name: glsh21j2.inp
7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP *
9 /COM, *
10 /COM, * Material Property file: propsd1.dat
11 /COM, *
12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED)
13 /COM, *
14 /COM, *
15 /COM, * SNF Heat Loads file: hangls1.dat
16 /COM, * Initial Heat Load: 870 W/canister
17 /COM, *
18 /COM, * Surface Temp. file: c21j5a.parm *
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19 /COM, *      25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #2)*
20 /COM, *      5.0 m Diameter Drift with Concrete Invert *
21 /COM, *      Drift spacing = 67.5 m *
22 /COM, *      WP c/c spacing = 21.6 m *
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,param,
35 /COM, Read in surface temps. from repository model
36 PARRES,CHANGE,c21j5a,param,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 PI=3.141592654
64 SQT= SQT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 *SET,DFRAD,2.5,
73 *SET,INVRT,0.7,
74 *SET,WPSPC,21.6,
75 *SET,OFFST,0.1833,
76 XXX=SQT(DFRAD**2-(DFRAD-INVRT)**2)
77 YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLen = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM,          DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM,          Required ceramic and drum parameters:
102 /COM,          CDRAD = glass radius (m)
103 /COM,          CDHGT = glass hieght; hieght of fill (m)
104 /COM,          DRMIR = SRP Canister inner rad. (m)
105 /COM,          DRMOR = SRP Canister drum outer rad. (m)
106 /COM,          DRBIT = SRP Canister thickness at bottom of Canister (m)
107 /COM,          DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM,          DRLEN = SRP Canister outer length (m)
109 /COM,          DRILN = SRP Canister Inner length (m)
110 /COM,          DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM,          DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM,          DRMOF = SRP Canister center line off set (m)
113 /COM,          PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM,          FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBIT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBIT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM,          Define Extrude Distances as required:
130 /COM,          Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBIT
136 /COM,          Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM,          *****
146 /COM,          Define calculated parameters
147 /COM,          ASSY = assembly heat production (W) f(yrs)
148 /COM,          FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM,          *****
154 /COM,          Define 45 degree point of reference:
155 /COM,          TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM,          TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM,          HCI45 = x coord. WP Center Line side of center Glass at
158 /COM,          HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM, CCO45 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM, SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM, SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM, MI45 = x coord. DCIRD at 45 deg.
163 /COM, MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM, DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TCO45=(DRMOF+DRMOR-DRMOR/SQT)
166 TCI45=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CCO45=(DRMOF+DRMOR)
170 SCO45=(DRMOF+DRMOR+DRMOR/SQT)
171 SCI45=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM, *****
177 /COM, Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM, *****
194 /COM, File props01.dat describes material properties
195 /COM, and thier reference numbers
196 MPREAD,propsd1,dat,
197 /COM, *****
198 /COM, Define new material 15 for low thermal loading
199 /COM, outer barrier of 70/30 Copper Nickel (C71500)
200 /COM, Density: DENS (kg/m^3)
201 /COM, Emissivity: EMIS
202 /COM, Conductivity: KXX (W/m/K)
203 /COM, Specific Heat: C (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM, Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM, Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM, Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM, Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7,(5.0/9.0*(1112.0-32.0)),(5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM, *****
223 /COM, Read in single drum heat loads
224 /COM, Calculate the volumetric heat generation
225 /COM, (Assembly time is in years, FUEL is in seconds)
226 /INPUT,hangls1,dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLU),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0.0,0.0,0.0,45.0,0.0,0.0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR+DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR+DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR+DRMOR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR+DRMOR/SQT), (DRMOF+DRMOR-DRMOR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9,10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5,10,15,11,
274 AL, 8, 9,16,10,
275 AL, 7,12,13, 9,
276 AL, 6,11,14,12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, 0.0, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, 0.0, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, DO45, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM,      Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM,      *****
388 /COM,      Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM,      GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM,      Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM,      Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM,      Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM,      Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM,      Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM,      Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM,      *****
421 /COM,      Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM,      *****
425 /COM,      Set up drift wall radiation matrix
426 /COM,      (K's 32 - 34)
427 /COM,      1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM,      Define extrude lines (will not use)
432 /COM,      (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM,      Extrude drift 8 elements with smallest
436 /COM,      elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39,                (0.0-XXX),            YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WPSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WPSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WPSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WPSPC/2.0),
466 K,44,                (0.0-XXX),            YYY, -1*(WPSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WPSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WPSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WPSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WPSPC/2.0),
485 K,49,                (0.0-XXX),            YYY, (WPSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,,83,84,1,
614 LSEL,A,LINE,,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,,
637 VDRAG, 9,10,11,12,,,35,36,,,,
638 VDRAG,13,14,,,,,35,36,,,,
639 VDRAG,15,16,,,,,35,36,,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,,
646 VDRAG,13,14,,,,,40,41,42,,,,
647 VDRAG,15,16,,,,,40,41,42,,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0.0,0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0.0,0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0.0,0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM,      *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM,      *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM,      *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obdrwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrcangap,
1140 SE,obrdrwgap,
1141 /COM, Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM, *****
1151 /COM, Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM, *****
1156 /COM, Gaps in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM, DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM, This section used only if both rad. and He conducti
1159 /COM, is used in the model.
1160 /COM, He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM, Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM, He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM, Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM, He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,4,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TME0,TM10
1342     TIME,TM,
1343     VSEL,S,MAT,,5,
1344     ESLV,S,
1345     BFE,ALL,HGEN,,(FUEL(TM)),
1346     VSEL,ALL
1347     ESEL,ALL
1348     ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359 *ENDDO
1360 /COM,          Apply loads and solve for 1 to 9 years
1361 *DO,TM,TME1,TME9,TM11
1362      TIME,TM,
1363      VSEL,S,MAT,,5,
1364      ESLV,S,
1365      BFE,ALL,HGEN,,(FUEL(TM)),
1366      VSEL,ALL
1367      ESEL,ALL
1368      ASEL,S,AREA,,17,26,1
1369      NSLA,S,1,
1370      DDELE,ALL,TEMP,
1371      ASEL,ALL,
1372      NSEL,ALL,
1373      ASEL,S,AREA,,17,26,1
1374      NSLA,S,1,
1375      D,ALL,TEMP,(DFSID(TM)),
1376      ASEL,ALL,
1377      NSEL,ALL,
1378      SOLVE
1379 *ENDDO
1380 /COM,          Apply loads and solve for 10 to 90 years
1381 *DO,TM,TME10,TME90,TM110
1382      TIME,TM,
1383      VSEL,S,MAT,,5,
1384      ESLV,S,
1385      BFE,ALL,HGEN,,(FUEL(TM)),
1386      VSEL,ALL
1387      ESEL,ALL
1388      ASEL,S,AREA,,17,26,1
1389      NSLA,S,1,
1390      DDELE,ALL,TEMP,
1391      ASEL,ALL,
1392      NSEL,ALL,
1393      ASEL,S,AREA,,17,26,1
1394      NSLA,S,1,
1395      D,ALL,TEMP,(DFSID(TM)),
1396      ASEL,ALL,
1397      NSEL,ALL,
1398      SOLVE
1399 *ENDDO
1400 /COM,          Apply loads and solve for 100 to 1000 years
1401 *DO,TM,TME100,TME1000,TM1100
1402      TIME,TM,
1403      VSEL,S,MAT,,5,
1404      ESLV,S,
1405      BFE,ALL,HGEN,,(FUEL(TM)),
1406      VSEL,ALL
1407      ESEL,ALL
1408      ASEL,S,AREA,,17,26,1
1409      NSLA,S,1,
1410      DDELE,ALL,TEMP,
1411      ASEL,ALL,
1412      NSEL,ALL,
1413      ASEL,S,AREA,,17,26,1
1414      NSLA,S,1,
1415      D,ALL,TEMP,(DFSID(TM)),
1416      ASEL,ALL,
1417      NSEL,ALL,
1418      SOLVE

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1419 *ENDDO
1420 FINISH
1421 /COM, *****
1422 /COM, Create element contour plots of solution results
1423 /COM,
1424 /COM, Sort through solution results for time of max temp.
1425 /POST26,
1426 NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgl,
1427 STORE,NEW,
1428 *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1429 FINISH
1430 /POST1,
1431 /COM, Create temperature contour plots of WP at peak
1432 /RESET,
1433 /TYPE,,HIDP,
1434 /VIEW,1,1,1,1,
1435 /DIST,1,3,0,
1436 /NUM, 1,
1437 /GLINE,,-1,
1438 /TRIAD,OFF,
1439 /PNUM,MAT, 1,
1440 VSEL,S,MAT,,1,5,4
1441 CSYS,31,
1442 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1443 VSEL,U,LOC,Y,-45.0,135.0,
1444 CSYS,0,
1445 ESLV,S
1446 VSEL,S,MAT,,1,5,4
1447 CSYS,32,
1448 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1449 VSEL,U,LOC,Y,-45.0,45.0,
1450 CSYS,0,
1451 ESLV,A
1452 VSEL,S,LOC,X,-100.0,0.0,
1453 ESLV,A
1454 ASEL,S,AREA,,17,26,1
1455 ASEL,R,LOC,X,-100.0,0.0,
1456 ESLA,A
1457 SET,NEAR,,,,TMTMAX,
1458 /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1459 /SHOW,solupk,grph,0,8,
1460 /CONTOUR,1,128,AUTO,
1461 PLNSOL,TEMP,
1462 /COM, Create temperature contour plots at 5, 10, 50, and 100 yrs
1463 SET,NEAR,,,,(TM_START+(5*TMI1)),
1464 /TITLE, DHLW WP at 5 years
1465 /SHOW,solu5,grph,0,8,
1466 /CONTOUR,1,128,USER,
1467 PLNSOL,TEMP,
1468 SET,NEAR,,,,TME10,
1469 /TITLE, DHLW WP at 10 years
1470 /SHOW,solu10,grph,0,8,
1471 /CONTOUR,1,128,USER,
1472 PLNSOL,TEMP,
1473 SET,NEAR,,,,TME50,
1474 /TITLE, DHLW WP at 50 years
1475 /SHOW,solu50,grph,0,8,
1476 /CONTOUR,1,128,USER,
1477 PLNSOL,TEMP,
1478 SET,NEAR,,,,TME100,
1479 /TITLE, DHLW WP at 100 years
1480 /SHOW,solu100,grph,0,8,
1481 /CONTOUR,1,128,USER,
1482 PLNSOL,TEMP,
1483 ESEL,ALL,
1484 FINISH
1485 /COM, *****
1486 /COM, Print time/temperature output at specific locations
1487 /COM, Save profile from center to edge
1488 /COM,

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1489 /COM,          Variable Legend: A01i000
1490 /COM,          t = structural stainless Canister near center line
1491 /COM,          c = center of Glass log
1492 /COM,          h = halfway between center and Canister
1493 /COM,          s = structural stainless Canister
1494 /COM,          i = inner barrier of DC
1495 /COM,          o = outer barrier of DC
1496 /COM,          ## = cartesian quadrant number of Canister
1497 /COM,          i = side of assembly toward center of WP
1498 /COM,          o = side of assembly toward edge of WP
1499 /COM,          045 = profile 45 deg down
1500 /COM,          135 = profile 45 deg up
1501 /POST26,
1502 NUMVAR,32,
1503 /COM,          *****
1504 /COM,          *Temperature Profile from center to lower right (45 deg.) z=2/3*
1505 /COM,          *****
1506 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1507 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1508 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1509 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1510 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1511 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1512 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1513 NSOL, 9,(NODE(MI45, (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1514 NSOL,10,(NODE(MO45, (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1515 NSOL,11,(NODE(DO45, (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1516 PRVAR, 2, 3, 4, 5, 6, 7,
1517 PRVAR, 8, 9,10,11,
1518 /COM,          *****
1519 /COM,          * Temperature Profile from center to lower right (45 deg.) *
1520 /COM,          *****
1521 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),0.0)),TEMP,,t04i045,
1522 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),0.0)),TEMP,,t04o045,
1523 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),0.0)),TEMP,,h04i045,
1524 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),0.0)),TEMP,,c04i045,
1525 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),0.0)),TEMP,,h04o045,
1526 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),0.0)),TEMP,,s04i045,
1527 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),0.0)),TEMP,,s04o045,
1528 NSOL, 9,(NODE(MI45, (-1.0*MI45),0.0)),TEMP,,i04i045,
1529 NSOL,10,(NODE(MO45, (-1.0*MO45),0.0)),TEMP,,i04o045,
1530 NSOL,11,(NODE(DO45, (-1.0*DO45),0.0)),TEMP,,o04o045,
1531 PRVAR, 2, 3, 4, 5, 6, 7,
1532 PRVAR, 8, 9,10,11,
1533 /COM,          *****
1534 /COM,          *****
1535 /COM,          * Temperature Profile from center to upper right (135 deg.) *
1536 /COM,          *****
1537 NSOL, 2,(NODE(TCO45, TCO45,0.0)),TEMP,,t01i135,
1538 NSOL, 3,(NODE(TCI45, TCI45,0.0)),TEMP,,t01o135,
1539 NSOL, 4,(NODE(HCI45, HCI45,0.0)),TEMP,,h01i135,
1540 NSOL, 5,(NODE(CCO45, CCO45,0.0)),TEMP,,c01i135,
1541 NSOL, 6,(NODE(HCO45, HCO45,0.0)),TEMP,,h01o135,
1542 NSOL, 7,(NODE(SCI45, SCI45,0.0)),TEMP,,s01i135,
1543 NSOL, 8,(NODE(SCO45, SCO45,0.0)),TEMP,,s01o135,
1544 NSOL, 9,(NODE(MI45, MI45,0.0)),TEMP,,i01i135,
1545 NSOL,10,(NODE(MO45, MO45,0.0)),TEMP,,i01o135,
1546 NSOL,11,(NODE(DO45, DO45,0.0)),TEMP,,o01o135,
1547 PRVAR, 2, 3, 4, 5, 6, 7,
1548 PRVAR, 8, 9,10,11,
1549 /COM,          *****
1550 /COM,          *****
1551 /COM,          * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1552 /COM,          *****
1553 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1554 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1555 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,
1556 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-1*BTPT4))),TEMP,,cb4i045,
1557 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-1*BTPT4))),TEMP,,hb4o045,
1558 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-1*BTPT4))),TEMP,,sb4i045,

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1559 NSOL, 8, (NODE(      SC045,  (-1.0*SC045), (-1*BTPT4))), TEMP, , sb4o045,
1560 NSOL, 9, (NODE(      MI45,  (-1.0*MI45), (-1*BTPT4))), TEMP, , ib4i045,
1561 NSOL, 10, (NODE(     MO45,  (-1.0*MO45), (-1*BTPT4))), TEMP, , ib4o045,
1562 NSOL, 11, (NODE(     DO45,  (-1.0*DO45), (-1*BTPT4))), TEMP, , ob4o045,
1563 PRVAR, 2, 3, 4, 5, 6, 7,
1564 PRVAR, 8, 9, 10, 11,
1565 /COM,
1566 /COM, *****
1567 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1568 /COM, *****
1569 NSOL, 2, (NODE(      TC045,      TC045, (-1*BTPT4))), TEMP, , t01i135,
1570 NSOL, 3, (NODE(      TC145,      TC145, (-1*BTPT4))), TEMP, , t01o135,
1571 NSOL, 4, (NODE(      HC145,      HC145, (-1*BTPT4))), TEMP, , h01i135,
1572 NSOL, 5, (NODE(      CC045,      CC045, (-1*BTPT4))), TEMP, , c01i135,
1573 NSOL, 6, (NODE(      HC045,      HC045, (-1*BTPT4))), TEMP, , h01o135,
1574 NSOL, 7, (NODE(      SC145,      SC145, (-1*BTPT4))), TEMP, , s01i135,
1575 NSOL, 8, (NODE(      SC045,      SC045, (-1*BTPT4))), TEMP, , s01o135,
1576 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, , i01i135,
1577 NSOL, 10, (NODE(     MO45,      MO45, (-1*BTPT4))), TEMP, , i01o135,
1578 NSOL, 11, (NODE(     DO45,      DO45, (-1*BTPT4))), TEMP, , o01o135,
1579 PRVAR, 2, 3, 4, 5, 6, 7,
1580 PRVAR, 8, 9, 10, 11,
1581 /COM,
1582 /COM, *****
1583 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1584 /COM, *****
1585 NSOL, 2, (NODE(      TC045,      (-1.0*TC045), TPPT6)), TEMP, , tt4i045,
1586 NSOL, 3, (NODE(      TC145,      (-1.0*TC145), TPPT6)), TEMP, , tt4o045,
1587 NSOL, 4, (NODE(      HC145,      (-1.0*HC145), TPPT6)), TEMP, , ht4i045,
1588 NSOL, 5, (NODE(      CC045,      (-1.0*CC045), TPPT6)), TEMP, , ct4i045,
1589 NSOL, 6, (NODE(      HC045,      (-1.0*HC045), TPPT6)), TEMP, , ht4o045,
1590 NSOL, 7, (NODE(      SC145,      (-1.0*SC145), TPPT6)), TEMP, , st4i045,
1591 NSOL, 8, (NODE(      SC045,      (-1.0*SC045), TPPT6)), TEMP, , st4o045,
1592 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, , it4i045,
1593 NSOL, 10, (NODE(     MO45,      (-1.0*MO45), TPPT6)), TEMP, , it4o045,
1594 NSOL, 11, (NODE(     DO45,      (-1.0*DO45), TPPT6)), TEMP, , ot4o045,
1595 PRVAR, 2, 3, 4, 5, 6, 7,
1596 PRVAR, 8, 9, 10, 11,
1597 /COM,
1598 /COM, *****
1599 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1600 /COM, *****
1601 NSOL, 2, (NODE(      TC045,      TC045, TPPT6)), TEMP, , t01i135,
1602 NSOL, 3, (NODE(      TC145,      TC145, TPPT6)), TEMP, , t01o135,
1603 NSOL, 4, (NODE(      HC145,      HC145, TPPT6)), TEMP, , h01i135,
1604 NSOL, 5, (NODE(      CC045,      CC045, TPPT6)), TEMP, , c01i135,
1605 NSOL, 6, (NODE(      HC045,      HC045, TPPT6)), TEMP, , h01o135,
1606 NSOL, 7, (NODE(      SC145,      SC145, TPPT6)), TEMP, , s01i135,
1607 NSOL, 8, (NODE(      SC045,      SC045, TPPT6)), TEMP, , s01o135,
1608 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, , i01i135,
1609 NSOL, 10, (NODE(     MO45,      MO45, TPPT6)), TEMP, , i01o135,
1610 NSOL, 11, (NODE(     DO45,      DO45, TPPT6)), TEMP, , o01o135,
1611 PRVAR, 2, 3, 4, 5, 6, 7,
1612 PRVAR, 8, 9, 10, 11,
1613 /COM,
1614 /COM, *****
1615 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1616 /COM, *****
1617 NSOL, 2, (NODE(      CC045,      CC045,      MIDPT)), TEMP, , ot1o135,
1618 NSOL, 3, (NODE(      CC045,      CC045,      TPPT1)), TEMP, , ot1i135,
1619 NSOL, 4, (NODE(      CC045,      CC045,      TPPT2)), TEMP, , it1o135,
1620 NSOL, 5, (NODE(      CC045,      CC045,      TPPT3)), TEMP, , it1i135,
1621 NSOL, 6, (NODE(      CC045,      CC045,      TPPT4)), TEMP, , st1o135,
1622 NSOL, 7, (NODE(      CC045,      CC045,      TPPT5)), TEMP, , st1i135,
1623 NSOL, 8, (NODE(      CC045,      CC045,      TPPT6)), TEMP, , ht1i135,
1624 NSOL, 9, (NODE(      CC045,      CC045,      ( 0.5*TPPT6))), TEMP, , gt1i135,
1625 NSOL, 10, (NODE(      CC045,      CC045,      0.0)), TEMP, , c01i135,
1626 NSOL, 11, (NODE(      CC045,      CC045,      (-0.33*BTPT4))), TEMP, , gb1i135,
1627 NSOL, 12, (NODE(      CC045,      CC045,      (-0.66*BTPT4))), TEMP, , gb1h135,
1628 NSOL, 13, (NODE(      CC045,      CC045,      (-1.0*BTPT4))), TEMP, , sb1i135,

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1629 NSOL,14,(NODE( CCO45, CCO45, (-1.0*BTPT3))),TEMP,,sb1o135,
1630 NSOL,15,(NODE( CCO45, CCO45, (-1.0*BTPT2))),TEMP,,ib1i135,
1631 NSOL,16,(NODE( CCO45, CCO45, (-1.0*BTPT1))),TEMP,,ib1o135,
1632 NSOL,17,(NODE( CCO45, CCO45, MIDPT)),TEMP,,ob1o135,
1633 PRVAR, 2, 3, 4, 5, 6, 7,
1634 PRVAR, 8, 9,10,11,12,13,
1635 PRVAR,14,15,16,17,
1636 /COM,
1637 /COM, *****
1638 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1639 /COM, *****
1640 NSOL, 2,(NODE( CCO45,(-1.0*CCO45), MIDPT)),TEMP,,ot4o045,
1641 NSOL, 3,(NODE( CCO45,(-1.0*CCO45), TPPT1)),TEMP,,ot4i045,
1642 NSOL, 4,(NODE( CCO45,(-1.0*CCO45), TPPT2)),TEMP,,it4o045,
1643 NSOL, 5,(NODE( CCO45,(-1.0*CCO45), TPPT3)),TEMP,,it4i045,
1644 NSOL, 6,(NODE( CCO45,(-1.0*CCO45), TPPT4)),TEMP,,st4o045,
1645 NSOL, 7,(NODE( CCO45,(-1.0*CCO45), TPPT5)),TEMP,,st4i045,
1646 NSOL, 8,(NODE( CCO45,(-1.0*CCO45), TPPT6)),TEMP,,ht4i045,
1647 NSOL, 9,(NODE( CCO45,(-1.0*CCO45), ( 0.5*TPPT6))),TEMP,,gt4i045,
1648 NSOL,10,(NODE( CCO45,(-1.0*CCO45), 0.0)),TEMP,,c04i045,
1649 NSOL,11,(NODE( CCO45,(-1.0*CCO45), (-0.33*BTPT4))),TEMP,,gb4i045,
1650 NSOL,12,(NODE( CCO45,(-1.0*CCO45), (-0.66*BTPT4))),TEMP,,gb4h045,
1651 NSOL,13,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT4))),TEMP,,sb4i045,
1652 NSOL,14,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT3))),TEMP,,sb4o045,
1653 NSOL,15,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT2))),TEMP,,ib4i045,
1654 NSOL,16,(NODE( CCO45,(-1.0*CCO45), (-1.0*BTPT1))),TEMP,,ib4o045,
1655 NSOL,17,(NODE( CCO45,(-1.0*CCO45), MIDPT)),TEMP,,ob4o045,
1656 PRVAR, 2, 3, 4, 5, 6, 7,
1657 PRVAR, 8, 9,10,11,12,13,
1658 PRVAR,14,15,16,17,
1659 /COM,
1660 /COM, *****
1661 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1662 /COM, *****
1663 NSOL, 2,(NODE( TCO45, TCO45, MIDPT)),TEMP,,ot1oise,
1664 NSOL, 3,(NODE( TCO45, TCO45, TPPT1)),TEMP,,ot1iise,
1665 NSOL, 4,(NODE( TCO45, TCO45, TPPT2)),TEMP,,it1oise,
1666 NSOL, 5,(NODE( TCO45, TCO45, TPPT3)),TEMP,,it1iise,
1667 NSOL, 6,(NODE( TCO45, TCO45, TPPT4)),TEMP,,st1oise,
1668 NSOL, 7,(NODE( TCO45, TCO45, TPPT5)),TEMP,,st1iise,
1669 NSOL, 8,(NODE( TCO45, TCO45, TPPT6)),TEMP,,ht1iise,
1670 NSOL, 9,(NODE( TCO45, TCO45, ( 0.5*TPPT6))),TEMP,,gt1iise,
1671 NSOL,10,(NODE( TCO45, TCO45, 0.0)),TEMP,,c01iise,
1672 NSOL,11,(NODE( TCO45, TCO45, (-0.33*BTPT4))),TEMP,,gb1iise,
1673 NSOL,12,(NODE( TCO45, TCO45, (-0.66*BTPT4))),TEMP,,gb1hise,
1674 NSOL,13,(NODE( TCO45, TCO45, (-1.0*BTPT4))),TEMP,,sb1iise,
1675 NSOL,14,(NODE( TCO45, TCO45, (-1.0*BTPT3))),TEMP,,sb1oise,
1676 NSOL,15,(NODE( TCO45, TCO45, (-1.0*BTPT2))),TEMP,,ib1iise,
1677 NSOL,16,(NODE( TCO45, TCO45, (-1.0*BTPT1))),TEMP,,ib1oise,
1678 NSOL,17,(NODE( TCO45, TCO45, MIDPT)),TEMP,,ob1oise,
1679 PRVAR, 2, 3, 4, 5, 6, 7,
1680 PRVAR, 8, 9,10,11,12,13,
1681 PRVAR,14,15,16,17,
1682 /COM,
1683 /COM, *****
1684 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1685 /COM, *****
1686 NSOL, 2,(NODE( SCO45, SCO45, MIDPT)),TEMP,,ot1oose,
1687 NSOL, 3,(NODE( SCO45, SCO45, TPPT1)),TEMP,,ot1iise,
1688 NSOL, 4,(NODE( SCO45, SCO45, TPPT2)),TEMP,,it1oose,
1689 NSOL, 5,(NODE( SCO45, SCO45, TPPT3)),TEMP,,it1iise,
1690 NSOL, 6,(NODE( SCO45, SCO45, TPPT4)),TEMP,,st1oose,
1691 NSOL, 7,(NODE( SCO45, SCO45, TPPT5)),TEMP,,st1iise,
1692 NSOL, 8,(NODE( SCO45, SCO45, TPPT6)),TEMP,,ht1iise,
1693 NSOL, 9,(NODE( SCO45, SCO45, ( 0.5*TPPT6))),TEMP,,gt1iise,
1694 NSOL,10,(NODE( SCO45, SCO45, 0.0)),TEMP,,c01iise,
1695 NSOL,11,(NODE( SCO45, SCO45, (-0.33*BTPT4))),TEMP,,gb1iise,
1696 NSOL,12,(NODE( SCO45, SCO45, (-0.66*BTPT4))),TEMP,,gb1hise,
1697 NSOL,13,(NODE( SCO45, SCO45, (-1.0*BTPT4))),TEMP,,sb1iise,
1698 NSOL,14,(NODE( SCO45, SCO45, (-1.0*BTPT3))),TEMP,,sb1oose,

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1699 NSOL,15,(NODE(      SCO45,      SCO45,      (-1.0*BTPT2))),TEMP,,ib1iose,
1700 NSOL,16,(NODE(      SCO45,      SCO45,      (-1.0*BTPT1))),TEMP,,ib1oose,
1701 NSOL,17,(NODE(      SCO45,      SCO45,      MIDPT)),TEMP,,ob1oose,
1702 PRVAR, 2, 3, 4, 5, 6, 7,
1703 PRVAR, 8, 9,10,11,12,13,
1704 PRVAR,14,15,16,17,
1705 /COM,
1706 /COM,
1707 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1708 /COM,
1709 NSOL, 2,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ot4iose,
1710 NSOL, 3,(NODE(      TCO45,(-1.0*TCO45),      TPPT1)),TEMP,,ot4iise,
1711 NSOL, 4,(NODE(      TCO45,(-1.0*TCO45),      TPPT2)),TEMP,,it4iose,
1712 NSOL, 5,(NODE(      TCO45,(-1.0*TCO45),      TPPT3)),TEMP,,it4iise,
1713 NSOL, 6,(NODE(      TCO45,(-1.0*TCO45),      TPPT4)),TEMP,,st4iose,
1714 NSOL, 7,(NODE(      TCO45,(-1.0*TCO45),      TPPT5)),TEMP,,st4iise,
1715 NSOL, 8,(NODE(      TCO45,(-1.0*TCO45),      TPPT6)),TEMP,,ht4iise,
1716 NSOL, 9,(NODE(      TCO45,(-1.0*TCO45),      ( 0.5*TPPT6))),TEMP,,gt4iise,
1717 NSOL,10,(NODE(      TCO45,(-1.0*TCO45),      0.0)),TEMP,,c04iise,
1718 NSOL,11,(NODE(      TCO45,(-1.0*TCO45),      (-0.33*BTPT4))),TEMP,,gb4iise,
1719 NSOL,12,(NODE(      TCO45,(-1.0*TCO45),      (-0.66*BTPT4))),TEMP,,gb4hise,
1720 NSOL,13,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT4))),TEMP,,sb4iise,
1721 NSOL,14,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT3))),TEMP,,sb4iose,
1722 NSOL,15,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT2))),TEMP,,ib4iise,
1723 NSOL,16,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT1))),TEMP,,ib4iose,
1724 NSOL,17,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ob4iose,
1725 PRVAR, 2, 3, 4, 5, 6, 7,
1726 PRVAR, 8, 9,10,11,12,13,
1727 PRVAR,14,15,16,17,
1728 /COM,
1729 /COM,
1730 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1731 /COM,
1732 NSOL, 2,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ot4oose,
1733 NSOL, 3,(NODE(      SCO45,(-1.0*SCO45),      TPPT1)),TEMP,,ot4iose,
1734 NSOL, 4,(NODE(      SCO45,(-1.0*SCO45),      TPPT2)),TEMP,,it4oose,
1735 NSOL, 5,(NODE(      SCO45,(-1.0*SCO45),      TPPT3)),TEMP,,it4iose,
1736 NSOL, 6,(NODE(      SCO45,(-1.0*SCO45),      TPPT4)),TEMP,,st4oose,
1737 NSOL, 7,(NODE(      SCO45,(-1.0*SCO45),      TPPT5)),TEMP,,st4iose,
1738 NSOL, 8,(NODE(      SCO45,(-1.0*SCO45),      TPPT6)),TEMP,,ht4iose,
1739 NSOL, 9,(NODE(      SCO45,(-1.0*SCO45),      ( 0.5*TPPT6))),TEMP,,gt4iose,
1740 NSOL,10,(NODE(      SCO45,(-1.0*SCO45),      0.0)),TEMP,,c04iose,
1741 NSOL,11,(NODE(      SCO45,(-1.0*SCO45),      (-0.33*BTPT4))),TEMP,,gb4iose,
1742 NSOL,12,(NODE(      SCO45,(-1.0*SCO45),      (-0.66*BTPT4))),TEMP,,gb4hose,
1743 NSOL,13,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT4))),TEMP,,sb4iose,
1744 NSOL,14,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT3))),TEMP,,sb4oose,
1745 NSOL,15,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT2))),TEMP,,ib4iose,
1746 NSOL,16,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT1))),TEMP,,ib4oose,
1747 NSOL,17,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ob4oose,
1748 PRVAR, 2, 3, 4, 5, 6, 7,
1749 PRVAR, 8, 9,10,11,12,13,
1750 PRVAR,14,15,16,17,
1751 /COM,
1752 /COM,
1753 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1754 /COM,
1755 NSOL, 2,(NODE(      DCORD,0.0,      MIDPT)),TEMP,,otwoose,
1756 NSOL, 3,(NODE(      DCORD,0.0,      TPPT1)),TEMP,,otwiose,
1757 NSOL, 4,(NODE(      DCORD,0.0,      TPPT2)),TEMP,,itwoose,
1758 NSOL, 5,(NODE(      DCORD,0.0,      TPPT3)),TEMP,,itwiose,
1759 NSOL, 6,(NODE(      DCORD,0.0,      TPPT4)),TEMP,,stwoose,
1760 NSOL, 7,(NODE(      DCORD,0.0,      TPPT5)),TEMP,,stwiose,
1761 NSOL, 8,(NODE(      DCORD,0.0,      TPPT6)),TEMP,,htwiose,
1762 NSOL, 9,(NODE(      DCORD,0.0,      ( 0.5*TPPT6))),TEMP,,gtwiose,
1763 NSOL,10,(NODE(      DCORD,0.0,      0.0)),TEMP,,c0wiose,
1764 NSOL,11,(NODE(      DCORD,0.0,      (-0.33*BTPT4))),TEMP,,gbwiose,
1765 NSOL,12,(NODE(      DCORD,0.0,      (-0.66*BTPT4))),TEMP,,gbwoose,
1766 NSOL,13,(NODE(      DCORD,0.0,      (-1.0*BTPT4))),TEMP,,sbwiose,
1767 NSOL,14,(NODE(      DCORD,0.0,      (-1.0*BTPT3))),TEMP,,sbwoose,
1768 NSOL,15,(NODE(      DCORD,0.0,      (-1.0*BTPT2))),TEMP,,ibwiose,

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```

1769 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1770 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1771 PRVAR, 2, 3, 4, 5, 6, 7,
1772 PRVAR, 8, 9,10,11,12,13,
1773 PRVAR,14,15,16,17,
1774 FINISH
1775 /COM, *****
1776 /COM, End of batch input file
1777 /COM, *****
1778 SAVE,
1779 /EXIT,
1780 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP     /input,,inp,
ABBREVIATION= X3D     /show,3d,
ABBREVIATION= X11     /show,x11,
ABBREVIATION= VEC     /show,,,1,
ABBREVIATION= RAS     /show,,,0,

```


ABBREVIATION= ON /menu,on,

ABBREVIATION= OFF /menu,off,

ABBREVIATION= NVP /config,nvpag,512,

ABBREVIATION= QUIT /exit,nosav,

XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

END start.ans

To start ANSYS menu:

type: x3d for console
x11 for X-term

type: on

ANSYS REVISION 5.0A 05/23/1995

3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

* * *

* File name: glsh21j2.inp * *

* 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container * *

* No Helium Fill Gas - WP placed at mid point between SNF WP * *

* * *

* Material Property file: propsd1.dat * *

* * *

* SNF Conductivity file: TBD (NOT REQUIRED) * *

* * *

* SNF Heat Loads file: hangls1.dat * *

* Initial Heat Load: 870 W/canister * *

* * *

* Surface Temp. file: c21j5a.parm * *

* 25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #2)* *

* 5.0 m Diameter Drift with Concrete Invert * *

* Drift spacing = 67.5 m * *

* WP c/c spacing = 21.6 m * *

* * *

Increase the number of database pages from 16 (256) to 32 Mb

DONT DO: /CONFIG,nvpag,512,

Work space must also be increased (-m 87) For Radiation Matix

TITLE=

DHLW Glass Form Waste Package

SI UNITS SPECIFIED

LENGTH = METERS(M)

MASS = KILOGRAMS(KG)

TIME = SECONDS(SEC)

TEMPERATURE = CENTIGRADE

CURRENT = AMPS

Read in average effective conductivities from SNF model

No Need for File: PARRES,CHANGE,pwr15e,parm,

Read in surface temps. from repository model

*** NOTE ***

CP= .640 TIME= 20:55:21

Restore ANSYS parameters from file= c21j5a.parm.

/INPUT FILE= c21j5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WPSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WPSPC = 21.60000

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01

PARAMETER IWALL = .2000000E-01

PARAMETER DCORD = .8545000
 PARAMETER DCLN = 3.230000
 PARAMETER DCLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass height; height of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLL = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLL = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000
 PARAMETER BTPT4 = 1.495000
 Top of WP

PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)

FUEL = volumetric heat production (W/m³) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TC045 = x coord. WP Center Line Outer Pour Can. at 45 de

TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de

HC145 = x coord. WP Center Line side of center Glass at

HCO45 = x coord. WP Edge side of center Glass at 45 deg.

CC045 = x coord. Glass Center Line in Pour Can. at 45 de

SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.

SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.

MI45 = x coord. DCIRD at 45 deg.

MO45 = x coord. DCIRD+IWALL at 45 deg.

DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TC045 = .1094244

PARAMETER TCI45 = .1161419

PARAMETER HC145 = .2205462

PARAMETER HCO45 = .4293549

PARAMETER CC045 = .3249505

PARAMETER SCO45 = .5404767

PARAMETER SCI45 = .5337592

PARAMETER MI45 = .5547253

PARAMETER MO45 = .5688674

PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 20:55:22 NOV 03, 1995 CP= 1.400
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **

** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSW2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **

** Emissivity EMIS **

** Conductivity: KXX (W/m/K) **

** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1
SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1

SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1	21.11000	37.78000	65.56000
	93.33000	121.1100	148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7	176.6700	204.4400	232.2200
	260.0000	287.7800	315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***

SLOC= 13	343.3300	371.1100	398.8900
	426.6700	454.4400	482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***

SLOC= 19	510.0000	537.7800	565.5600
	593.3300	621.1100	648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***

SLOC= 25	676.6700	704.4400	732.2200
	760.0000	787.7800	815.5600

PROPERTY TABLE KXX MAT=	1	NUM. POINTS= 6	
SLOC= 1	13.33000	13.67000	14.19000
	15.06000	15.58000	14.54000

PROPERTY TABLE KXX MAT=	1	NUM. POINTS= 12	
SLOC= 7	15.92000	16.44000	16.96000
	17.83000	18.17000	17.31000

PROPERTY TABLE KXX MAT=	1	NUM. POINTS= 18	
SLOC= 13	18.52000	19.04000	19.38000
	20.25000	20.77000	19.90000

PROPERTY TABLE KXX MAT=	1	NUM. POINTS= 24	
SLOC= 19	21.11000	21.46000	21.98000
	22.67000	23.02000	22.33000

PROPERTY TABLE KXX MAT=	1	NUM. POINTS= 30	
SLOC= 25	23.54000	23.88000	24.23000
	24.92000	25.27000	24.58000

PROPERTY TABLE C MAT=	1	NUM. POINTS= 6	
SLOC= 1	481.6800	486.9200	498.0900
	509.9800	520.2900	499.3800

PROPERTY TABLE C MAT=	1	NUM. POINTS= 12	
SLOC= 7	521.0700	527.3800	536.9200
	543.0200	543.3100	537.3400

PROPERTY TABLE C MAT=	1	NUM. POINTS= 18	
SLOC= 13	546.9100	552.1400	552.2600
	557.2500	565.1100	557.2200

PROPERTY TABLE C MAT=	1	NUM. POINTS= 24	
SLOC= 19	565.0100	564.9100	572.3500
	574.9200	574.6800	572.1400

PROPERTY TABLE C MAT=	1	NUM. POINTS= 30	
SLOC= 25	581.6400	581.3000	583.8600
	585.9600	588.3900	586.3600

PROPERTY TABLE KXX MAT=	3	NUM. POINTS= 6	
SLOC= 1	40.84000	41.36000	41.88000
	42.23000	42.23000	42.23000

PROPERTY TABLE KXX MAT=	3	NUM. POINTS= 12	
SLOC= 7	42.06000	41.88000	41.36000
	40.50000	39.98000	41.02000

PROPERTY TABLE KXX MAT=	3	NUM. POINTS= 18	
SLOC= 13	39.29000	38.77000	38.08000
	36.69000	36.17000	37.56000

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 24	
SLOC= 19	35.48000	34.61000	33.92000	33.23000
	32.36000	31.50000		

PROPERTY TABLE KXX	MAT=	3	NUM. POINTS= 30	
SLOC= 25	30.29000	28.90000	27.35000	26.48000
	26.13000	26.13000		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 6	
SLOC= 1	428.7200	444.9500	460.9400	476.8700
	486.0800	495.6600		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 12	
SLOC= 7	506.0900	517.0700	525.6400	536.9900
	543.6300	550.6200		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 18	
SLOC= 13	562.2100	577.3200	589.1000	600.5700
	611.3500	629.0900		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 24	
SLOC= 19	645.3200	665.1200	682.0700	694.5200
	724.0700	761.9500		

PROPERTY TABLE C	MAT=	3	NUM. POINTS= 30	
SLOC= 25	806.3100	888.6000	1095.040	1638.780
	808.6800	736.9000		

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 6 ***
SLOC= 1	93.33000 121.1100 148.8900
	176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 12 ***
SLOC= 7	260.0000 287.7800 315.5600
	343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 18 ***
SLOC= 13	426.6700 454.4400 482.2200
	510.0000 537.7800 565.5600

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 24 ***
SLOC= 19	593.3300 621.1100 648.8900
	676.6700 704.4400 732.2200

*** PROPERTY TEMPERATURE TABLE	NUM. TEMPS= 27 ***
SLOC= 25	760.0000 787.7800 815.5600

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 6	
SLOC= 1	12.29000	12.63000	13.15000	13.67000
	14.02000	14.54000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 12	
SLOC= 7	14.88000	15.40000	15.75000	16.10000
	16.61000	16.96000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 18	
SLOC= 13	17.31000	17.65000	18.00000	18.52000
	18.86000	19.21000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 24	
SLOC= 19	19.73000	20.08000	20.42000	20.94000
	21.46000	21.98000		

PROPERTY TABLE KXX	MAT=	2	NUM. POINTS= 27	
--------------------	------	---	-----------------	--

SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 93.33000 121.1100 148.8900
176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 260.0000 287.7800 315.5600
343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***

SLOC= 13 426.6700 454.4400 482.2200
510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6

SLOC= 1 460.6900 477.4200 501.0200 504.6500
498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12

SLOC= 7 536.8800 559.8500 576.8300 576.2100
581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17

SLOC= 13 619.5800 636.7600 654.2000 678.2500
696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 1 25.00000 50.00000 94.00000
95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 5 105.0000 114.0000 115.0000
155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***

SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4

SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8

SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11

SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, ~10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1 -13.15000 6.850000 26.85000
76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7 226.8500 276.8500 326.8500
376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***

SLOC= 13 526.8500 626.8500 726.8500

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6
 SLOC= 1 .1875000 .1750000 .1625000 .1422000
 .1219000 .1097000

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12
 SLOC= 7 .9750000E-01 .9060000E-01 .8360000E-01 .7670000E-01
 .6970000E-01 .6620000E-01

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15
 SLOC= 13 .6270000E-01 .5580000E-01 .4880000E-01

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6
 SLOC= 1 .1370000 .1450000 .1520000 .1700000
 .1870000 .2040000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12
 SLOC= 7 .2200000 .2360000 .2520000 .2640000
 .2780000 .2910000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15
 SLOC= 13 .3040000 .3300000 .3540000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6
 SLOC= 1 1.348000 1.254700 1.161400 .9950000
 .8711000 .7740000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12
 SLOC= 7 .6964000 .6329000 .5804000 .5356000
 .4975000 .4643000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15
 SLOC= 13 .4354000 .3868000 .3482000

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6
 SLOC= 1 .2300000E-01 .2500000E-01 .2600000E-01 .3000000E-01
 .3400000E-01 .3700000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12
 SLOC= 7 .4100000E-01 .4400000E-01 .4700000E-01 .5000000E-01
 .5200000E-01 .5500000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15
 SLOC= 13 .5700000E-01 .6200000E-01 .6700000E-01

PROPERTY TABLE C MAT= 8 NUM. POINTS= 6
 SLOC= 1 1006.200 1006.600 1007.000 1009.000
 1014.000 1021.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 12
 SLOC= 7 1030.000 1040.000 1051.000 1063.000
 1075.000 1087.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 15
 SLOC= 13 1099.000 1121.000 1141.000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6
 SLOC= 1 1.303700 1.213500 1.123300 .9625000
 .8425000 .7485000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12
 SLOC= 7 .6739000 .6124000 .5615000 .5214000
 .4812000 .4512000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15
 SLOC= 13 .4211000 .3743000 .3368000

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6

SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
 .3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
 SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
 .5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
 SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
 SLOC= 1 1041.800 1041.400 1041.000 1042.000
 1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
 SLOC= 7 1056.000 1065.000 1075.000 1086.500
 1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
 SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
 SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
 .2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
 SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
 .3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
 SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -73.15000 26.85000 126.8500
 326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
 SLOC= 1 413.0000 401.0000 393.0000 379.0000
 366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
 SLOC= 1 356.0000 385.0000 397.0000 417.0000
 433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
 SLOC= 1 23.00000 50.00000 100.0000
 150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
 SLOC= 1 182.5600 190.1700 199.2200 202.9100
 203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
 SLOC= 1 868.0000 903.0000 946.0000 976.0000
 998.0000

 ** End of Material Property List **

Define new material 15 for low thermal loading
 outer barrier of 70/30 Copper Nickel (C71500)

Density: DENS (kg/m³)
 Emissivity: EMIS
 Conductivity: KXX (W/m/K)
 Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***

SLOC= 1 .000000E+00
 Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1

SLOC= 1 8940.640
 Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1

SLOC= 1 .4000000
 Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1

SLOC= 1 376.7898
 Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***

SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***

SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***

SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2

SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4

SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6

SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8

SLOC= 7 53.13249 58.15152

Read in single drum heat loads
 Calculate the volumetric heat generation
 (Assembly time is in years, FUEL is in seconds)

/INPUT FILE= hanfls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **

** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **

**

** Executable File Name: MATHCAD.EXE **

** Output File Name: hanfls1.dat **

** Execution Date: 04/17/95 **

** Start Age (years): 0.0 **

** Decay Period (years): 10000 **

** Enrichment (kg Pu): N.A. **

** Burnup (MWd/MTHM): N.A. **

** Assembly Type: SR Pour Canis **

** Pu Fract. (kg Pu/KG HM):N.A. **

**

** ASSY(#,1) is the Pour Canister heat in Watts. **

** ASSY(#,0) is the time post emplacement in years. **

PARAMETER ASSY(1,1) =	871.2000 860.1000	868.4000 857.4000	865.6000	862.9000
PARAMETER ASSY(7,1) =	854.8000 844.3000	852.1000 831.8000	849.5000	846.9000
PARAMETER ASSY(13,1) =	819.7000 776.4000	808.2000 766.7000	797.1000	786.6000
PARAMETER ASSY(19,1) =	757.4000 723.7000	748.4000 716.1000	739.9000	731.6000
PARAMETER ASSY(25,1) =	708.9000 682.5000	701.9000 631.9000	695.2000	688.7000
PARAMETER ASSY(31,1) =	596.7000 524.9000	571.3000 514.5000	552.1000	537.1000
PARAMETER ASSY(37,1) =	505.5000 476.4000	497.3000 470.2000	489.9000	483.0000
PARAMETER ASSY(43,1) =	464.3000 442.1000	458.5000 393.8000	452.9000	447.5000
PARAMETER ASSY(49,1) =	351.5000 225.4000	314.1000 202.2000	280.9000	251.5000
PARAMETER ASSY(55,1) =	181.6000 120.0000	163.4000 108.7000	147.2000	132.8000
PARAMETER ASSY(61,1) =	98.57000 68.25000	89.60000 32.95000	81.64000	74.55000
PARAMETER ASSY(67,1) =	21.19000 11.42000	16.60000 10.33000	14.26000	12.69000
PARAMETER ASSY(73,1) =	9.355000 6.318000	8.477000 5.731000	7.684000	6.967000
PARAMETER ASSY(79,1) =	5.199000 3.533000	4.719000 1.390000	4.283000	3.890000
PARAMETER ASSY(85,1) =	.5979000 .1284000	.3034000 .1181000	.1920000	.1478000
PARAMETER ASSY(91,1) =	.1111000 .9000000E-01	.1054000 .8500000E-01	.1002000	.9510000E-01
PARAMETER ASSY(97,1) =	.8000000E-01 .6000000E-01	.7500000E-01	.7000000E-01	.6500000E-01
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000
PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000

PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
 INPUT MATRIX= ASSY(1,0)
 INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
 RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
 FUEL(1) = COPY ASSY(1)
 SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
 VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
 if use CSYS,0, the P. Cans are 2x2,
 if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,45.0,0,0,0,0,

Construct geometry for a single SRP Pour Canister
 (K's 1 - 10)
 (L's 1 - 16)
 (A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	3	2			
LINE NO.= 1	KP1= 3	TAN1=	-.7071	-.7071	.0000
	KP2= 2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	2	6			
LINE NO.= 2	KP1= 2	TAN1=	-.7071	.7071	.0000
	KP2= 6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	4	2			
LINE NO.= 3	KP1= 4	TAN1=	-.7071	.7071	.0000
	KP2= 2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	2	5			
LINE NO.= 4	KP1= 2	TAN1=	-.7071	-.7071	.0000
	KP2= 5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 5	KP1= 6	TAN1=	-.7071
	KP2= 5	TAN2=	-.7071

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 6	KP1= 5	TAN1=	.7071
	KP2= 4	TAN2=	-.7071

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 7	KP1= 4	TAN1=	.7071
	KP2= 3	TAN2=	.7071

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 8	KP1= 3	TAN1=	-.7071
	KP2= 6	TAN2=	.7071

LINE CONNECTS KEYPOINTS	7	3			
LINE NO.= 9	KP1= 7	TAN1=	-.7071	-.7071	.0000
	KP2= 3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	6			
LINE NO.= 10	KP1= 10	TAN1=	.7071	-.7071	.0000
	KP2= 6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	9	5			
LINE NO.= 11	KP1= 9	TAN1=	.7071	.7071	.0000
	KP2= 5	TAN2=	-.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS	8	4			
LINE NO.= 12	KP1= 8	TAN1=	-.7071	.7071	.0000

KP2= 4 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 7 AND 8 ORIENTATION KEYPOINT= 2
RADIUS= .30480
LINE NO.= 13 KP1= 7 TAN1= .7071 -.7071 .0000
KP2= 8 TAN2= .7071 .7071 .0000

ARC BETWEEN KEYPOINTS 8 AND 9 ORIENTATION KEYPOINT= 2
RADIUS= .30480
LINE NO.= 14 KP1= 8 TAN1= -.7071 -.7071 .0000
KP2= 9 TAN2= .7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 9 AND 10 ORIENTATION KEYPOINT= 2
RADIUS= .30480
LINE NO.= 15 KP1= 9 TAN1= -.7071 .7071 .0000
KP2= 10 TAN2= -.7071 -.7071 .0000

ARC BETWEEN KEYPOINTS 10 AND 7 ORIENTATION KEYPOINT= 2
RADIUS= .30480
LINE NO.= 16 KP1= 10 TAN1= .7071 .7071 .0000
KP2= 7 TAN2= -.7071 .7071 .0000

DEFINE AREA BY LIST OF LINES
LINE LIST = 2 4 5
(TRAVERSED IN SAME DIRECTION AS LINE 2)

AREA NUMBER = 1

DEFINE AREA BY LIST OF LINES
LINE LIST = 1 2 8
(TRAVERSED IN SAME DIRECTION AS LINE 1)

AREA NUMBER = 2

DEFINE AREA BY LIST OF LINES
LINE LIST = 1 3 7
(TRAVERSED IN SAME DIRECTION AS LINE 1)

AREA NUMBER = 3

DEFINE AREA BY LIST OF LINES
LINE LIST = 3 4 6
(TRAVERSED IN SAME DIRECTION AS LINE 3)

AREA NUMBER = 4

DEFINE AREA BY LIST OF LINES
LINE LIST = 5 10 15 11
(TRAVERSED IN SAME DIRECTION AS LINE 5)

AREA NUMBER = 5

DEFINE AREA BY LIST OF LINES
LINE LIST = 8 9 16 10
(TRAVERSED IN SAME DIRECTION AS LINE 8)

AREA NUMBER = 6

DEFINE AREA BY LIST OF LINES
LINE LIST = 7 12 13 9
(TRAVERSED IN SAME DIRECTION AS LINE 7)

AREA NUMBER = 7

DEFINE AREA BY LIST OF LINES
LINE LIST = 6 11 14 12
(TRAVERSED IN SAME DIRECTION AS LINE 6)

AREA NUMBER = 8

Interior and WP, Next
 (K's 11 - 19)
 (L's 17 - 34)
 (A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1= 1	TAN1=	-.7071	-.7071	.0000
	KP2= 7	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1= 10	TAN1=	-.9125	.4092	.0000
	KP2= 11	TAN2=	.9125	-.4092	.0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1= 9	TAN1=	-.7071	-.7071	.0000
	KP2= 12	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1= 8	TAN1=	.4092	-.9125	.0000
	KP2= 13	TAN2=	-.4092	.9125	.0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1= 1	TAN1=	.0000	-1.0000	.0000
	KP2= 13	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1= 1	TAN1=	-1.0000	.0000	.0000
	KP2= 11	TAN2=	1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS	11 AND 12	ORIENTATION KEYPOINT=	1
RADIUS=	.78450		
LINE NO.= 23	KP1= 11	TAN1=	.0000 -1.0000 .0000
	KP2= 12	TAN2=	-.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	12 AND 13	ORIENTATION KEYPOINT=	1
RADIUS=	.78450		
LINE NO.= 24	KP1= 12	TAN1=	.7071 -.7071 .0000
	KP2= 13	TAN2=	-1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1= 11	TAN1=	-1.0000 .0000 .0000		
	KP2= 14	TAN2=	1.0000 .0000 .0000		

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1= 12	TAN1=	-.7071 -.7071 .0000		
	KP2= 15	TAN2=	.7071 .7071 .0000		

LINE CONNECTS KEYPOINTS	16	13			
LINE NO.= 27	KP1= 16	TAN1=	.0000 1.0000 .0000		
	KP2= 13	TAN2=	.0000 -1.0000 .0000		

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
 KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
 RADIUS= .80450
 LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
 KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17
 LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
 KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18
 LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
 KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16
 LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
 KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
 KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
 RADIUS= .85450
 LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
 KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES
 LINE LIST = 22 18 16 17
 (TRAVERSED IN SAME DIRECTION AS LINE 22)
 AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 19 15 18
 (TRAVERSED IN SAME DIRECTION AS LINE 23)
 AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 20 14 19
 (TRAVERSED IN SAME DIRECTION AS LINE 24)
 AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES
 LINE LIST = 21 17 13 20
 (TRAVERSED IN SAME DIRECTION AS LINE 21)
 AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES
 LINE LIST = 23 25 28 26
 (TRAVERSED IN SAME DIRECTION AS LINE 23)
 AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES
 LINE LIST = 24 26 29 27
 (TRAVERSED IN SAME DIRECTION AS LINE 24)
 AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas

glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.900 TIME= 20:55:24
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.920 TIME= 20:55:24
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.920 TIME= 20:55:24
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 2.980 TIME= 20:55:24
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.000 TIME= 20:55:24
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.000 TIME= 20:55:24
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***

92 93 94 95 96

NUMBER OF AREAS MESHD = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHD = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHD = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces

(K's 20 - 31)

(L's 35 - 46)

Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 20
 LINE NO.= 35 KP1= 1 TAN1= .0000 .0000 1.0000
 KP2= 20 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 20 21
 LINE NO.= 36 KP1= 20 TAN1= .0000 .0000 1.0000
 KP2= 21 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 21 22
 LINE NO.= 37 KP1= 21 TAN1= .0000 .0000 1.0000
 KP2= 22 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 22 23
 LINE NO.= 38 KP1= 22 TAN1= .0000 .0000 1.0000
 KP2= 23 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 23 24
 LINE NO.= 39 KP1= 23 TAN1= .0000 .0000 1.0000
 KP2= 24 TAN2= .0000 .0000 -1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
KEYPOINT	26	X,Y,Z=	.000000E+00	.000000E+00	1.21460	IN CSYS= 0

KEYPOINT 27 X,Y,Z= .000000E+00 .000000E+00 1.23460 IN CSYS= 0
 KEYPOINT 28 X,Y,Z= .000000E+00 .000000E+00 1.50500 IN CSYS= 0
 KEYPOINT 29 X,Y,Z= .000000E+00 .000000E+00 1.53000 IN CSYS= 0
 KEYPOINT 30 X,Y,Z= .000000E+00 .000000E+00 1.56000 IN CSYS= 0
 KEYPOINT 31 X,Y,Z= .000000E+00 .000000E+00 1.61500 IN CSYS= 0

LINE CONNECTS KEYPOINTS 1 25
 LINE NO.= 40 KP1= 1 TAN1= .0000 .0000 -1.0000
 KP2= 25 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 25 26
 LINE NO.= 41 KP1= 25 TAN1= .0000 .0000 -1.0000
 KP2= 26 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 26 27
 LINE NO.= 42 KP1= 26 TAN1= .0000 .0000 -1.0000
 KP2= 27 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 27 28
 LINE NO.= 43 KP1= 27 TAN1= .0000 .0000 -1.0000
 KP2= 28 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 28 29
 LINE NO.= 44 KP1= 28 TAN1= .0000 .0000 -1.0000
 KP2= 29 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 29 30
 LINE NO.= 45 KP1= 29 TAN1= .0000 .0000 -1.0000
 KP2= 30 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 30 31
 LINE NO.= 46 KP1= 30 TAN1= .0000 .0000 -1.0000
 KP2= 31 TAN2= .0000 .0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
 GLASS

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 35 TO 35 STEP 1
 1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 40 TO 40 STEP 1
 1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 41 TO 41 STEP 1
 1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000
 Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 10.8000 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -10.8000 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000

KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000

KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000

KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000

KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000

KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000

KP2= 39 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 39 35
 LINE NO.= 53 KP1= 39 TAN1= -1.0000 .0000 .0000
 KP2= 35 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 49 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 50 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 51 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 52 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 53 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

Back Point
 (K's 40 - 44)
 (L's 54 - 58)

KEYPOINT 40 X,Y,Z= 1.73494 -1.61670 -10.8000 IN CSYS= 0
 KEYPOINT 41 X,Y,Z= 2.50000 .183300 -10.8000 IN CSYS= 0
 KEYPOINT 42 X,Y,Z= .000000E+00 2.68330 -10.8000 IN CSYS= 0
 KEYPOINT 43 X,Y,Z= -2.50000 .183300 -10.8000 IN CSYS= 0
 KEYPOINT 44 X,Y,Z= -1.73494 -1.61670 -10.8000 IN CSYS= 0

ARC BETWEEN KEYPOINTS 40 AND 41 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 54 KP1= 40 TAN1= -.7200 -.6940 .0000
 KP2= 41 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 41 AND 42 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 55 KP1= 41 TAN1= .0000 -1.0000 .0000
 KP2= 42 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 42 AND 43 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 56 KP1= 42 TAN1= 1.0000 .0000 .0000
 KP2= 43 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 43 AND 44 ORIENTATION KEYPOINT= 34
 RADIUS= 2.5000
 LINE NO.= 57 KP1= 43 TAN1= .0000 1.0000 .0000
 KP2= 44 TAN2= .7200 -.6940 .0000

LINE CONNECTS KEYPOINTS 44 40
 LINE NO.= 58 KP1= 44 TAN1= -1.0000 .0000 .0000
 KP2= 40 TAN2= 1.0000 .0000 .0000
 Set element spacing for meshing

SET DIVISIONS ON LINE 54 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 55 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 56 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 57 (IF SELECTED AND UNMESHED)
 TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000
Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT	45	X,Y,Z=	1.73494	-1.61670	10.8000	IN CSYS= 0
KEYPOINT	46	X,Y,Z=	2.50000	.183300	10.8000	IN CSYS= 0
KEYPOINT	47	X,Y,Z=	.000000E+00	2.68330	10.8000	IN CSYS= 0
KEYPOINT	48	X,Y,Z=	-2.50000	.183300	10.8000	IN CSYS= 0
KEYPOINT	49	X,Y,Z=	-1.73494	-1.61670	10.8000	IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.=	59	KP1=	45	TAN1=	-.7200	-.6940	.0000
		KP2=	46	TAN2=	.0000	1.0000	.0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.=	60	KP1=	46	TAN1=	.0000	-1.0000	.0000
		KP2=	47	TAN2=	-1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.=	61	KP1=	47	TAN1=	1.0000	.0000	.0000
		KP2=	48	TAN2=	.0000	-1.0000	.0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.=	62	KP1=	48	TAN1=	.0000	1.0000	.0000
		KP2=	49	TAN2=	.7200	-.6940	.0000

LINE CONNECTS KEYPOINTS 49 45

LINE NO.=	63	KP1=	49	TAN1=	-1.0000	.0000	.0000
		KP2=	45	TAN2=	1.0000	.0000	.0000

Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40

LINE NO.=	64	KP1=	35	TAN1=	.0000	.0000	1.0000
		KP2=	40	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS 36 41

LINE NO.=	65	KP1=	36	TAN1=	.0000	.0000	1.0000
		KP2=	41	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.=	66	KP1=	37	TAN1=	.0000	.0000	1.0000
		KP2=	42	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (A's 17 - 26)

DEFINE AREA BY LIST OF LINES

*** WARNING *** CP= 3.780 TIME= 20:55:25
 Lines 61, 72, 51, and 71 do not lie on a common
 coordinate value in the currently active coordinate system
 (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES
 LINE LIST = 62 73 52 72
 (TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.820 TIME= 20:55:25
 Lines 62, 73, 52, and 72 do not lie on a common
 coordinate value in the currently active coordinate system
 (CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES
 LINE LIST = 53 64 58 68
 (TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES
 LINE LIST = 63 69 53 73
 (TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
 4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
 IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
 MAXIMUM NODE NUMBER = 430
 MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
 IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 481
 MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
 KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
 10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
 TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
 (K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50			
LINE NO.= 74	KP1= 27	TAN1=	-1.0000	.0000	.0000
	KP2= 50	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	27	51			
LINE NO.= 75	KP1= 27	TAN1=	.0000	-1.0000	.0000
	KP2= 51	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	50	52			
LINE NO.= 76	KP1= 50	TAN1=	-1.0000	.0000	.0000
	KP2= 52	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	51	53			
LINE NO.= 77	KP1= 51	TAN1=	.0000	-1.0000	.0000
	KP2= 53	TAN2=	.0000	1.0000	.0000
LINE CONNECTS KEYPOINTS	52	54			
LINE NO.= 78	KP1= 52	TAN1=	-1.0000	.0000	.0000
	KP2= 54	TAN2=	1.0000	.0000	.0000
LINE CONNECTS KEYPOINTS	53	55			
LINE NO.= 79	KP1= 53	TAN1=	.0000	-1.0000	.0000
	KP2= 55	TAN2=	.0000	1.0000	.0000

(L's 80 - 82)

ARC BETWEEN KEYPOINTS	50	AND	51	ORIENTATION KEYPOINT=	27
RADIUS=	.78450				
LINE NO.= 80	KP1= 50	TAN1=	.0000	-1.0000	.0000
	KP2= 51	TAN2=	-1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
 RADIUS= .80450
 LINE NO.= 81 KP1= 52 TAN1= .0000 -1.0000 .0000
 KP2= 53 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
 RADIUS= .85450
 LINE NO.= 82 KP1= 54 TAN1= .0000 -1.0000 .0000
 KP2= 55 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 74 TO 75 STEP 1

2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 80 TO 82 STEP 1

5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 76 TO 79 STEP 1

4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
 IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 1 TO 82 STEP 1

82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
 IN RANGE 1 TO 55 STEP 1

55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
 (A's 27 - 29)

DEFINE AREA BY LIST OF LINES
 LINE LIST = 74 75 80
 (TRAVERSED IN SAME DIRECTION AS LINE 74)

AREA NUMBER = 27

DEFINE AREA BY LIST OF LINES
 LINE LIST = 80 76 81 77
 (TRAVERSED IN SAME DIRECTION AS LINE 80)

AREA NUMBER = 28

DEFINE AREA BY LIST OF LINES
 LINE LIST = 81 78 82 79
 (TRAVERSED IN SAME DIRECTION AS LINE 81)

AREA NUMBER = 29

Construct geometry for WP Bottom end
 (K's 56 - 61)

KEYPOINT 56 X,Y,Z= .784500 .000000E+00 -1.51000 IN CSYS= 0

KEYPOINT 57 X,Y,Z= .000000E+00 .784500 -1.51000 IN CSYS= 0

KEYPOINT 58 X,Y,Z= .804500 .000000E+00 -1.51000 IN CSYS= 0

KEYPOINT 59 X,Y,Z= .000000E+00 .804500 -1.51000 IN CSYS= 0

KEYPOINT 60 X,Y,Z= .854500 .000000E+00 -1.51000 IN CSYS= 0

KEYPOINT 61 X,Y,Z= .000000E+00 .854500 -1.51000 IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS 21 56
 LINE NO.= 83 KP1= 21 TAN1= -1.0000 .0000 .0000
 KP2= 56 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 21 57
 LINE NO.= 84 KP1= 21 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 56 58
 LINE NO.= 85 KP1= 56 TAN1= -1.0000 .0000 .0000
 KP2= 58 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 57 59
 LINE NO.= 86 KP1= 57 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= .0000 1.0000 .0000

LINE CONNECTS KEYPOINTS 58 60
 LINE NO.= 87 KP1= 58 TAN1= -1.0000 .0000 .0000
 KP2= 60 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 59 61
 LINE NO.= 88 KP1= 59 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= .0000 1.0000 .0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS 56 AND 57 ORIENTATION KEYPOINT= 21
 RADIUS= .78450
 LINE NO.= 89 KP1= 56 TAN1= .0000 -1.0000 .0000
 KP2= 57 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 58 AND 59 ORIENTATION KEYPOINT= 21
 RADIUS= .80450
 LINE NO.= 90 KP1= 58 TAN1= .0000 -1.0000 .0000
 KP2= 59 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 60 AND 61 ORIENTATION KEYPOINT= 21
 RADIUS= .85450
 LINE NO.= 91 KP1= 60 TAN1= .0000 -1.0000 .0000
 KP2= 61 TAN2= -1.0000 .0000 .0000

SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
 IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
 TO NDIV = 8, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=

IN RANGE 85 TO 88 STEP 1

4 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 29 STEP 1

29 AREAS (OF 29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 91 STEP 1

91 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 61 STEP 1

61 KEYPOINTS (OF 61 DEFINED) SELECTED BY KSEL COMMAND.
(A's 30 - 32)

DEFINE AREA BY LIST OF LINES
LINE LIST = 83 84 89
(TRAVERSED IN SAME DIRECTION AS LINE 83)

AREA NUMBER = 30

DEFINE AREA BY LIST OF LINES
LINE LIST = 89 85 90 86
(TRAVERSED IN SAME DIRECTION AS LINE 89)

AREA NUMBER = 31

DEFINE AREA BY LIST OF LINES
LINE LIST = 90 87 91 88
(TRAVERSED IN SAME DIRECTION AS LINE 90)

AREA NUMBER = 32

Mesh areas
Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 27 TO 32 IN STEPS OF 1

NUMBER OF AREAS MESHED = 6
MAXIMUM NODE NUMBER = 675
MAXIMUM ELEMENT NUMBER = 928

Extrude 2-D WP Interior into 3-D Space
(V's 1 - 32)

Bottom WP Area

DRAG AREAS
1, 2, 3, 4,
ALONG LINES
35, 36,

DRAG AREAS
5, 6, 7, 8,
ALONG LINES
35, 36,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 35, 36,

DRAG AREAS
 13, 14,
 ALONG LINES
 35, 36,

DRAG AREAS
 15, 16,
 ALONG LINES
 35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.660 TIME= 20:55:30
 Unmeshed line 178 is merged into meshed line 83.
 LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.660 TIME= 20:55:30
 Unmeshed line 196 is merged into meshed line 84.
 LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.660 TIME= 20:55:30
 Unmeshed line 218 is merged into meshed line 85.
 LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.670 TIME= 20:55:30
 Unmeshed line 221 is merged into meshed line 86.
 LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 8.670 TIME= 20:55:30

Unmeshed line 244 is merged into meshed line 87.
 LINE 88 USED FOR LINE(S) 247

*** WARNING *** CP= 8.670 TIME= 20:55:30

Unmeshed line 247 is merged into meshed line 88.

LINE	94	USED FOR LINE(S)	119
LINE	95	USED FOR LINE(S)	118
LINE	96	USED FOR LINE(S)	120
LINE	99	USED FOR LINE(S)	127
LINE	100	USED FOR LINE(S)	126
LINE	102	USED FOR LINE(S)	132
LINE	103	USED FOR LINE(S)	131
LINE	104	USED FOR LINE(S)	136
LINE	107	USED FOR LINE(S)	139
LINE	108	USED FOR LINE(S)	138
LINE	109	USED FOR LINE(S)	140
LINE	112	USED FOR LINE(S)	147
LINE	113	USED FOR LINE(S)	146
LINE	115	USED FOR LINE(S)	152
LINE	116	USED FOR LINE(S)	151
LINE	117	USED FOR LINE(S)	156
LINE	122	USED FOR LINE(S)	169
LINE	123	USED FOR LINE(S)	170
LINE	124	USED FOR LINE(S)	162
LINE	128	USED FOR LINE(S)	163
LINE	129	USED FOR LINE(S)	164
LINE	133	USED FOR LINE(S)	177
LINE	134	USED FOR LINE(S)	174
LINE	137	USED FOR LINE(S)	175
LINE	142	USED FOR LINE(S)	189
LINE	143	USED FOR LINE(S)	190
LINE	144	USED FOR LINE(S)	182
LINE	148	USED FOR LINE(S)	183
LINE	149	USED FOR LINE(S)	184
LINE	153	USED FOR LINE(S)	197
LINE	154	USED FOR LINE(S)	194
LINE	157	USED FOR LINE(S)	195
LINE	160	USED FOR LINE(S)	199
LINE	166	USED FOR LINE(S)	198
LINE	167	USED FOR LINE(S)	200
LINE	171	USED FOR LINE(S)	206
LINE	172	USED FOR LINE(S)	207
LINE	180	USED FOR LINE(S)	212
LINE	186	USED FOR LINE(S)	211
LINE	187	USED FOR LINE(S)	213
LINE	191	USED FOR LINE(S)	219
LINE	192	USED FOR LINE(S)	220
LINE	202	USED FOR LINE(S)	226
LINE	203	USED FOR LINE(S)	224
LINE	204	USED FOR LINE(S)	225
LINE	209	USED FOR LINE(S)	233
LINE	210	USED FOR LINE(S)	232
LINE	215	USED FOR LINE(S)	239
LINE	216	USED FOR LINE(S)	237
LINE	217	USED FOR LINE(S)	238
LINE	222	USED FOR LINE(S)	246
LINE	223	USED FOR LINE(S)	245
AREA	34	USED FOR AREA(S)	57
AREA	38	USED FOR AREA(S)	62
AREA	41	USED FOR AREA(S)	66
AREA	43	USED FOR AREA(S)	70
AREA	46	USED FOR AREA(S)	73
AREA	50	USED FOR AREA(S)	78
AREA	53	USED FOR AREA(S)	82
AREA	55	USED FOR AREA(S)	86
AREA	59	USED FOR AREA(S)	96
AREA	63	USED FOR AREA(S)	91
AREA	67	USED FOR AREA(S)	103
AREA	71	USED FOR AREA(S)	100
AREA	75	USED FOR AREA(S)	112

AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153
 (V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	25 USED FOR KEYPOINT(S)	131	
KEYPOINT	26 USED FOR KEYPOINT(S)	139	
KEYPOINT	27 USED FOR KEYPOINT(S)	147	
KEYPOINT	50 USED FOR KEYPOINT(S)	148	167
KEYPOINT	51 USED FOR KEYPOINT(S)	153	171
KEYPOINT	52 USED FOR KEYPOINT(S)	170	185
KEYPOINT	53 USED FOR KEYPOINT(S)	172	189
KEYPOINT	54 USED FOR KEYPOINT(S)	188	
KEYPOINT	55 USED FOR KEYPOINT(S)	190	
KEYPOINT	73 USED FOR KEYPOINT(S)	98	
KEYPOINT	76 USED FOR KEYPOINT(S)	99	
KEYPOINT	78 USED FOR KEYPOINT(S)	103	
KEYPOINT	80 USED FOR KEYPOINT(S)	105	
KEYPOINT	84 USED FOR KEYPOINT(S)	110	
KEYPOINT	86 USED FOR KEYPOINT(S)	111	
KEYPOINT	88 USED FOR KEYPOINT(S)	115	
KEYPOINT	90 USED FOR KEYPOINT(S)	117	
KEYPOINT	93 USED FOR KEYPOINT(S)	122	
KEYPOINT	95 USED FOR KEYPOINT(S)	123	
KEYPOINT	96 USED FOR KEYPOINT(S)	127	
KEYPOINT	97 USED FOR KEYPOINT(S)	129	
KEYPOINT	101 USED FOR KEYPOINT(S)	136	
KEYPOINT	102 USED FOR KEYPOINT(S)	133	
KEYPOINT	104 USED FOR KEYPOINT(S)	134	
KEYPOINT	108 USED FOR KEYPOINT(S)	138	
KEYPOINT	113 USED FOR KEYPOINT(S)	144	
KEYPOINT	114 USED FOR KEYPOINT(S)	141	
KEYPOINT	116 USED FOR KEYPOINT(S)	142	
KEYPOINT	120 USED FOR KEYPOINT(S)	146	
KEYPOINT	125 USED FOR KEYPOINT(S)	152	

KEYPOINT 126 USED FOR KEYPOINT(S) 149
 KEYPOINT 128 USED FOR KEYPOINT(S) 150
 KEYPOINT 130 USED FOR KEYPOINT(S) 154
 KEYPOINT 132 USED FOR KEYPOINT(S) 155
 KEYPOINT 135 USED FOR KEYPOINT(S) 156
 KEYPOINT 137 USED FOR KEYPOINT(S) 159
 KEYPOINT 140 USED FOR KEYPOINT(S) 161
 KEYPOINT 143 USED FOR KEYPOINT(S) 162
 KEYPOINT 145 USED FOR KEYPOINT(S) 165
 KEYPOINT 151 USED FOR KEYPOINT(S) 168
 KEYPOINT 157 USED FOR KEYPOINT(S) 174
 KEYPOINT 158 USED FOR KEYPOINT(S) 173
 KEYPOINT 160 USED FOR KEYPOINT(S) 177
 KEYPOINT 163 USED FOR KEYPOINT(S) 180
 KEYPOINT 164 USED FOR KEYPOINT(S) 179
 KEYPOINT 166 USED FOR KEYPOINT(S) 183
 KEYPOINT 169 USED FOR KEYPOINT(S) 186
 LINE 40 USED FOR LINE(S) 290
 LINE 41 USED FOR LINE(S) 310
 LINE 42 USED FOR LINE(S) 330
 LINE 74 USED FOR LINE(S) 329

*** WARNING *** CP= 12.720 TIME= 20:55:34
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.720 TIME= 20:55:34
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.730 TIME= 20:55:34
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.730 TIME= 20:55:34
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.730 TIME= 20:55:34
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.730 TIME= 20:55:34
 Unmeshed line 424 is merged into meshed line 79.
 LINE 120 USED FOR LINE(S) 207
 LINE 126 USED FOR LINE(S) 206
 LINE 127 USED FOR LINE(S) 211
 LINE 136 USED FOR LINE(S) 224
 LINE 138 USED FOR LINE(S) 221
 LINE 140 USED FOR LINE(S) 237
 LINE 146 USED FOR LINE(S) 233
 LINE 147 USED FOR LINE(S) 245
 LINE 156 USED FOR LINE(S) 250
 LINE 159 USED FOR LINE(S) 247
 LINE 162 USED FOR LINE(S) 251
 LINE 169 USED FOR LINE(S) 258
 LINE 170 USED FOR LINE(S) 257
 LINE 175 USED FOR LINE(S) 263
 LINE 177 USED FOR LINE(S) 262
 LINE 178 USED FOR LINE(S) 267
 LINE 183 USED FOR LINE(S) 270
 LINE 184 USED FOR LINE(S) 269
 LINE 189 USED FOR LINE(S) 271
 LINE 195 USED FOR LINE(S) 278
 LINE 196 USED FOR LINE(S) 277
 LINE 198 USED FOR LINE(S) 283
 LINE 199 USED FOR LINE(S) 282
 LINE 200 USED FOR LINE(S) 287
 LINE 213 USED FOR LINE(S) 300
 LINE 218 USED FOR LINE(S) 301

LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231
AREA	183	USED FOR AREA(S)	228
AREA	187	USED FOR AREA(S)	240
AREA	191	USED FOR AREA(S)	235

AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315

Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)

Bottom WP Area

DRAG AREAS

30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310

(V's 90 - 101)

Top WP Area

DRAG AREAS

27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846
 MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS

IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 960
 MAXIMUM ELEMENT NUMBER = 1168
 SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1017
 MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
 IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.450 TIME= 20:55:38
 Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.450 TIME= 20:55:38
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.490 TIME= 20:55:38
 Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.490 TIME= 20:55:38
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.590 TIME= 20:55:38
 Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.590 TIME= 20:55:38
 Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.690 TIME= 20:55:39
 Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.690 TIME= 20:55:39
 Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
 MAXIMUM NODE NUMBER = 1081
 MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
 IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 1195
 MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
 IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.190 TIME= 20:55:40
 Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.190 TIME= 20:55:40
 Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.220 TIME= 20:55:40
 Meshing of area 172 produced 2 poorly shaped faces.


```

*** NOTE ***                      CP=    19.220    TIME= 20:55:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING ***                   CP=    19.310    TIME= 20:55:40
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.310    TIME= 20:55:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING ***                   CP=    19.390    TIME= 20:55:40
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.390    TIME= 20:55:40
Worst aspect ratio is 34.7315789 : 1.

*** WARNING ***                   CP=    19.540    TIME= 20:55:40
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.540    TIME= 20:55:40
Worst aspect ratio is 29.1947368 : 1.

*** WARNING ***                   CP=    19.580    TIME= 20:55:40
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.580    TIME= 20:55:40
Worst aspect ratio is 29.1947368 : 1.

*** WARNING ***                   CP=    19.680    TIME= 20:55:41
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.680    TIME= 20:55:41
Worst aspect ratio is 29.1947368 : 1.

*** WARNING ***                   CP=    19.780    TIME= 20:55:41
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE ***                      CP=    19.780    TIME= 20:55:41
Worst aspect ratio is 29.1947368 : 1.

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NUMBER OF VOLUMES MESHED   =    12
MAXIMUM NODE NUMBER       =   1291
MAXIMUM ELEMENT NUMBER    =   1408
                          In. Bar. Material for WP

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FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

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*** WARNING ***                   CP=    20.410    TIME= 20:55:41
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE ***                      CP=    20.410    TIME= 20:55:41
Worst aspect ratio is 49.8333333 : 1.

*** WARNING ***                   CP=    20.460    TIME= 20:55:41
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE ***                      CP=    20.460    TIME= 20:55:41
Worst aspect ratio is 49.8333333 : 1.

*** WARNING ***                   CP=    20.580    TIME= 20:55:41
Meshing of area 127 produced 6 poorly shaped faces.

```

*** NOTE *** CP= 20.580 TIME= 20:55:41
Worst aspect ratio is 49.833333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.230 TIME= 20:55:42
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.230 TIME= 20:55:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.280 TIME= 20:55:42
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.280 TIME= 20:55:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.380 TIME= 20:55:42
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.380 TIME= 20:55:42
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.520 TIME= 20:55:42
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.520 TIME= 20:55:42
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.560 TIME= 20:55:42
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.570 TIME= 20:55:42
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.670 TIME= 20:55:43
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.670 TIME= 20:55:43
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888
Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2528

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1

He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 28.460 TIME= 20:55:49
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.470 TIME= 20:55:49
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.480 TIME= 20:55:49
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.480 TIME= 20:55:49
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.490 TIME= 20:55:49
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.490 TIME= 20:55:49
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.490 TIME= 20:55:49
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.500 TIME= 20:55:49
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.510 TIME= 20:55:49
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.520 TIME= 20:55:49
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.520 TIME= 20:55:49
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.530 TIME= 20:55:49
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.550 TIME= 20:55:49
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.560 TIME= 20:55:49
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.590 TIME= 20:55:49
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only
elements are deleted.

*** NOTE *** CP= 28.600 TIME= 20:55:49

Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373
NODE 557	USED FOR NODES	1507
NODE 654	USED FOR NODES	1378
NODE 549	USED FOR NODES	1506

NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.040 TIME= 20:55:51
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

(V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE	3488	USED FOR NODES	5848
NODE	4099	USED FOR NODES	6471
NODE	4100	USED FOR NODES	6472
NODE	4539	USED FOR NODES	6911
NODE	4540	USED FOR NODES	6912
NODE	4037	USED FOR NODES	6397
NODE	5238	USED FOR NODES	7610
NODE	5239	USED FOR NODES	7611
NODE	4011	USED FOR NODES	6363
NODE	4012	USED FOR NODES	6364
NODE	3446	USED FOR NODES	5782
NODE	4920	USED FOR NODES	7292
NODE	4656	USED FOR NODES	7030
NODE	4657	USED FOR NODES	7031
NODE	4974	USED FOR NODES	7346
NODE	4345	USED FOR NODES	6717
NODE	4346	USED FOR NODES	6718
NODE	3448	USED FOR NODES	5786
NODE	3449	USED FOR NODES	5787
NODE	3450	USED FOR NODES	5788
NODE	4658	USED FOR NODES	7032
NODE	3975	USED FOR NODES	6327
NODE	3976	USED FOR NODES	6328
NODE	4921	USED FOR NODES	7293
NODE	4975	USED FOR NODES	7347
NODE	4660	USED FOR NODES	7055
NODE	3453	USED FOR NODES	5801
NODE	3452	USED FOR NODES	5800
NODE	4102	USED FOR NODES	6488
NODE	4014	USED FOR NODES	6372
NODE	4923	USED FOR NODES	7309
NODE	3978	USED FOR NODES	6336
NODE	4348	USED FOR NODES	6734
NODE	4541	USED FOR NODES	6927
NODE	4013	USED FOR NODES	6371
NODE	5240	USED FOR NODES	7626
NODE	3447	USED FOR NODES	5798
NODE	4038	USED FOR NODES	6401
NODE	4976	USED FOR NODES	7362
NODE	4659	USED FOR NODES	7054
NODE	4347	USED FOR NODES	6733
NODE	3489	USED FOR NODES	5852
NODE	3451	USED FOR NODES	5799
NODE	3977	USED FOR NODES	6335
NODE	4977	USED FOR NODES	7363
NODE	4101	USED FOR NODES	6487
NODE	4922	USED FOR NODES	7308
NODE	4661	USED FOR NODES	7056
NODE	5241	USED FOR NODES	7627
NODE	4542	USED FOR NODES	6928
NODE	3350	USED FOR NODES	5672
NODE	4603	USED FOR NODES	6977
NODE	5195	USED FOR NODES	7567
NODE	3398	USED FOR NODES	5754
NODE	4064	USED FOR NODES	6436
NODE	4884	USED FOR NODES	7256
NODE	3947	USED FOR NODES	6303
NODE	4885	USED FOR NODES	7257
NODE	3347	USED FOR NODES	5667

NODE	3858	USED	FOR	NODES	6202
NODE	4503	USED	FOR	NODES	6875
NODE	4504	USED	FOR	NODES	6876
NODE	4063	USED	FOR	NODES	6435
NODE	4958	USED	FOR	NODES	7324
NODE	4966	USED	FOR	NODES	7325
NODE	3859	USED	FOR	NODES	6203
NODE	4602	USED	FOR	NODES	6976
NODE	4309	USED	FOR	NODES	6681
NODE	4310	USED	FOR	NODES	6682
NODE	3349	USED	FOR	NODES	5671
NODE	5194	USED	FOR	NODES	7566
NODE	3912	USED	FOR	NODES	6256
NODE	3913	USED	FOR	NODES	6257
NODE	3351	USED	FOR	NODES	5673
NODE	4604	USED	FOR	NODES	6978
NODE	3354	USED	FOR	NODES	5686
NODE	4606	USED	FOR	NODES	7001
NODE	3861	USED	FOR	NODES	6211
NODE	4312	USED	FOR	NODES	6698
NODE	4887	USED	FOR	NODES	7273
NODE	4066	USED	FOR	NODES	6452
NODE	3353	USED	FOR	NODES	5685
NODE	5197	USED	FOR	NODES	7584
NODE	5196	USED	FOR	NODES	7583
NODE	4505	USED	FOR	NODES	6891
NODE	3860	USED	FOR	NODES	6210
NODE	3948	USED	FOR	NODES	6307
NODE	4886	USED	FOR	NODES	7272
NODE	3399	USED	FOR	NODES	5758
NODE	4506	USED	FOR	NODES	6892
NODE	3348	USED	FOR	NODES	5683
NODE	4311	USED	FOR	NODES	6697
NODE	4605	USED	FOR	NODES	7000
NODE	4065	USED	FOR	NODES	6451
NODE	4607	USED	FOR	NODES	7002
NODE	3914	USED	FOR	NODES	6264
NODE	3352	USED	FOR	NODES	5684
NODE	5193	USED	FOR	NODES	7582
NODE	3915	USED	FOR	NODES	6265
NODE	4045	USED	FOR	NODES	6415
NODE	3943	USED	FOR	NODES	6297
NODE	4736	USED	FOR	NODES	7086
NODE	4737	USED	FOR	NODES	7087
NODE	4400	USED	FOR	NODES	6750
NODE	4575	USED	FOR	NODES	6946
NODE	4576	USED	FOR	NODES	6954
NODE	4577	USED	FOR	NODES	6955
NODE	4161	USED	FOR	NODES	6511
NODE	4399	USED	FOR	NODES	6749
NODE	4046	USED	FOR	NODES	6423
NODE	3331	USED	FOR	NODES	5639
NODE	3394	USED	FOR	NODES	5748
NODE	4162	USED	FOR	NODES	6512
NODE	3850	USED	FOR	NODES	6190
NODE	3335	USED	FOR	NODES	5647
NODE	3851	USED	FOR	NODES	6194
NODE	3336	USED	FOR	NODES	5651
NODE	5037	USED	FOR	NODES	7379
NODE	3337	USED	FOR	NODES	5652
NODE	3904	USED	FOR	NODES	6244
NODE	5045	USED	FOR	NODES	7387
NODE	5046	USED	FOR	NODES	7388
NODE	3905	USED	FOR	NODES	6248
NODE	5075	USED	FOR	NODES	7404
NODE	4752	USED	FOR	NODES	7085
NODE	4759	USED	FOR	NODES	7095
NODE	4184	USED	FOR	NODES	6520
NODE	4415	USED	FOR	NODES	6758
NODE	5068	USED	FOR	NODES	7396

NODE	4177	USED	FOR	NODES	6510
NODE	4422	USED	FOR	NODES	6766
NODE	5061	USED	FOR	NODES	7386
NODE	4766	USED	FOR	NODES	7103
NODE	4191	USED	FOR	NODES	6528
NODE	5069	USED	FOR	NODES	7395
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NODE	2666	USED FOR NODES	9813
NODE	2311	USED FOR NODES	9153
NODE	2648	USED FOR NODES	9799
NODE	1582	USED FOR NODES	8915
NODE	1883	USED FOR NODES	9497
NODE	1592	USED FOR NODES	8922
NODE	2658	USED FOR NODES	9806
NODE	1873	USED FOR NODES	9490
NODE	1600	USED FOR NODES	8929
NODE	1891	USED FOR NODES	9504
NODE	2667	USED FOR NODES	9812
NODE	1884	USED FOR NODES	9496
NODE	2649	USED FOR NODES	9798
NODE	2312	USED FOR NODES	9152
NODE	2320	USED FOR NODES	9159
NODE	1892	USED FOR NODES	9503
NODE	1601	USED FOR NODES	8928
NODE	1593	USED FOR NODES	8921
NODE	1583	USED FOR NODES	8914
NODE	2659	USED FOR NODES	9805
NODE	1874	USED FOR NODES	9489
NODE	1893	USED FOR NODES	9502
NODE	1602	USED FOR NODES	8927
NODE	2668	USED FOR NODES	9811
NODE	2313	USED FOR NODES	9151
NODE	1885	USED FOR NODES	9495
NODE	1584	USED FOR NODES	8913
NODE	1875	USED FOR NODES	9488
NODE	1594	USED FOR NODES	8920
NODE	2321	USED FOR NODES	9158
NODE	2650	USED FOR NODES	9797
NODE	2660	USED FOR NODES	9804
NODE	1295	USED FOR NODES	8071

NODE	1450	USED FOR NODES	8640
NODE	1454	USED FOR NODES	8641
NODE	1400	USED FOR NODES	8587
NODE	1396	USED FOR NODES	8586
NODE	1586	USED FOR NODES	8898
NODE	1299	USED FOR NODES	8072
NODE	1877	USED FOR NODES	9473
NODE	1300	USED FOR NODES	8073
NODE	483	USED FOR NODES	8679
NODE	2651	USED FOR NODES	9781
NODE	1876	USED FOR NODES	9472
NODE	2643	USED FOR NODES	9773
NODE	580	USED FOR NODES	8130
NODE	1525	USED FOR NODES	8781
NODE	2652	USED FOR NODES	9782
NODE	75	USED FOR NODES	8067
NODE	1790	USED FOR NODES	9311
NODE	1798	USED FOR NODES	9312
NODE	1799	USED FOR NODES	9313
NODE	2304	USED FOR NODES	9135
NODE	1533	USED FOR NODES	8782
NODE	2305	USED FOR NODES	9136
NODE	1585	USED FOR NODES	8897
NODE	1471	USED FOR NODES	8651
NODE	1562	USED FOR NODES	8802
NODE	1772	USED FOR NODES	9048
NODE	1846	USED FOR NODES	9343
NODE	1417	USED FOR NODES	8597
NODE	1845	USED FOR NODES	9342
NODE	2063	USED FOR NODES	9623
NODE	2847	USED FOR NODES	9932
NODE	650	USED FOR NODES	8135
NODE	1416	USED FOR NODES	8596
NODE	553	USED FOR NODES	8684
NODE	1771	USED FOR NODES	9047
NODE	112	USED FOR NODES	8084
NODE	1470	USED FOR NODES	8650
NODE	1325	USED FOR NODES	8088
NODE	2446	USED FOR NODES	9241
NODE	2062	USED FOR NODES	9622
NODE	2846	USED FOR NODES	9929
NODE	2848	USED FOR NODES	9933
NODE	1844	USED FOR NODES	9341
NODE	2447	USED FOR NODES	9242
NODE	1561	USED FOR NODES	8801
NODE	1326	USED FOR NODES	8089
NODE	1327	USED FOR NODES	8090
NODE	1545	USED FOR NODES	8799
NODE	545	USED FOR NODES	8683
NODE	1546	USED FOR NODES	8800
NODE	642	USED FOR NODES	8134
NODE	1313	USED FOR NODES	8085
NODE	2046	USED FOR NODES	9620
NODE	2047	USED FOR NODES	9621
NODE	1408	USED FOR NODES	8594
NODE	1409	USED FOR NODES	8595
NODE	1462	USED FOR NODES	8648
NODE	108	USED FOR NODES	8083
NODE	1463	USED FOR NODES	8649
NODE	2430	USED FOR NODES	9239
NODE	2588	USED FOR NODES	9694
NODE	2431	USED FOR NODES	9240
NODE	2830	USED FOR NODES	9930
NODE	1315	USED FOR NODES	8087
NODE	1756	USED FOR NODES	9046
NODE	1820	USED FOR NODES	9338
NODE	1822	USED FOR NODES	9340
NODE	2831	USED FOR NODES	9931
NODE	1755	USED FOR NODES	9045
NODE	2589	USED FOR NODES	9702

NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING *** CP= 62.430 TIME= 20:56:23
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 1 USED FOR KEYPOINT(S) 209 372 535
 KEYPOINT 11 USED FOR KEYPOINT(S) 541
 KEYPOINT 13 USED FOR KEYPOINT(S) 210
 KEYPOINT 14 USED FOR KEYPOINT(S) 551
 KEYPOINT 16 USED FOR KEYPOINT(S) 223
 KEYPOINT 17 USED FOR KEYPOINT(S) 560
 KEYPOINT 19 USED FOR KEYPOINT(S) 232
 KEYPOINT 20 USED FOR KEYPOINT(S) 212 375 538
 KEYPOINT 21 USED FOR KEYPOINT(S) 218 381 544
 KEYPOINT 22 USED FOR KEYPOINT(S) 297 460 623
 KEYPOINT 23 USED FOR KEYPOINT(S) 304 467 630

KEYPOINT	24 USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25 USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26 USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27 USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28 USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29 USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30 USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31 USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50 USED FOR KEYPOINT(S)	603		
KEYPOINT	51 USED FOR KEYPOINT(S)	274		
KEYPOINT	52 USED FOR KEYPOINT(S)	612		
KEYPOINT	53 USED FOR KEYPOINT(S)	285		
KEYPOINT	54 USED FOR KEYPOINT(S)	621		
KEYPOINT	55 USED FOR KEYPOINT(S)	294		
KEYPOINT	56 USED FOR KEYPOINT(S)	546		
KEYPOINT	57 USED FOR KEYPOINT(S)	217		
KEYPOINT	58 USED FOR KEYPOINT(S)	555		
KEYPOINT	59 USED FOR KEYPOINT(S)	228		
KEYPOINT	60 USED FOR KEYPOINT(S)	564		
KEYPOINT	61 USED FOR KEYPOINT(S)	237		
KEYPOINT	89 USED FOR KEYPOINT(S)	542		
KEYPOINT	94 USED FOR KEYPOINT(S)	211		
KEYPOINT	99 USED FOR KEYPOINT(S)	624		
KEYPOINT	103 USED FOR KEYPOINT(S)	296		
KEYPOINT	105 USED FOR KEYPOINT(S)	300		
KEYPOINT	107 USED FOR KEYPOINT(S)	552		
KEYPOINT	109 USED FOR KEYPOINT(S)	224		
KEYPOINT	110 USED FOR KEYPOINT(S)	625		
KEYPOINT	111 USED FOR KEYPOINT(S)	302		
KEYPOINT	115 USED FOR KEYPOINT(S)	627		
KEYPOINT	117 USED FOR KEYPOINT(S)	645		
KEYPOINT	119 USED FOR KEYPOINT(S)	561		
KEYPOINT	121 USED FOR KEYPOINT(S)	233		
KEYPOINT	122 USED FOR KEYPOINT(S)	631		
KEYPOINT	123 USED FOR KEYPOINT(S)	303		
KEYPOINT	127 USED FOR KEYPOINT(S)	307		
KEYPOINT	129 USED FOR KEYPOINT(S)	632		
KEYPOINT	131 USED FOR KEYPOINT(S)	309		
KEYPOINT	132 USED FOR KEYPOINT(S)	595		
KEYPOINT	133 USED FOR KEYPOINT(S)	634		
KEYPOINT	134 USED FOR KEYPOINT(S)	317		
KEYPOINT	136 USED FOR KEYPOINT(S)	638		
KEYPOINT	137 USED FOR KEYPOINT(S)	266		
KEYPOINT	138 USED FOR KEYPOINT(S)	310		
KEYPOINT	139 USED FOR KEYPOINT(S)	314		
KEYPOINT	140 USED FOR KEYPOINT(S)	599		
KEYPOINT	141 USED FOR KEYPOINT(S)	639		
KEYPOINT	142 USED FOR KEYPOINT(S)	316		
KEYPOINT	144 USED FOR KEYPOINT(S)	641		
KEYPOINT	145 USED FOR KEYPOINT(S)	270		
KEYPOINT	146 USED FOR KEYPOINT(S)	321		
KEYPOINT	147 USED FOR KEYPOINT(S)	646		
KEYPOINT	148 USED FOR KEYPOINT(S)	323		
KEYPOINT	149 USED FOR KEYPOINT(S)	648		
KEYPOINT	152 USED FOR KEYPOINT(S)	652		
KEYPOINT	153 USED FOR KEYPOINT(S)	324		
KEYPOINT	154 USED FOR KEYPOINT(S)	328		
KEYPOINT	155 USED FOR KEYPOINT(S)	653		
KEYPOINT	156 USED FOR KEYPOINT(S)	330		
KEYPOINT	158 USED FOR KEYPOINT(S)	606		
KEYPOINT	159 USED FOR KEYPOINT(S)	655		
KEYPOINT	160 USED FOR KEYPOINT(S)	279		
KEYPOINT	162 USED FOR KEYPOINT(S)	659		
KEYPOINT	164 USED FOR KEYPOINT(S)	609		
KEYPOINT	165 USED FOR KEYPOINT(S)	331		
KEYPOINT	166 USED FOR KEYPOINT(S)	282		
KEYPOINT	167 USED FOR KEYPOINT(S)	335		
KEYPOINT	168 USED FOR KEYPOINT(S)	660		
KEYPOINT	170 USED FOR KEYPOINT(S)	337		
KEYPOINT	171 USED FOR KEYPOINT(S)	662		

KEYPOINT	173	USED FOR KEYPOINT(S)	666
KEYPOINT	174	USED FOR KEYPOINT(S)	338
KEYPOINT	176	USED FOR KEYPOINT(S)	615
KEYPOINT	177	USED FOR KEYPOINT(S)	342
KEYPOINT	178	USED FOR KEYPOINT(S)	288
KEYPOINT	179	USED FOR KEYPOINT(S)	667
KEYPOINT	180	USED FOR KEYPOINT(S)	344
KEYPOINT	182	USED FOR KEYPOINT(S)	618
KEYPOINT	183	USED FOR KEYPOINT(S)	669
KEYPOINT	184	USED FOR KEYPOINT(S)	291
KEYPOINT	215	USED FOR KEYPOINT(S)	373
KEYPOINT	216	USED FOR KEYPOINT(S)	374
KEYPOINT	220	USED FOR KEYPOINT(S)	380
KEYPOINT	225	USED FOR KEYPOINT(S)	386
KEYPOINT	226	USED FOR KEYPOINT(S)	387
KEYPOINT	229	USED FOR KEYPOINT(S)	391
KEYPOINT	234	USED FOR KEYPOINT(S)	395
KEYPOINT	235	USED FOR KEYPOINT(S)	396
KEYPOINT	238	USED FOR KEYPOINT(S)	400
KEYPOINT	269	USED FOR KEYPOINT(S)	429
KEYPOINT	273	USED FOR KEYPOINT(S)	433
KEYPOINT	277	USED FOR KEYPOINT(S)	437
KEYPOINT	280	USED FOR KEYPOINT(S)	442
KEYPOINT	283	USED FOR KEYPOINT(S)	445
KEYPOINT	286	USED FOR KEYPOINT(S)	448
KEYPOINT	289	USED FOR KEYPOINT(S)	451
KEYPOINT	292	USED FOR KEYPOINT(S)	454
KEYPOINT	295	USED FOR KEYPOINT(S)	457
KEYPOINT	298	USED FOR KEYPOINT(S)	459
KEYPOINT	299	USED FOR KEYPOINT(S)	463
KEYPOINT	301	USED FOR KEYPOINT(S)	465
KEYPOINT	305	USED FOR KEYPOINT(S)	466
KEYPOINT	306	USED FOR KEYPOINT(S)	470
KEYPOINT	308	USED FOR KEYPOINT(S)	472
KEYPOINT	312	USED FOR KEYPOINT(S)	473
KEYPOINT	313	USED FOR KEYPOINT(S)	477
KEYPOINT	315	USED FOR KEYPOINT(S)	479
KEYPOINT	319	USED FOR KEYPOINT(S)	480
KEYPOINT	320	USED FOR KEYPOINT(S)	484
KEYPOINT	322	USED FOR KEYPOINT(S)	486
KEYPOINT	326	USED FOR KEYPOINT(S)	487
KEYPOINT	327	USED FOR KEYPOINT(S)	491
KEYPOINT	329	USED FOR KEYPOINT(S)	493
KEYPOINT	333	USED FOR KEYPOINT(S)	494
KEYPOINT	334	USED FOR KEYPOINT(S)	498
KEYPOINT	336	USED FOR KEYPOINT(S)	500
KEYPOINT	340	USED FOR KEYPOINT(S)	501
KEYPOINT	341	USED FOR KEYPOINT(S)	505
KEYPOINT	343	USED FOR KEYPOINT(S)	507
KEYPOINT	378	USED FOR KEYPOINT(S)	536
KEYPOINT	379	USED FOR KEYPOINT(S)	537
KEYPOINT	383	USED FOR KEYPOINT(S)	543
KEYPOINT	388	USED FOR KEYPOINT(S)	549
KEYPOINT	389	USED FOR KEYPOINT(S)	550
KEYPOINT	392	USED FOR KEYPOINT(S)	554
KEYPOINT	397	USED FOR KEYPOINT(S)	558
KEYPOINT	398	USED FOR KEYPOINT(S)	559
KEYPOINT	401	USED FOR KEYPOINT(S)	563
KEYPOINT	432	USED FOR KEYPOINT(S)	592
KEYPOINT	436	USED FOR KEYPOINT(S)	596
KEYPOINT	440	USED FOR KEYPOINT(S)	600
KEYPOINT	443	USED FOR KEYPOINT(S)	605
KEYPOINT	446	USED FOR KEYPOINT(S)	608
KEYPOINT	449	USED FOR KEYPOINT(S)	611
KEYPOINT	452	USED FOR KEYPOINT(S)	614
KEYPOINT	455	USED FOR KEYPOINT(S)	617
KEYPOINT	458	USED FOR KEYPOINT(S)	620
KEYPOINT	461	USED FOR KEYPOINT(S)	622
KEYPOINT	462	USED FOR KEYPOINT(S)	626
KEYPOINT	464	USED FOR KEYPOINT(S)	628

KEYPOINT	468	USED FOR KEYPOINT(S)	629
KEYPOINT	469	USED FOR KEYPOINT(S)	633
KEYPOINT	471	USED FOR KEYPOINT(S)	635
KEYPOINT	475	USED FOR KEYPOINT(S)	636
KEYPOINT	476	USED FOR KEYPOINT(S)	640
KEYPOINT	478	USED FOR KEYPOINT(S)	642
KEYPOINT	482	USED FOR KEYPOINT(S)	643
KEYPOINT	483	USED FOR KEYPOINT(S)	647
KEYPOINT	485	USED FOR KEYPOINT(S)	649
KEYPOINT	489	USED FOR KEYPOINT(S)	650
KEYPOINT	490	USED FOR KEYPOINT(S)	654
KEYPOINT	492	USED FOR KEYPOINT(S)	656
KEYPOINT	496	USED FOR KEYPOINT(S)	657
KEYPOINT	497	USED FOR KEYPOINT(S)	661
KEYPOINT	499	USED FOR KEYPOINT(S)	663
KEYPOINT	503	USED FOR KEYPOINT(S)	664
KEYPOINT	504	USED FOR KEYPOINT(S)	668
KEYPOINT	506	USED FOR KEYPOINT(S)	670
LINE	21	USED FOR LINE(S)	511
LINE	22	USED FOR LINE(S)	1363
LINE	25	USED FOR LINE(S)	1385
LINE	27	USED FOR LINE(S)	549
LINE	30	USED FOR LINE(S)	1406
LINE	32	USED FOR LINE(S)	570
LINE	35	USED FOR LINE(S)	514 931 1348
LINE	36	USED FOR LINE(S)	533 950 1367
LINE	37	USED FOR LINE(S)	746 1163 1580
LINE	38	USED FOR LINE(S)	765 1182 1599
LINE	39	USED FOR LINE(S)	781 1198 1615
LINE	40	USED FOR LINE(S)	662 1079 1496
LINE	41	USED FOR LINE(S)	674 1091 1508
LINE	42	USED FOR LINE(S)	686 1103 1520
LINE	43	USED FOR LINE(S)	797 1214 1631
LINE	44	USED FOR LINE(S)	816 1233 1650
LINE	45	USED FOR LINE(S)	832 1249 1666
LINE	46	USED FOR LINE(S)	848 1265 1682
LINE	74	USED FOR LINE(S)	1529
LINE	75	USED FOR LINE(S)	685
LINE	76	USED FOR LINE(S)	1552
LINE	77	USED FOR LINE(S)	716
LINE	78	USED FOR LINE(S)	1576
LINE	79	USED FOR LINE(S)	740
LINE	83	USED FOR LINE(S)	1376
LINE	84	USED FOR LINE(S)	532
LINE	85	USED FOR LINE(S)	1396
LINE	86	USED FOR LINE(S)	560
LINE	87	USED FOR LINE(S)	1417
LINE	88	USED FOR LINE(S)	581
LINE	158	USED FOR LINE(S)	1364
LINE	160	USED FOR LINE(S)	1359
LINE	172	USED FOR LINE(S)	512
LINE	176	USED FOR LINE(S)	513
LINE	180	USED FOR LINE(S)	1373
LINE	192	USED FOR LINE(S)	531
LINE	204	USED FOR LINE(S)	1386
LINE	205	USED FOR LINE(S)	1387
LINE	206	USED FOR LINE(S)	1584
LINE	207	USED FOR LINE(S)	1635
LINE	208	USED FOR LINE(S)	550
LINE	209	USED FOR LINE(S)	547
LINE	211	USED FOR LINE(S)	1582
LINE	217	USED FOR LINE(S)	1395
LINE	222	USED FOR LINE(S)	558
LINE	224	USED FOR LINE(S)	744
LINE	230	USED FOR LINE(S)	1407
LINE	231	USED FOR LINE(S)	1408
LINE	233	USED FOR LINE(S)	745
LINE	234	USED FOR LINE(S)	571
LINE	235	USED FOR LINE(S)	568
LINE	237	USED FOR LINE(S)	756

LINE	243	USED	FOR	LINE(S)	1416
LINE	245	USED	FOR	LINE(S)	754
LINE	248	USED	FOR	LINE(S)	579
LINE	250	USED	FOR	LINE(S)	1585
LINE	251	USED	FOR	LINE(S)	1586
LINE	257	USED	FOR	LINE(S)	762
LINE	258	USED	FOR	LINE(S)	760
LINE	263	USED	FOR	LINE(S)	1591
LINE	267	USED	FOR	LINE(S)	1592
LINE	269	USED	FOR	LINE(S)	1602
LINE	271	USED	FOR	LINE(S)	1600
LINE	278	USED	FOR	LINE(S)	763
LINE	282	USED	FOR	LINE(S)	764
LINE	283	USED	FOR	LINE(S)	773
LINE	287	USED	FOR	LINE(S)	771
LINE	289	USED	FOR	LINE(S)	1505
LINE	291	USED	FOR	LINE(S)	1502
LINE	293	USED	FOR	LINE(S)	1603
LINE	294	USED	FOR	LINE(S)	1604
LINE	295	USED	FOR	LINE(S)	778
LINE	300	USED	FOR	LINE(S)	776
LINE	303	USED	FOR	LINE(S)	660
LINE	305	USED	FOR	LINE(S)	1608
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LINE	307	USED	FOR	LINE(S)	661
LINE	308	USED	FOR	LINE(S)	1618
LINE	309	USED	FOR	LINE(S)	1517
LINE	310	USED	FOR	LINE(S)	1633
LINE	311	USED	FOR	LINE(S)	1514
LINE	313	USED	FOR	LINE(S)	1616
LINE	315	USED	FOR	LINE(S)	779
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LINE	321	USED	FOR	LINE(S)	789
LINE	323	USED	FOR	LINE(S)	672
LINE	325	USED	FOR	LINE(S)	787
LINE	327	USED	FOR	LINE(S)	673
LINE	328	USED	FOR	LINE(S)	1619
LINE	329	USED	FOR	LINE(S)	1620
LINE	330	USED	FOR	LINE(S)	794
LINE	331	USED	FOR	LINE(S)	1526
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LINE	364	USED	FOR	LINE(S)	1643
LINE	368	USED	FOR	LINE(S)	1543
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LINE	372	USED	FOR	LINE(S)	708
LINE	373	USED	FOR	LINE(S)	706
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LINE	382	USED	FOR	LINE(S)	815
LINE	383	USED	FOR	LINE(S)	824
LINE	384	USED	FOR	LINE(S)	822
LINE	386	USED	FOR	LINE(S)	714

LINE	388	USED	FOR	LINE(S)	1654
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LINE	390	USED	FOR	LINE(S)	829
LINE	394	USED	FOR	LINE(S)	1559
LINE	395	USED	FOR	LINE(S)	1560
LINE	396	USED	FOR	LINE(S)	827
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LINE	399	USED	FOR	LINE(S)	722
LINE	401	USED	FOR	LINE(S)	1659
LINE	402	USED	FOR	LINE(S)	1660
LINE	403	USED	FOR	LINE(S)	1669
LINE	407	USED	FOR	LINE(S)	1567
LINE	408	USED	FOR	LINE(S)	1568
LINE	410	USED	FOR	LINE(S)	1667
LINE	411	USED	FOR	LINE(S)	732
LINE	412	USED	FOR	LINE(S)	730
LINE	415	USED	FOR	LINE(S)	830
LINE	416	USED	FOR	LINE(S)	831
LINE	420	USED	FOR	LINE(S)	1575
LINE	421	USED	FOR	LINE(S)	840
LINE	422	USED	FOR	LINE(S)	838
LINE	424	USED	FOR	LINE(S)	1670
LINE	425	USED	FOR	LINE(S)	738
LINE	427	USED	FOR	LINE(S)	1671
LINE	428	USED	FOR	LINE(S)	845
LINE	429	USED	FOR	LINE(S)	843
LINE	431	USED	FOR	LINE(S)	1675
LINE	432	USED	FOR	LINE(S)	1676
LINE	433	USED	FOR	LINE(S)	1685
LINE	435	USED	FOR	LINE(S)	1683
LINE	437	USED	FOR	LINE(S)	846
LINE	438	USED	FOR	LINE(S)	847
LINE	439	USED	FOR	LINE(S)	856
LINE	440	USED	FOR	LINE(S)	854
LINE	442	USED	FOR	LINE(S)	1686
LINE	443	USED	FOR	LINE(S)	1687
LINE	444	USED	FOR	LINE(S)	861
LINE	445	USED	FOR	LINE(S)	859
LINE	447	USED	FOR	LINE(S)	1691
LINE	448	USED	FOR	LINE(S)	1692
LINE	525	USED	FOR	LINE(S)	929
LINE	529	USED	FOR	LINE(S)	928
LINE	530	USED	FOR	LINE(S)	930
LINE	539	USED	FOR	LINE(S)	948
LINE	542	USED	FOR	LINE(S)	949
LINE	551	USED	FOR	LINE(S)	966
LINE	552	USED	FOR	LINE(S)	964
LINE	553	USED	FOR	LINE(S)	967
LINE	561	USED	FOR	LINE(S)	975
LINE	562	USED	FOR	LINE(S)	977
LINE	572	USED	FOR	LINE(S)	987
LINE	573	USED	FOR	LINE(S)	985
LINE	574	USED	FOR	LINE(S)	988
LINE	582	USED	FOR	LINE(S)	996
LINE	583	USED	FOR	LINE(S)	998
LINE	668	USED	FOR	LINE(S)	1077
LINE	671	USED	FOR	LINE(S)	1078
LINE	680	USED	FOR	LINE(S)	1089
LINE	683	USED	FOR	LINE(S)	1090
LINE	692	USED	FOR	LINE(S)	1101
LINE	695	USED	FOR	LINE(S)	1102
LINE	701	USED	FOR	LINE(S)	1115
LINE	702	USED	FOR	LINE(S)	1117
LINE	709	USED	FOR	LINE(S)	1123
LINE	710	USED	FOR	LINE(S)	1125
LINE	717	USED	FOR	LINE(S)	1131
LINE	718	USED	FOR	LINE(S)	1133
LINE	725	USED	FOR	LINE(S)	1139
LINE	726	USED	FOR	LINE(S)	1141
LINE	733	USED	FOR	LINE(S)	1147

LINE	734	USED	FOR	LINE(S)	1149
LINE	741	USED	FOR	LINE(S)	1155
LINE	742	USED	FOR	LINE(S)	1157
LINE	748	USED	FOR	LINE(S)	1161
LINE	750	USED	FOR	LINE(S)	1162
LINE	751	USED	FOR	LINE(S)	1171
LINE	752	USED	FOR	LINE(S)	1173
LINE	757	USED	FOR	LINE(S)	1177
LINE	758	USED	FOR	LINE(S)	1179
LINE	766	USED	FOR	LINE(S)	1180
LINE	768	USED	FOR	LINE(S)	1181
LINE	769	USED	FOR	LINE(S)	1188
LINE	770	USED	FOR	LINE(S)	1190
LINE	774	USED	FOR	LINE(S)	1193
LINE	775	USED	FOR	LINE(S)	1195
LINE	782	USED	FOR	LINE(S)	1196
LINE	784	USED	FOR	LINE(S)	1197
LINE	785	USED	FOR	LINE(S)	1204
LINE	786	USED	FOR	LINE(S)	1206
LINE	790	USED	FOR	LINE(S)	1209
LINE	791	USED	FOR	LINE(S)	1211
LINE	799	USED	FOR	LINE(S)	1212
LINE	801	USED	FOR	LINE(S)	1213
LINE	802	USED	FOR	LINE(S)	1222
LINE	803	USED	FOR	LINE(S)	1224
LINE	808	USED	FOR	LINE(S)	1228
LINE	809	USED	FOR	LINE(S)	1230
LINE	817	USED	FOR	LINE(S)	1231
LINE	819	USED	FOR	LINE(S)	1232
LINE	820	USED	FOR	LINE(S)	1239
LINE	821	USED	FOR	LINE(S)	1241
LINE	825	USED	FOR	LINE(S)	1244
LINE	826	USED	FOR	LINE(S)	1246
LINE	833	USED	FOR	LINE(S)	1247
LINE	835	USED	FOR	LINE(S)	1248
LINE	836	USED	FOR	LINE(S)	1255
LINE	837	USED	FOR	LINE(S)	1257
LINE	841	USED	FOR	LINE(S)	1260
LINE	842	USED	FOR	LINE(S)	1262
LINE	849	USED	FOR	LINE(S)	1263
LINE	851	USED	FOR	LINE(S)	1264
LINE	852	USED	FOR	LINE(S)	1271
LINE	853	USED	FOR	LINE(S)	1273
LINE	857	USED	FOR	LINE(S)	1276
LINE	858	USED	FOR	LINE(S)	1278
LINE	942	USED	FOR	LINE(S)	1346
LINE	946	USED	FOR	LINE(S)	1345
LINE	947	USED	FOR	LINE(S)	1347
LINE	956	USED	FOR	LINE(S)	1365
LINE	959	USED	FOR	LINE(S)	1366
LINE	968	USED	FOR	LINE(S)	1383
LINE	969	USED	FOR	LINE(S)	1381
LINE	970	USED	FOR	LINE(S)	1384
LINE	978	USED	FOR	LINE(S)	1392
LINE	979	USED	FOR	LINE(S)	1394
LINE	989	USED	FOR	LINE(S)	1404
LINE	990	USED	FOR	LINE(S)	1402
LINE	991	USED	FOR	LINE(S)	1405
LINE	999	USED	FOR	LINE(S)	1413
LINE	1000	USED	FOR	LINE(S)	1415
LINE	1085	USED	FOR	LINE(S)	1494
LINE	1088	USED	FOR	LINE(S)	1495
LINE	1097	USED	FOR	LINE(S)	1506
LINE	1100	USED	FOR	LINE(S)	1507
LINE	1109	USED	FOR	LINE(S)	1518
LINE	1112	USED	FOR	LINE(S)	1519
LINE	1118	USED	FOR	LINE(S)	1532
LINE	1119	USED	FOR	LINE(S)	1534
LINE	1126	USED	FOR	LINE(S)	1540
LINE	1127	USED	FOR	LINE(S)	1542

LINE	1134	USED FOR LINE(S)	1548
LINE	1135	USED FOR LINE(S)	1550
LINE	1142	USED FOR LINE(S)	1556
LINE	1143	USED FOR LINE(S)	1558
LINE	1150	USED FOR LINE(S)	1564
LINE	1151	USED FOR LINE(S)	1566
LINE	1158	USED FOR LINE(S)	1572
LINE	1159	USED FOR LINE(S)	1574
LINE	1165	USED FOR LINE(S)	1578
LINE	1167	USED FOR LINE(S)	1579
LINE	1168	USED FOR LINE(S)	1588
LINE	1169	USED FOR LINE(S)	1590
LINE	1174	USED FOR LINE(S)	1594
LINE	1175	USED FOR LINE(S)	1596
LINE	1183	USED FOR LINE(S)	1597
LINE	1185	USED FOR LINE(S)	1598
LINE	1186	USED FOR LINE(S)	1605
LINE	1187	USED FOR LINE(S)	1607
LINE	1191	USED FOR LINE(S)	1610
LINE	1192	USED FOR LINE(S)	1612
LINE	1199	USED FOR LINE(S)	1613
LINE	1201	USED FOR LINE(S)	1614
LINE	1202	USED FOR LINE(S)	1621
LINE	1203	USED FOR LINE(S)	1623
LINE	1207	USED FOR LINE(S)	1626
LINE	1208	USED FOR LINE(S)	1628
LINE	1216	USED FOR LINE(S)	1629
LINE	1218	USED FOR LINE(S)	1630
LINE	1219	USED FOR LINE(S)	1639
LINE	1220	USED FOR LINE(S)	1641
LINE	1225	USED FOR LINE(S)	1645
LINE	1226	USED FOR LINE(S)	1647
LINE	1234	USED FOR LINE(S)	1648
LINE	1236	USED FOR LINE(S)	1649
LINE	1237	USED FOR LINE(S)	1656
LINE	1238	USED FOR LINE(S)	1658
LINE	1242	USED FOR LINE(S)	1661
LINE	1243	USED FOR LINE(S)	1663
LINE	1250	USED FOR LINE(S)	1664
LINE	1252	USED FOR LINE(S)	1665
LINE	1253	USED FOR LINE(S)	1672
LINE	1254	USED FOR LINE(S)	1674
LINE	1258	USED FOR LINE(S)	1677
LINE	1259	USED FOR LINE(S)	1679
LINE	1266	USED FOR LINE(S)	1680
LINE	1268	USED FOR LINE(S)	1681
LINE	1269	USED FOR LINE(S)	1688
LINE	1270	USED FOR LINE(S)	1690
LINE	1274	USED FOR LINE(S)	1693
LINE	1275	USED FOR LINE(S)	1695
AREA	89	USED FOR AREA(S)	1148
AREA	102	USED FOR AREA(S)	423
AREA	105	USED FOR AREA(S)	1161
AREA	118	USED FOR AREA(S)	439
AREA	124	USED FOR AREA(S)	1168
AREA	127	USED FOR AREA(S)	453
AREA	133	USED FOR AREA(S)	1176
AREA	136	USED FOR AREA(S)	462
AREA	142	USED FOR AREA(S)	1184
AREA	145	USED FOR AREA(S)	469
AREA	151	USED FOR AREA(S)	1192
AREA	154	USED FOR AREA(S)	478
AREA	169	USED FOR AREA(S)	1347
AREA	178	USED FOR AREA(S)	633
AREA	185	USED FOR AREA(S)	640
AREA	194	USED FOR AREA(S)	1350
AREA	201	USED FOR AREA(S)	645
AREA	210	USED FOR AREA(S)	1355
AREA	217	USED FOR AREA(S)	1277
AREA	219	USED FOR AREA(S)	1362

AREA	228	USED	FOR	AREA(S)	648
AREA	230	USED	FOR	AREA(S)	555
AREA	233	USED	FOR	AREA(S)	1289
AREA	235	USED	FOR	AREA(S)	654
AREA	244	USED	FOR	AREA(S)	1364
AREA	246	USED	FOR	AREA(S)	567
AREA	249	USED	FOR	AREA(S)	1301
AREA	251	USED	FOR	AREA(S)	658
AREA	260	USED	FOR	AREA(S)	1368
AREA	262	USED	FOR	AREA(S)	579
AREA	265	USED	FOR	AREA(S)	1374
AREA	268	USED	FOR	AREA(S)	1307
AREA	271	USED	FOR	AREA(S)	593
AREA	274	USED	FOR	AREA(S)	660
AREA	277	USED	FOR	AREA(S)	1314
AREA	280	USED	FOR	AREA(S)	600
AREA	283	USED	FOR	AREA(S)	666
AREA	286	USED	FOR	AREA(S)	1321
AREA	289	USED	FOR	AREA(S)	607
AREA	292	USED	FOR	AREA(S)	1376
AREA	295	USED	FOR	AREA(S)	1328
AREA	298	USED	FOR	AREA(S)	614
AREA	301	USED	FOR	AREA(S)	670
AREA	304	USED	FOR	AREA(S)	1335
AREA	307	USED	FOR	AREA(S)	621
AREA	310	USED	FOR	AREA(S)	1380
AREA	313	USED	FOR	AREA(S)	1342
AREA	316	USED	FOR	AREA(S)	628
AREA	319	USED	FOR	AREA(S)	1386
AREA	321	USED	FOR	AREA(S)	672
AREA	323	USED	FOR	AREA(S)	679
AREA	325	USED	FOR	AREA(S)	1389
AREA	327	USED	FOR	AREA(S)	684
AREA	329	USED	FOR	AREA(S)	1394
AREA	331	USED	FOR	AREA(S)	1401
AREA	333	USED	FOR	AREA(S)	687
AREA	335	USED	FOR	AREA(S)	693
AREA	337	USED	FOR	AREA(S)	1403
AREA	339	USED	FOR	AREA(S)	697
AREA	341	USED	FOR	AREA(S)	1407
AREA	343	USED	FOR	AREA(S)	1413
AREA	345	USED	FOR	AREA(S)	699
AREA	347	USED	FOR	AREA(S)	705
AREA	349	USED	FOR	AREA(S)	1415
AREA	351	USED	FOR	AREA(S)	709
AREA	353	USED	FOR	AREA(S)	1419
AREA	355	USED	FOR	AREA(S)	1425
AREA	357	USED	FOR	AREA(S)	711
AREA	359	USED	FOR	AREA(S)	717
AREA	361	USED	FOR	AREA(S)	1427
AREA	363	USED	FOR	AREA(S)	721
AREA	365	USED	FOR	AREA(S)	1431
AREA	436	USED	FOR	AREA(S)	779
AREA	449	USED	FOR	AREA(S)	795
AREA	456	USED	FOR	AREA(S)	809
AREA	464	USED	FOR	AREA(S)	818
AREA	472	USED	FOR	AREA(S)	825
AREA	480	USED	FOR	AREA(S)	834
AREA	565	USED	FOR	AREA(S)	911
AREA	577	USED	FOR	AREA(S)	923
AREA	589	USED	FOR	AREA(S)	935
AREA	595	USED	FOR	AREA(S)	949
AREA	602	USED	FOR	AREA(S)	956
AREA	609	USED	FOR	AREA(S)	963
AREA	616	USED	FOR	AREA(S)	970
AREA	623	USED	FOR	AREA(S)	977
AREA	630	USED	FOR	AREA(S)	984
AREA	635	USED	FOR	AREA(S)	989
AREA	638	USED	FOR	AREA(S)	996
AREA	643	USED	FOR	AREA(S)	1001

AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000

ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00
ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
XC,YC,ZC= -.32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
XC,YC,ZC= -.32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= .32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= .32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= -.32495 -.32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
XC,YC,ZC= -.32495 .32495 .00000E+00
ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation
In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0

NSLA,S,1,
ESURF,

Inner SS. Side of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #3

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #3

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation - Between Can and IB
Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #2

ELEMENT TYPE SET TO 26


```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN 1.2336      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -100.00      AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .000000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,      AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -1.5099      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
```

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.130 TIME= 20:56:37
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360
KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.080

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:57:09 NOV 03, 1995 CP= 107.180
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.620 TIME= 20:57:10
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5875.660

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:33:38 NOV 03, 1995 CP= 5875.660
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5876.280 TIME= 22:33:39
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7844.360

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH
/COM,
/AUX12,
ESEL,S,TYPE,,6,

NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,glscangap,

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:30 NOV 03, 1995 CP= 7844.450
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE SET TO 18
SE,glscangap,
SE,iobargap,

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 6 TO 6 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 16 TO 16 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7847.270

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....

DONT MESH; Either Assume its VOID or its meshed earlier

This section used only if both rad. and He conducti
is used in the model.

He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,
VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:46 NOV 03, 1995 CP= 7856.810
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7866.510

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7866.520 TIME= 23:06:56
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1409103 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7868.870 TIME= 23:06:58
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:58 NOV 03, 1995 CP= 7868.870
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO 273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7870.310 TIME= 23:07:00
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7870.760 TIME= 23:07:00
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19865.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.46938E-12	IXX = .3128E+05	IXX = .3099E+05
YC = -.14018E-01	IYY = .3099E+05	IYY = .3070E+05
ZC = -.11988	IZZ = 9965.	IZZ = 9961.
	IXY = .8715E-08	IXY = .8846E-08
	IYZ = .4529E-10	IYZ = 33.38
	IZX = -.2956E-08	IZX = -.1838E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	172.638

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7909.920 TIME= 23:08:39
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES | TYPE | NUMBER | ENAME | TOTAL CP | AVE CP | |------|--------|-------|----------|--------| |------|--------|-------|----------|--------|

2	6400	SOLID70	22.440	.004
11	320	SHELL57	.830	.003
18	2	MATRIX50	5.530	2.765

Time at end of element matrix formulation CP= 7909.92.
HT FLOW CONVERGENCE VALUE= 155.8 CRITERION= .1558

Estimated number of active DOF= 8639.
Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8985.21.

Equation solver maximum pivot= 45.7737291 at node 8097 TEMP.
Equation solver minimum pivot= 0.21783452 at node 3498 TEMP.
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.5
HT FLOW CONVERGENCE VALUE= 460.6 CRITERION= .9967E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.22
HT FLOW CONVERGENCE VALUE= 55.48 CRITERION= .9967E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.25
HT FLOW CONVERGENCE VALUE= 10.30 CRITERION= .9967E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9952
HT FLOW CONVERGENCE VALUE= .6885 CRITERION= .9967E-01
EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2108
HT FLOW CONVERGENCE VALUE= .1701 CRITERION= .9967E-01
EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1596E-01
HT FLOW CONVERGENCE VALUE= .9934E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.350	.002
11	320	SHELL57	.400	.001
18	2	MATRIX50	8.740	4.370

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.350	.000
11	320	SHELL57	.090	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS

ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS

BUFFER SIZE USED= 4096
57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21j2.emat
5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21j2.esav
58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21j2.tri
.047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21j2.dsub
5.297 MB WRITTEN ON RESULTS FILE: glsh21j2.rth

Solve steady-state for initial conditions
with WP surface temperatures from repository
steady-state solution.
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1410232 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14573.700 TIME= 01:19:24
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14574.140 TIME= 01:19:24
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning messages.

*** NOTE *** CP= 14574.140 TIME= 01:19:24
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:19:24 NOV 04, 1995 CP= 14574.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .9952E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3108E-02
HT FLOW CONVERGENCE VALUE= .2426E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP
Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,4,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07
TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1410232 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14865.940 TIME= 01:30:03
This load step will be a static (steady-state) step.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15977.540 TIME= 02:09:24
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:09:25 NOV 04, 1995 CP= 15977.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.91 CRITERION= .1053
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.278
HT FLOW CONVERGENCE VALUE= 6.569 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.294
HT FLOW CONVERGENCE VALUE= .9809 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7312E-01
HT FLOW CONVERGENCE VALUE= .4985E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16621.130 TIME= 02:32:10
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:32:11 NOV 04, 1995 CP= 16621.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 35.40 CRITERION= .9779E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.412
HT FLOW CONVERGENCE VALUE= 4.372 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8641
HT FLOW CONVERGENCE VALUE= .6407 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4990E-01
HT FLOW CONVERGENCE VALUE= .3140E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17264.570 TIME= 02:54:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:54:53 NOV 04, 1995 CP= 17265.010
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.69 CRITERION= .9331E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.455
HT FLOW CONVERGENCE VALUE= 3.272 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6475
HT FLOW CONVERGENCE VALUE= .4691 CRITERION= .8883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3757E-01
HT FLOW CONVERGENCE VALUE= .2227E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17907.900 TIME= 03:17:37
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:17:37 NOV 04, 1995 CP= 17908.340
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 24.27 CRITERION= .8996E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.845
HT FLOW CONVERGENCE VALUE= 2.592 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5131
HT FLOW CONVERGENCE VALUE= .3633 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2966E-01
HT FLOW CONVERGENCE VALUE= .1675E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18551.810 TIME= 03:40:18
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:40:19 NOV 04, 1995 CP= 18552.260
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.07 CRITERION= .8721E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.417
HT FLOW CONVERGENCE VALUE= 2.127 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4213
HT FLOW CONVERGENCE VALUE= .2916 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2417E-01
HT FLOW CONVERGENCE VALUE= .1308E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 27
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19196.800 TIME= 04:03:02
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:03:02 NOV 04, 1995 CP= 19197.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 18.63 CRITERION= .8485E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.099
HT FLOW CONVERGENCE VALUE= 1.790 CRITERION= .8280E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3550
HT FLOW CONVERGENCE VALUE= .2402 CRITERION= .8280E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2013E-01

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 64.8359082 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21142.130 TIME= 05:11:20
This load step will be a static (steady-state) step.

*** NOTE *** CP= 21142.570 TIME= 05:11:20
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning
messages.

*** NOTE *** CP= 21142.570 TIME= 05:11:20
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:11:20 NOV 04, 1995 CP= 21142.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 13.86 CRITERION= .7929E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.498
HT FLOW CONVERGENCE VALUE= 1.188 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2349
HT FLOW CONVERGENCE VALUE= .1491 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1264E-01
HT FLOW CONVERGENCE VALUE= .6041E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 39
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21792.450 TIME= 05:34:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:34:09 NOV 04, 1995 CP= 21792.890
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 93.19 CRITERION= .1151
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.959
HT FLOW CONVERGENCE VALUE= 6.187 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.274
HT FLOW CONVERGENCE VALUE= .6768 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5573E-01
HT FLOW CONVERGENCE VALUE= .2253E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 42
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22436.710 TIME= 05:56:51
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:56:51 NOV 04, 1995 CP= 22437.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 56.40 CRITERION= .8453E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.615
HT FLOW CONVERGENCE VALUE= 3.387 CRITERION= .6316E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6692
HT FLOW CONVERGENCE VALUE= .2977 CRITERION= .6316E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2537E-01
HT FLOW CONVERGENCE VALUE= .1008E-01 CRITERION= .6316E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23088.060 TIME= 06:19:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:19:40 NOV 04, 1995 CP= 23088.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 38.85 CRITERION= .7146E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.716
HT FLOW CONVERGENCE VALUE= 2.141 CRITERION= .6005E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4238
HT FLOW CONVERGENCE VALUE= .1700 CRITERION= .6005E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1447E-01
HT FLOW CONVERGENCE VALUE= .5639E-02 CRITERION= .6005E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23734.580 TIME= 06:42:24
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:42:25 NOV 04, 1995 CP= 23735.030
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.82 CRITERION= .6458E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.683
HT FLOW CONVERGENCE VALUE= 1.497 CRITERION= .5783E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2942
HT FLOW CONVERGENCE VALUE= .1125 CRITERION= .5783E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9479E-02
HT FLOW CONVERGENCE VALUE= .3518E-02 CRITERION= .5783E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 51
*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24387.450 TIME= 07:05:15
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:05:15 NOV 04, 1995 CP= 24387.890
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.15 CRITERION= .6024E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.022
HT FLOW CONVERGENCE VALUE= 1.076 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2132
HT FLOW CONVERGENCE VALUE= .7894E-01 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6770E-02
HT FLOW CONVERGENCE VALUE= .2378E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25040.650 TIME= 07:28:05
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:28:05 NOV 04, 1995 CP= 25041.090
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 17.55 CRITERION= .5724E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.577
HT FLOW CONVERGENCE VALUE= .7212 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1602
HT FLOW CONVERGENCE VALUE= .5861E-01 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5159E-02
HT FLOW CONVERGENCE VALUE= .1737E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 57
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25696.700 TIME= 07:50:58
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:50:58 NOV 04, 1995 CP= 25697.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.84 CRITERION= .5514E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.318
HT FLOW CONVERGENCE VALUE= .5370 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1295
HT FLOW CONVERGENCE VALUE= .4664E-01 CRITERION= .5312E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 59
*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26159.930 TIME= 08:07:29
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:07:30 NOV 04, 1995 CP= 26160.380
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.713 CRITERION= .5270E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8513
HT FLOW CONVERGENCE VALUE= .3238 CRITERION= .5182E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7916E-01
HT FLOW CONVERGENCE VALUE= .2886E-01 CRITERION= .5182E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 61
*** TIME = .284018E+09 TIME INC = .315576E+08
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 93.1670863 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26629.190 TIME= 08:24:06
This load step will be a static (steady-state) step.

*** NOTE *** CP= 26629.630 TIME= 08:24:06
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning
messages.

*** NOTE *** CP= 26629.630 TIME= 08:24:06
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:24:06 NOV 04, 1995 CP= 26629.630
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 22
TIME AT END OF THE LOAD STEP.31558E+09
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 6.828 CRITERION= .5102E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5905
HT FLOW CONVERGENCE VALUE= .2252 CRITERION= .5058E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5379E-01
HT FLOW CONVERGENCE VALUE= .1938E-01 CRITERION= .5058E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 63
*** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27092.470 TIME= 08:40:35

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:40:35 NOV 04, 1995 CP= 27092.910
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 29.31 CRITERION= .4868E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.427
HT FLOW CONVERGENCE VALUE= 1.220 CRITERION= .4021E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2408
HT FLOW CONVERGENCE VALUE= .6593E-01 CRITERION= .4021E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9700E-02
HT FLOW CONVERGENCE VALUE= .2189E-02 CRITERION= .4021E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 66
*** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27747.550 TIME= 09:03:28

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:03:28 NOV 04, 1995 CP= 27747.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.42 CRITERION= .3281E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.327
HT FLOW CONVERGENCE VALUE= .9091 CRITERION= .3214E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7959E-01
HT FLOW CONVERGENCE VALUE= .1366E-01 CRITERION= .3214E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 68
*** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28215.570 TIME= 09:20:02

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:20:03 NOV 04, 1995 CP= 28216.020
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.83 CRITERION= .3385E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.249
HT FLOW CONVERGENCE VALUE= .7867 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8086E-01
HT FLOW CONVERGENCE VALUE= .1101E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 70
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28684.780 TIME= 09:36:38
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:36:39 NOV 04, 1995 CP= 28685.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.63 CRITERION= .3031E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.269
HT FLOW CONVERGENCE VALUE= .6075 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7105E-01
HT FLOW CONVERGENCE VALUE= .7874E-02 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 72
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29147.060 TIME= 09:53:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:53:09 NOV 04, 1995 CP= 29147.500
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 19.37 CRITERION= .2536E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.181
HT FLOW CONVERGENCE VALUE= .4363 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5291E-01
HT FLOW CONVERGENCE VALUE= .4715E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 74
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29612.500 TIME= 10:09:42
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:09:42 NOV 04, 1995 CP= 29612.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 16.61 CRITERION= .2132E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.297
HT FLOW CONVERGENCE VALUE= .3390 CRITERION= .1373E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3927E-01

HT FLOW CONVERGENCE VALUE= .2921E-02 CRITERION= .1373E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 76
 *** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30073.450 TIME= 10:26:10
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:26:10 NOV 04, 1995 CP= 30073.900
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 17.08 CRITERION= .2032E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.811
 HT FLOW CONVERGENCE VALUE= .2673 CRITERION= .1128E-01
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3573E-01
 HT FLOW CONVERGENCE VALUE= .2267E-02 CRITERION= .1128E-01 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 78
 *** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30538.810 TIME= 10:42:42
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:42:43 NOV 04, 1995 CP= 30539.250
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.18 CRITERION= .1604E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.034
 HT FLOW CONVERGENCE VALUE= .1781 CRITERION= .9340E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2364E-01
 HT FLOW CONVERGENCE VALUE= .1257E-02 CRITERION= .9340E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 80
 *** TIME = .284018E+10 TIME INC = .315576E+09
 Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
 IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
 32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
 115.610895 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLUME COMPONENT=
 IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 84.0286752 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31003.700 TIME= 10:59:14
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31004.140 TIME= 10:59:15
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning
messages.

*** NOTE *** CP= 31004.140 TIME= 10:59:15
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:59:15 NOV 04, 1995 CP= 31004.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
 TIME AT END OF THE LOAD STEP.31558E+10
 AUTOMATIC TIME STEPPING ON
 INITIAL NUMBER OF SUBSTEPS 0
 MAXIMUM NUMBER OF SUBSTEPS 0
 MINIMUM NUMBER OF SUBSTEPS 1
 MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
 STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 10.95 CRITERION= .1336E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.482
 HT FLOW CONVERGENCE VALUE= .1254 CRITERION= .7808E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1709E-01
 HT FLOW CONVERGENCE VALUE= .7832E-03 CRITERION= .7808E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 82
 *** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31469.090 TIME= 11:15:47
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 11:15:48 NOV 04, 1995 CP= 31469.540
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 55.65 CRITERION= .5544E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -10.47
 HT FLOW CONVERGENCE VALUE= .2898 CRITERION= .2424E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8112E-01
 HT FLOW CONVERGENCE VALUE= .1380E-02 CRITERION= .2424E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 84
 *** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31929.110 TIME= 11:32:14
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 11:32:15 NOV 04, 1995 CP= 31929.550
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.12 CRITERION= .2516E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.346
HT FLOW CONVERGENCE VALUE= .3294E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5904E-02
HT FLOW CONVERGENCE VALUE= .6561E-04 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 86
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32393.390 TIME= 11:48:47
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:48:48 NOV 04, 1995 CP= 32393.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.61 CRITERION= .1367E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.747
HT FLOW CONVERGENCE VALUE= .2050E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4160E-02
HT FLOW CONVERGENCE VALUE= .3852E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 88
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32853.200 TIME= 12:05:15
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:05:16 NOV 04, 1995 CP= 32853.650
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.13 CRITERION= .1018E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.310
HT FLOW CONVERGENCE VALUE= .1313E-01 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2699E-02
HT FLOW CONVERGENCE VALUE= .2061E-04 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 90
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33317.870 TIME= 12:21:47
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:21:47 NOV 04, 1995 CP= 33318.320
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.36 CRITERION= .1040E-01

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.301
HT FLOW CONVERGENCE VALUE= .1108E-01 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2332E-02
HT FLOW CONVERGENCE VALUE= .1480E-04 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 92
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33782.130 TIME= 12:38:19
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:38:20 NOV 04, 1995 CP= 33782.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.323 CRITERION= .9350E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.165
HT FLOW CONVERGENCE VALUE= .8276E-02 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1764E-02
HT FLOW CONVERGENCE VALUE= .9262E-05 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 94
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34247.230 TIME= 12:54:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:54:53 NOV 04, 1995 CP= 34247.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 8.495 CRITERION= .8515E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.056
HT FLOW CONVERGENCE VALUE= .6256E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1350E-02
HT FLOW CONVERGENCE VALUE= .5866E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 96
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34707.730 TIME= 13:11:20
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:11:21 NOV 04, 1995 CP= 34708.170
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 7.627 CRITERION= .7642E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9452
HT FLOW CONVERGENCE VALUE= .4667E-02 CRITERION= .4900E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1017E-02
HT FLOW CONVERGENCE VALUE= .3661E-05 CRITERION= .4900E-03 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 98
*** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35171.750 TIME= 13:27:53
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:27:53 NOV 04, 1995 CP= 35172.190
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 6.728 CRITERION= .6739E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8329
HT FLOW CONVERGENCE VALUE= .3426E-02 CRITERION= .4042E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7529E-03
HT FLOW CONVERGENCE VALUE= .2245E-05 CRITERION= .4042E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 100
*** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 35629.530

Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:44:17 NOV 04, 1995 CP= 35629.530
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME
2 NSOL 7655 TEMP peakgls 69.39 .3156E+11 136.6 .1578E+08

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= 15778831.6

***** ROUTINE COMPLETED ***** CP = 35629.970

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:44:20 NOV 04, 1995 CP= 35630.020
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+08

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 24
TIME/FREQUENCY= .15779E+08

TITLE=
DHLW WP at Time of Peak Temp. (.500001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (.500001 years)

*** WARNING *** CP= 35670.730 TIME= 13:45:16
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35670.770 TIME= 13:45:16
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 51
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 35718.940 TIME= 13:46:11
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35718.970 TIME= 13:46:11
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 63
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 35766.980 TIME= 13:47:05
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35767.010 TIME= 13:47:05
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 35786.250 TIME= 13:47:27
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35786.280 TIME= 13:47:27
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 82
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 35834.720 TIME= 13:48:21
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35834.750 TIME= 13:48:21
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 35843.200

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 13:48:30 NOV 04, 1995 CP= 35843.200
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7952 TEMP	t94i045	69.39	.3156E+11	133.1	.2525E+09
3 NSOL	7726 TEMP	t94o045	69.39	.3156E+11	133.2	.2525E+09
4 NSOL	7730 TEMP	h94i045	69.42	.3156E+11	140.3	.1262E+08
5 NSOL	7654 TEMP	c94i045	69.41	.3156E+11	137.8	.1578E+08
6 NSOL	7686 TEMP	h94o045	69.34	.3156E+11	128.8	.2525E+09
7 NSOL	7667 TEMP	s94i045	69.22	.3156E+11	114.4	.3156E+09
8 NSOL	7929 TEMP	s94o045	69.22	.3156E+11	114.3	.3156E+09
9 NSOL	8013 TEMP	i94i045	56.92	31.56	103.2	.6312E+09
10 NSOL	8030 TEMP	i94o045	56.59	31.56	103.1	.6312E+09
11 NSOL	8145 TEMP	o94o045	56.23	31.56	103.0	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:48:35 NOV 04, 1995 CP= 35845.430
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.079	125.141	134.667	131.567	115.575	87.6558
.20000E-05	125.076	125.139	134.664	131.565	115.572	87.6532
31.558	125.077	125.139	134.664	131.565	115.572	87.6532
.31558E+07	129.192	129.252	138.615	135.748	120.382	93.4429

.63116E+07	130.604	130.663	139.801	137.071	122.206	96.1009
.94673E+07	131.264	131.322	140.232	137.606	123.181	97.8236
.12623E+08	131.590	131.646	140.339	137.799	123.769	99.0883
.15779E+08	131.738	131.792	140.281	137.816	124.143	100.079
.18935E+08	131.781	131.834	140.132	137.732	124.385	100.887
.22090E+08	131.758	131.810	139.930	137.589	124.541	101.566
.25246E+08	131.716	131.767	139.723	137.434	124.660	102.161
.28402E+08	131.654	131.704	139.508	137.268	124.745	102.686
.31558E+08	131.583	131.633	139.295	137.099	124.810	103.159
.63115E+08	131.299	131.342	138.052	136.156	125.442	106.543
.94673E+08	131.687	131.727	137.951	136.219	126.329	108.867
.12623E+09	132.223	132.261	138.194	136.564	127.181	110.597
.15779E+09	132.673	132.710	138.435	136.879	127.857	111.899
.18935E+09	132.957	132.993	138.548	137.050	128.316	112.860
.22090E+09	133.086	133.120	138.527	137.076	128.590	113.565
.25246E+09	133.133	133.166	138.440	137.031	128.765	114.127
.28402E+09	132.882	132.915	138.056	136.681	128.617	114.339
.31558E+09	132.477	132.509	137.522	136.176	128.302	114.363
.63115E+09	127.002	127.027	130.955	129.835	123.535	112.420
.94673E+09	120.564	120.584	123.665	122.719	117.640	108.721
.12623E+10	114.065	114.081	116.504	115.700	111.586	104.397
.15779E+10	108.377	108.390	110.307	109.628	106.285	100.469
.18935E+10	103.636	103.646	105.177	104.604	101.875	97.1448
.22090E+10	99.6754	99.6837	100.915	100.433	98.1952	94.3278
.25246E+10	96.1286	96.1353	97.1345	96.7277	94.8794	91.6941
.28402E+10	93.2964	93.3019	94.1215	93.7774	92.2400	89.5963
.31558E+10	90.9697	90.9744	91.6542	91.3615	90.0718	87.8578
.63115E+10	80.9034	80.9048	81.1086	81.0109	80.6043	79.9116
.94673E+10	77.6318	77.6327	77.7682	77.7009	77.4258	76.9583
.12623E+11	75.9165	75.9172	76.0250	75.9704	75.7495	75.3746
.15779E+11	74.6288	74.6294	74.7173	74.6722	74.4908	74.1833
.18935E+11	73.3464	73.3469	73.4187	73.3813	73.2320	72.9792
.22090E+11	72.1957	72.1961	72.2549	72.2239	72.1009	71.8929
.25246E+11	71.1515	71.1518	71.2000	71.1743	71.0729	70.9015
.28402E+11	70.2159	70.2162	70.2558	70.2345	70.1508	70.0095
.31558E+11	69.3908	69.3910	69.4236	69.4059	69.3368	69.2202

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:35 NOV 04, 1995 CP= 35845.440
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP	8013 TEMP	8030 TEMP	8145 TEMP
	s94o045	i94i045	i94o045	o94o045
.10000E-05	87.4832	56.9257	56.5886	56.2286
.20000E-05	87.4806	56.9244	56.5873	56.2274
31.558	87.4806	56.9242	56.5871	56.2272
.31558E+07	93.2772	65.5217	65.1958	64.8467
.63116E+07	95.9408	69.8149	69.4988	69.1598
.94673E+07	97.6684	72.7719	72.4646	72.1349
.12623E+08	98.9375	75.0537	74.7545	74.4332
.15779E+08	99.9322	76.9142	76.6223	76.3088
.18935E+08	100.744	78.4831	78.1981	77.8917
.22090E+08	101.426	79.8379	79.5591	79.2594
.25246E+08	102.024	81.0364	80.7633	80.4697
.28402E+08	102.552	82.1074	81.8396	81.5516
.31558E+08	103.027	83.0761	82.8132	82.5304
.63115E+08	106.429	89.6995	89.4698	89.2224
.94673E+08	108.761	93.6821	93.4696	93.2407
.12623E+09	110.497	96.4245	96.2232	96.0055
.15779E+09	111.803	98.4353	98.2419	98.0322
.18935E+09	112.767	99.9430	99.7558	99.5526
.22090E+09	113.475	101.099	100.917	100.720
.25246E+09	114.039	102.055	101.879	101.686

.28402E+09	114.253	102.598	102.425	102.238
.31558E+09	114.279	102.915	102.746	102.564
.63115E+09	112.354	103.239	103.105	102.960
.94673E+09	108.667	101.194	101.087	100.970
.12623E+10	104.353	98.1557	98.0688	97.9750
.15779E+10	100.433	95.2857	95.2153	95.1396
.18935E+10	97.1159	92.8330	92.7757	92.7143
.22090E+10	94.3040	90.7337	90.6869	90.6368
.25246E+10	91.6745	88.6785	88.6400	88.5988
.28402E+10	89.5800	87.0558	87.0239	86.9898
.31558E+10	87.8442	85.7038	85.6771	85.6485
.63115E+10	79.9073	79.1968	79.1884	79.1795
.94673E+10	76.9554	76.4644	76.4588	76.4528
.12623E+11	75.3723	74.9733	74.9688	74.9640
.15779E+11	74.1814	73.8511	73.8474	73.8435
.18935E+11	72.9776	72.7033	72.7002	72.6970
.22090E+11	71.8916	71.6637	71.6612	71.6586
.25246E+11	70.9005	70.7112	70.7092	70.7070
.28402E+11	70.0086	69.8514	69.8497	69.8479
.31558E+11	69.2194	69.0888	69.0874	69.0859

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 35845.660 TIME= 13:48:35
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7947 TEMP	t04i045	69.38	.3156E+11	132.7	.2525E+09
3	NSOL	7718 TEMP	t04o045	69.38	.3156E+11	132.8	.2525E+09
4	NSOL	7720 TEMP	h04i045	69.42	.3156E+11	139.7	.1262E+08
5	NSOL	7642 TEMP	c04i045	69.40	.3156E+11	136.9	.1578E+08
6	NSOL	7679 TEMP	h04o045	69.33	.3156E+11	128.4	.2525E+09
7	NSOL	7662 TEMP	s04i045	69.21	.3156E+11	113.9	.3156E+09
8	NSOL	7927 TEMP	s04o045	69.21	.3156E+11	113.8	.3156E+09
9	NSOL	8008 TEMP	i04i045	55.90	31.56	103.0	.6312E+09
10	NSOL	8027 TEMP	i04o045	55.56	31.56	102.9	.6312E+09
11	NSOL	8142 TEMP	o04o045	55.21	31.56	102.8	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:37 NOV 04, 1995 CP= 35847.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.042	124.108	133.733	130.326	114.420	86.2325
.20000E-05	124.039	124.106	133.730	130.324	114.418	86.2300
31.558	124.039	124.106	133.730	130.324	114.418	86.2300
.31558E+07	128.264	128.329	137.805	134.652	119.368	92.1668
.63116E+07	129.735	129.799	139.055	136.052	121.267	94.9071
.94673E+07	130.437	130.498	139.530	136.642	122.295	96.6901
.12623E+08	130.796	130.856	139.671	136.879	122.925	98.0038
.15779E+08	130.971	131.030	139.642	136.932	123.334	99.0360
.18935E+08	131.038	131.096	139.517	136.880	123.607	99.8802
.22090E+08	131.037	131.093	139.335	136.764	123.789	100.590
.25246E+08	131.014	131.069	139.146	136.635	123.932	101.214
.28402E+08	130.969	131.023	138.948	136.490	124.038	101.765
.31558E+08	130.914	130.967	138.750	136.341	124.121	102.260
.63115E+08	130.732	130.779	137.603	135.527	124.876	105.795
.94673E+08	131.174	131.217	137.553	135.657	125.827	108.195
.12623E+09	131.744	131.785	137.827	136.045	126.718	109.972
.15779E+09	132.219	132.258	138.090	136.389	127.421	111.307
.18935E+09	132.521	132.559	138.220	136.582	127.900	112.293
.22090E+09	132.664	132.702	138.212	136.626	128.190	113.019
.25246E+09	132.724	132.761	138.136	136.595	128.379	113.599
.28402E+09	132.484	132.520	137.761	136.257	128.243	113.826
.31558E+09	132.087	132.122	137.234	135.762	127.937	113.862
.63115E+09	126.678	126.705	130.712	129.496	123.236	112.016
.94673E+09	120.288	120.310	123.454	122.431	117.387	108.386
.12623E+10	113.827	113.845	116.318	115.453	111.368	104.115
.15779E+10	108.173	108.187	110.144	109.416	106.098	100.232
.18935E+10	103.462	103.473	105.035	104.424	101.716	96.9461
.22090E+10	99.5269	99.5358	100.793	100.280	98.0598	94.1607
.25246E+10	96.0015	96.0088	97.0293	96.5964	94.7636	91.5529
.28402E+10	93.1877	93.1936	94.0309	93.6651	92.1409	89.4765
.31558E+10	90.8764	90.8814	91.5759	91.2652	89.9868	87.7557
.63115E+10	80.8707	80.8722	81.0805	80.9773	80.5746	79.8768
.94673E+10	77.6088	77.6098	77.7483	77.6773	77.4049	76.9341
.12623E+11	75.8977	75.8985	76.0087	75.9511	75.7323	75.3548
.15779E+11	74.6131	74.6138	74.7036	74.6561	74.4765	74.1669
.18935E+11	73.3333	73.3338	73.4072	73.3679	73.2201	72.9655
.22090E+11	72.1848	72.1852	72.2453	72.2127	72.0909	71.8815
.25246E+11	71.1423	71.1427	71.1920	71.1649	71.0646	70.8921
.28402E+11	70.2083	70.2086	70.2490	70.2266	70.1438	70.0016
.31558E+11	69.3845	69.3847	69.4180	69.3994	69.3310	69.2136

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:38 NOV 04, 1995 CP= 35847.600
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	86.0634	55.9030	55.5588	55.2065
.20000E-05	86.0609	55.9018	55.5576	55.2054
31.558	86.0609	55.9017	55.5575	55.2052
.31558E+07	92.0043	64.6545	64.3220	63.9800
.63116E+07	94.7502	69.0280	68.7057	68.3734
.94673E+07	96.5380	72.0412	71.7280	71.4046
.12623E+08	97.8560	74.3671	74.0622	73.7469
.15779E+08	98.8920	76.2637	75.9663	75.6587

.18935E+08	99.7398	77.8632	77.5728	77.2721
.22090E+08	100.453	79.2444	78.9604	78.6662
.25246E+08	101.080	80.4660	80.1878	79.8995
.28402E+08	101.633	81.5573	81.2846	81.0017
.31558E+08	102.131	82.5442	82.2765	81.9988
.63115E+08	105.683	89.2804	89.0467	88.8035
.94673E+08	108.092	93.3173	93.1012	92.8760
.12623E+09	109.874	96.0919	95.8871	95.6729
.15779E+09	111.213	98.1245	97.9278	97.7215
.18935E+09	112.202	99.6486	99.4583	99.2583
.22090E+09	112.931	100.818	100.633	100.439
.25246E+09	113.513	101.785	101.605	101.416
.28402E+09	113.742	102.337	102.161	101.977
.31558E+09	113.780	102.661	102.490	102.310
.63115E+09	111.951	103.039	102.903	102.760
.94673E+09	108.333	101.031	100.921	100.806
.12623E+10	104.073	98.0188	97.9305	97.8381
.15779E+10	100.198	95.1711	95.0995	95.0250
.18935E+10	96.9178	92.7369	92.6787	92.6183
.22090E+10	94.1375	90.6532	90.6056	90.5563
.25246E+10	91.5337	88.6104	88.5713	88.5308
.28402E+10	89.4606	86.9982	86.9657	86.9322
.31558E+10	87.7424	85.6547	85.6276	85.5995
.63115E+10	79.8726	79.1801	79.1716	79.1629
.94673E+10	76.9313	76.4527	76.4470	76.4411
.12623E+11	75.3526	74.9638	74.9592	74.9545
.15779E+11	74.1651	73.8431	73.8394	73.8355
.18935E+11	72.9640	72.6966	72.6936	72.6904
.22090E+11	71.8802	71.6582	71.6556	71.6530
.25246E+11	70.8910	70.7066	70.7045	70.7024
.28402E+11	70.0007	69.8476	69.8459	69.8441
.31558E+11	69.2129	69.0856	69.0842	69.0827

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35847.810 TIME= 13:48:38
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	63 TEMP	t01i135	69.38	.3156E+11	132.7 .2525E+09
3	NSOL	20 TEMP	t01o135	69.38	.3156E+11	132.8 .2525E+09
4	NSOL	22 TEMP	h01i135	69.42	.3156E+11	139.6 .1262E+08
5	NSOL	1 TEMP	c01i135	69.40	.3156E+11	136.9 .1578E+08

6 NSOL	11 TEMP	h01o135	69.33	.3156E+11	128.4	.2525E+09
7 NSOL	6 TEMP	s01i135	69.21	.3156E+11	113.8	.3156E+09
8 NSOL	58 TEMP	s01o135	69.21	.3156E+11	113.7	.3156E+09
9 NSOL	84 TEMP	i01i135	55.79	31.56	103.0	.6312E+09
10 NSOL	106 TEMP	i01o135	55.44	31.56	102.9	.6312E+09
11 NSOL	124 TEMP	o01o135	55.09	31.56	102.7	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:40 NOV 04, 1995 CP= 35849.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.033	124.099	133.707	130.287	114.366	86.1644
.20000E-05	124.030	124.097	133.705	130.284	114.363	86.1619
31.558	124.031	124.097	133.705	130.284	114.363	86.1619
.31558E+07	128.256	128.321	137.781	134.614	119.316	92.1018
.63116E+07	129.728	129.791	139.032	136.015	121.217	94.8446
.94673E+07	130.429	130.491	139.508	136.607	122.247	96.6296
.12623E+08	130.789	130.849	139.650	136.845	122.879	97.9451
.15779E+08	130.964	131.023	139.621	136.899	123.289	98.9788
.18935E+08	131.032	131.089	139.496	136.848	123.562	99.8244
.22090E+08	131.030	131.086	139.315	136.732	123.746	100.536
.25246E+08	131.007	131.062	139.127	136.603	123.889	101.161
.28402E+08	130.962	131.016	138.928	136.459	123.996	101.713
.31558E+08	130.907	130.960	138.731	136.311	124.081	102.209
.63115E+08	130.727	130.773	137.587	135.501	124.841	105.750
.94673E+08	131.169	131.212	137.538	135.633	125.794	108.154
.12623E+09	131.740	131.780	137.812	136.022	126.687	109.934
.15779E+09	132.214	132.253	138.076	136.367	127.391	111.270
.18935E+09	132.516	132.555	138.207	136.561	127.872	112.258
.22090E+09	132.660	132.697	138.199	136.605	128.162	112.985
.25246E+09	132.720	132.757	138.124	136.576	128.353	113.566
.28402E+09	132.480	132.515	137.749	136.238	128.217	113.793
.31558E+09	132.083	132.118	137.222	135.744	127.911	113.830
.63115E+09	126.674	126.702	130.703	129.480	123.215	111.991
.94673E+09	120.285	120.307	123.446	122.418	117.370	108.365
.12623E+10	113.825	113.842	116.311	115.443	111.354	104.098
.15779E+10	108.171	108.185	110.139	109.407	106.087	100.218
.18935E+10	103.460	103.471	105.031	104.417	101.707	96.9344
.22090E+10	99.5254	99.5343	100.789	100.274	98.0520	94.1510
.25246E+10	96.0002	96.0075	97.0261	96.5915	94.7571	91.5448
.28402E+10	93.1866	93.1925	94.0282	93.6610	92.1355	89.4697
.31558E+10	90.8755	90.8804	91.5736	91.2618	89.9822	87.7500
.63115E+10	80.8704	80.8719	81.0798	80.9762	80.5731	79.8750
.94673E+10	77.6086	77.6096	77.7478	77.6765	77.4038	76.9328
.12623E+11	75.8975	75.8983	76.0082	75.9505	75.7315	75.3538
.15779E+11	74.6130	74.6136	74.7033	74.6556	74.4758	74.1661
.18935E+11	73.3332	73.3337	73.4070	73.3674	73.2195	72.9648
.22090E+11	72.1847	72.1851	72.2451	72.2123	72.0905	71.8809
.25246E+11	71.1423	71.1426	71.1918	71.1646	71.0642	70.8916
.28402E+11	70.2083	70.2085	70.2489	70.2264	70.1435	70.0012
.31558E+11	69.3844	69.3847	69.4178	69.3992	69.3307	69.2133

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:40 NOV 04, 1995 CP= 35849.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	85.9952	55.7900	55.4452	55.0909
.20000E-05	85.9927	55.7888	55.4440	55.0897
.31.558	85.9927	55.7886	55.4439	55.0895
.31558E+07	91.9393	64.5505	64.2174	63.8734
.63116E+07	94.6875	68.9296	68.6068	68.2725
.94673E+07	96.4773	71.9473	71.6335	71.3082
.12623E+08	97.7971	74.2768	73.9714	73.6543
.15779E+08	98.8347	76.1766	75.8787	75.5693
.18935E+08	99.6839	77.7789	77.4880	77.1856
.22090E+08	100.399	79.1627	78.8782	78.5823
.25246E+08	101.026	80.3864	80.1078	79.8179
.28402E+08	101.581	81.4798	81.2066	80.9222
.31558E+08	102.080	82.4686	82.2004	81.9211
.63115E+08	105.638	89.2169	88.9827	88.7382
.94673E+08	108.051	93.2599	93.0434	92.8169
.12623E+09	109.836	96.0382	95.8330	95.6176
.15779E+09	111.176	98.0734	97.8763	97.6689
.18935E+09	112.167	99.5995	99.4088	99.2077
.22090E+09	112.896	100.771	100.585	100.390
.25246E+09	113.479	101.739	101.559	101.369
.28402E+09	113.709	102.292	102.116	101.931
.31558E+09	113.748	102.618	102.446	102.265
.63115E+09	111.925	103.005	102.868	102.724
.94673E+09	108.312	101.003	100.893	100.778
.12623E+10	104.055	97.9960	97.9076	97.8147
.15779E+10	100.184	95.1524	95.0808	95.0058
.18935E+10	96.9061	92.7216	92.6633	92.6025
.22090E+10	94.1278	90.6405	90.5929	90.5433
.25246E+10	91.5256	88.5999	88.5607	88.5200
.28402E+10	89.4538	86.9894	86.9569	86.9231
.31558E+10	87.7367	85.6473	85.6201	85.5919
.63115E+10	79.8708	79.1777	79.1692	79.1604
.94673E+10	76.9300	76.4511	76.4454	76.4395
.12623E+11	75.3515	74.9625	74.9579	74.9532
.15779E+11	74.1642	73.8421	73.8383	73.8344
.18935E+11	72.9633	72.6957	72.6926	72.6895
.22090E+11	71.8796	71.6574	71.6549	71.6523
.25246E+11	70.8905	70.7060	70.7039	70.7018
.28402E+11	70.0004	69.8471	69.8454	69.8436
.31558E+11	69.2126	69.0852	69.0838	69.0823

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 35849.970 TIME= 13:48:40
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045

VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045

VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045

VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045

VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045

VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	69.26	.3156E+11	119.8	.2840E+09
3 NSOL	7722 TEMP	tb4o045	69.26	.3156E+11	119.8	.2840E+09
4 NSOL	7724 TEMP	hb4i045	69.23	.3156E+11	116.7	.2840E+09
5 NSOL	7650 TEMP	cb4i045	69.21	.3156E+11	114.4	.3156E+09
6 NSOL	7682 TEMP	hb4o045	69.19	.3156E+11	111.9	.3156E+09
7 NSOL	7666 TEMP	sb4i045	69.16	.3156E+11	108.9	.3156E+09
8 NSOL	7928 TEMP	sb4o045	69.16	.3156E+11	108.9	.3156E+09
9 NSOL	8012 TEMP	ib4i045	52.60	31.56	101.8	.6312E+09
10 NSOL	8029 TEMP	ib4o045	52.33	31.56	101.7	.6312E+09
11 NSOL	8144 TEMP	ob4o045	52.04	31.56	101.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:42 NOV 04, 1995 CP= 35851.900
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	97.9930	97.9141	91.6768	86.9091	81.3333	74.9051
.20000E-05	97.9899	97.9110	91.6739	86.9064	81.3309	74.9029
31.558	97.9899	97.9109	91.6739	86.9064	81.3309	74.9028
.31558E+07	103.554	103.477	97.4642	92.9314	87.6462	81.5413
.63116E+07	105.948	105.873	100.053	95.6936	90.6157	84.7453
.94673E+07	107.416	107.344	101.695	97.4804	92.5753	86.9017
.12623E+08	108.442	108.371	102.879	98.7906	94.0368	88.5357
.15779E+08	109.211	109.142	103.790	99.8158	95.1965	89.8498
.18935E+08	109.812	109.745	104.524	100.651	96.1531	90.9461
.22090E+08	110.298	110.232	105.131	101.352	96.9640	91.8844
.25246E+08	110.717	110.653	105.660	101.966	97.6780	92.7140
.28402E+08	111.079	111.016	106.124	102.508	98.3112	93.4534
.31558E+08	111.400	111.338	106.539	102.994	98.8820	94.1219
.63115E+08	113.757	113.703	109.531	106.468	102.921	98.8155
.94673E+08	115.551	115.501	111.653	108.842	105.590	101.824
.12623E+09	116.959	116.911	113.261	110.604	107.534	103.978
.15779E+09	118.031	117.985	114.476	111.929	108.987	105.579
.18935E+09	118.806	118.761	115.364	112.905	110.064	106.773
.22090E+09	119.349	119.305	116.006	113.620	110.866	107.674
.25246E+09	119.765	119.722	116.509	114.189	111.512	108.409
.28402E+09	119.837	119.796	116.664	114.402	111.793	108.769
.31558E+09	119.727	119.687	116.631	114.423	111.877	108.926
.63115E+09	116.663	116.631	114.204	112.438	110.399	108.041
.94673E+09	112.086	112.060	110.121	108.692	107.039	105.133
.12623E+10	107.072	107.052	105.494	104.331	102.982	101.431
.15779E+10	102.605	102.588	101.332	100.383	99.2799	98.0147
.18935E+10	98.8611	98.8480	97.8295	97.0520	96.1461	95.1096
.22090E+10	95.7157	95.7052	94.8747	94.2352	93.4887	92.6361
.25246E+10	92.8251	92.8164	92.1341	91.6045	90.9853	90.2792
.28402E+10	90.5263	90.5192	89.9542	89.5128	88.9960	88.4073
.31558E+10	88.6306	88.6246	88.1525	87.7815	87.3467	86.8519
.63115E+10	80.1442	80.1424	79.9959	79.8780	79.7390	79.5815
.94673E+10	77.1129	77.1117	77.0132	76.9331	76.8386	76.7316
.12623E+11	75.4975	75.4966	75.4177	75.3533	75.2771	75.1910
.15779E+11	74.2835	74.2827	74.2181	74.1652	74.1025	74.0317
.18935E+11	73.0610	73.0604	73.0073	72.9637	72.9120	72.8536

.22090E+11	71.9598	71.9593	71.9156	71.8796	71.8370	71.7888
.25246E+11	70.9564	70.9559	70.9200	70.8903	70.8551	70.8153
.28402E+11	70.0545	70.0541	70.0246	70.0000	69.9709	69.9380
.31558E+11	69.2571	69.2568	69.2324	69.2121	69.1880	69.1609

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:42 NOV 04, 1995 CP= 35851.910
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP	8012 TEMP	8029 TEMP	8144 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	74.8348	52.6043	52.3269	52.0433
.20000E-05	74.8326	52.6033	52.3259	52.0423
31.558	74.8325	52.6031	52.3257	52.0421
.31558E+07	81.4748	61.4796	61.2112	60.9374
.63116E+07	84.6815	65.9624	65.7019	65.4367
.94673E+07	86.8401	69.0721	68.8188	68.5613
.12623E+08	88.4759	71.4851	71.2383	70.9877
.15779E+08	89.7917	73.4607	73.2199	72.9756
.18935E+08	90.8896	75.1323	74.8970	74.6586
.22090E+08	91.8293	76.5797	76.3496	76.1165
.25246E+08	92.6602	77.8615	77.6361	77.4079
.28402E+08	93.4008	79.0084	78.7873	78.5636
.31558E+08	94.0704	80.0467	79.8296	79.6101
.63115E+08	98.7713	87.1290	86.9391	86.7478
.94673E+08	101.784	91.3467	91.1710	90.9942
.12623E+09	103.939	94.2329	94.0661	93.8982
.15779E+09	105.542	96.3448	96.1845	96.0230
.18935E+09	106.738	97.9316	97.7765	97.6201
.22090E+09	107.640	99.1542	99.0036	98.8516
.25246E+09	108.375	100.169	100.022	99.8744
.28402E+09	108.736	100.763	100.620	100.476
.31558E+09	108.894	101.127	100.987	100.846
.63115E+09	108.015	101.818	101.707	101.595
.94673E+09	105.113	100.045	99.9556	99.8658
.12623E+10	101.415	97.2177	97.1458	97.0736
.15779E+10	98.0011	94.5184	94.4601	94.4018
.18935E+10	95.0984	92.2030	92.1556	92.1082
.22090E+10	92.6269	90.2145	90.1758	90.1372
.25246E+10	90.2716	88.2476	88.2157	88.1839
.28402E+10	88.4010	86.6960	86.6696	86.6432
.31558E+10	86.8465	85.4010	85.3789	85.3568
.63115E+10	79.5798	79.0997	79.0928	79.0859
.94673E+10	76.7304	76.3982	76.3935	76.3889
.12623E+11	75.1900	74.9200	74.9162	74.9125
.15779E+11	74.0309	73.8071	73.8041	73.8010
.18935E+11	72.8529	72.6670	72.6645	72.6620
.22090E+11	71.7882	71.6337	71.6317	71.6296
.25246E+11	70.8148	70.6865	70.6848	70.6831
.28402E+11	69.9376	69.8309	69.8295	69.8281
.31558E+11	69.1606	69.0719	69.0707	69.0695

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35852.120 TIME= 13:48:42
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1033 TEMP	t01i135	69.26	.3156E+11	119.8	.2840E+09
3	NSOL	733 TEMP	t01o135	69.26	.3156E+11	119.8	.2840E+09
4	NSOL	735 TEMP	h01i135	69.23	.3156E+11	116.7	.2840E+09
5	NSOL	679 TEMP	c01i135	69.21	.3156E+11	114.4	.3156E+09
6	NSOL	704 TEMP	h01o135	69.19	.3156E+11	111.9	.3156E+09
7	NSOL	691 TEMP	s01i135	69.16	.3156E+11	108.9	.3156E+09
8	NSOL	1018 TEMP	s01o135	69.16	.3156E+11	108.9	.3156E+09
9	NSOL	1292 TEMP	i01i135	52.51	31.56	101.8	.6312E+09
10	NSOL	1307 TEMP	i01o135	52.24	31.56	101.7	.6312E+09
11	NSOL	2078 TEMP	o01o135	51.95	31.56	101.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:44 NOV 04, 1995 CP= 35854.060
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	97.9819	97.9028	91.6566	86.8788	81.2901	74.8474
.20000E-05	97.9788	97.8997	91.6538	86.8761	81.2877	74.8452
31.558	97.9788	97.8997	91.6537	86.8761	81.2877	74.8451
.31558E+07	103.544	103.467	97.4455	92.9032	87.6055	81.4867
.63116E+07	105.938	105.863	100.035	95.6666	90.5768	84.6929
.94673E+07	107.407	107.334	101.678	97.4545	92.5379	86.8511
.12623E+08	108.433	108.362	102.862	98.7656	94.0006	88.4866
.15779E+08	109.202	109.133	103.774	99.7916	95.1614	89.8021
.18935E+08	109.804	109.736	104.508	100.628	96.1190	90.8997
.22090E+08	110.290	110.224	105.116	101.329	96.9308	91.8391
.25246E+08	110.710	110.645	105.645	101.944	97.6455	92.6698
.28402E+08	111.072	111.008	106.110	102.486	98.2795	93.4102
.31558E+08	111.392	111.330	106.525	102.973	98.8509	94.0795
.63115E+08	113.751	113.697	109.519	106.450	102.895	98.7791
.94673E+08	115.545	115.495	111.642	108.825	105.565	101.791
.12623E+09	116.954	116.906	113.251	110.589	107.511	103.946
.15779E+09	118.026	117.980	114.466	111.914	108.965	105.549
.18935E+09	118.801	118.756	115.355	112.890	110.044	106.744
.22090E+09	119.344	119.300	115.997	113.606	110.846	107.646
.25246E+09	119.760	119.718	116.501	114.176	111.492	108.381
.28402E+09	119.833	119.791	116.655	114.389	111.774	108.742
.31558E+09	119.723	119.683	116.622	114.411	111.858	108.900
.63115E+09	116.659	116.627	114.197	112.428	110.384	108.020

.94673E+09	112.083	112.057	110.115	108.684	107.027	105.116
.12623E+10	107.070	107.049	105.489	104.324	102.972	101.417
.15779E+10	102.602	102.586	101.329	100.378	99.2715	98.0033
.18935E+10	98.8592	98.8462	97.8263	97.0472	96.1392	95.1002
.22090E+10	95.7142	95.7036	94.8720	94.2312	93.4830	92.6283
.25246E+10	92.8238	92.8151	92.1319	91.6012	90.9806	90.2728
.28402E+10	90.5252	90.5181	89.9523	89.5100	88.9920	88.4019
.31558E+10	88.6296	88.6237	88.1508	87.7791	87.3433	86.8473
.63115E+10	80.1439	80.1421	79.9954	79.8772	79.7379	79.5801
.94673E+10	77.1127	77.1115	77.0128	76.9326	76.8378	76.7306
.12623E+11	75.4974	75.4964	75.4174	75.3528	75.2765	75.1902
.15779E+11	74.2834	74.2826	74.2179	74.1648	74.1020	74.0310
.18935E+11	73.0609	73.0603	73.0071	72.9634	72.9116	72.8530
.22090E+11	71.9597	71.9592	71.9155	71.8794	71.8366	71.7883
.25246E+11	70.9563	70.9558	70.9199	70.8901	70.8548	70.8149
.28402E+11	70.0544	70.0541	70.0244	69.9998	69.9706	69.9377
.31558E+11	69.2571	69.2568	69.2323	69.2120	69.1878	69.1606

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:44 NOV 04, 1995 CP= 35854.070
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	74.7770	52.5161	52.2385	51.9538
.20000E-05	74.7748	52.5151	52.2376	51.9528
31.558	74.7747	52.5149	52.2374	51.9526
.31558E+07	81.4200	61.3984	61.1298	60.8551
.63116E+07	84.6289	65.8856	65.6250	65.3588
.94673E+07	86.7893	68.9988	68.7454	68.4869
.12623E+08	88.4267	71.4147	71.1677	70.9162
.15779E+08	89.7439	73.3927	73.1518	72.9067
.18935E+08	90.8431	75.0666	74.8312	74.5919
.22090E+08	91.7839	76.5160	76.2857	76.0518
.25246E+08	92.6159	77.7996	77.5740	77.3449
.28402E+08	93.3574	78.9481	78.7269	78.5023
.31558E+08	94.0279	79.9878	79.7706	79.5502
.63115E+08	98.7348	87.0796	86.8896	86.6976
.94673E+08	101.750	91.3020	91.1262	90.9489
.12623E+09	103.908	94.1911	94.0242	93.8558
.15779E+09	105.512	96.3051	96.1447	95.9827
.18935E+09	106.709	97.8934	97.7383	97.5814
.22090E+09	107.612	99.1174	98.9667	98.8142
.25246E+09	108.348	100.133	99.9866	99.8381
.28402E+09	108.710	100.728	100.585	100.441
.31558E+09	108.868	101.093	100.953	100.812
.63115E+09	107.994	101.791	101.680	101.568
.94673E+09	105.096	100.023	99.9339	99.8438
.12623E+10	101.401	97.2001	97.1281	97.0557
.15779E+10	97.9897	94.5040	94.4457	94.3872
.18935E+10	95.0890	92.1912	92.1437	92.0962
.22090E+10	92.6191	90.2048	90.1660	90.1272
.25246E+10	90.2651	88.2395	88.2076	88.1757
.28402E+10	88.3956	86.6892	86.6628	86.6363
.31558E+10	86.8420	85.3953	85.3731	85.3510
.63115E+10	79.5784	79.0978	79.0909	79.0840
.94673E+10	76.7294	76.3969	76.3923	76.3876
.12623E+11	75.1892	74.9189	74.9152	74.9115
.15779E+11	74.0302	73.8063	73.8032	73.8002
.18935E+11	72.8524	72.6663	72.6638	72.6613
.22090E+11	71.7878	71.6331	71.6311	71.6290
.25246E+11	70.8145	70.6860	70.6843	70.6826
.28402E+11	69.9373	69.8306	69.8291	69.8277

.31558E+11 69.1603 69.0715 69.0704 69.0692

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 35854.280 TIME= 13:48:44
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	8470 TEMP	tt4i045	69.27	.3156E+11	121.1 .2840E+09
3	NSOL	8270 TEMP	tt4o045	69.27	.3156E+11	121.1 .2840E+09
4	NSOL	8272 TEMP	ht4i045	69.34	.3156E+11	130.1 .2525E+09
5	NSOL	8234 TEMP	ct4i045	69.33	.3156E+11	130.1 .2525E+09
6	NSOL	8251 TEMP	ht4o045	69.26	.3156E+11	122.0 .2840E+09
7	NSOL	8242 TEMP	st4i045	67.21	31.56	106.3 .3156E+09
8	NSOL	8460 TEMP	st4o045	67.10	31.56	106.3 .3156E+09
9	NSOL	8556 TEMP	it4i045	47.38	31.56	100.6 .6312E+09
10	NSOL	8566 TEMP	it4o045	47.17	31.56	100.5 .6312E+09
11	NSOL	8691 TEMP	ot4o045	46.94	31.56	100.4 .6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:46 NOV 04, 1995 CP= 35856.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	99.8030	99.8492	116.484	115.911	99.6121	67.2160
.20000E-05	99.8004	99.8466	116.482	115.909	99.6102	67.2145
31.558	99.8004	99.8466	116.482	115.909	99.6101	67.2144
.31558E+07	105.466	105.511	121.651	121.233	105.668	74.6520
.63116E+07	107.872	107.916	123.602	123.260	108.253	78.3127
.94673E+07	109.330	109.373	124.637	124.344	109.815	80.8061
.12623E+08	110.337	110.379	125.256	124.999	110.893	82.7143
.15779E+08	111.084	111.124	125.645	125.416	111.691	84.2605
.18935E+08	111.662	111.702	125.893	125.687	112.308	85.5580
.22090E+08	112.124	112.163	126.049	125.863	112.800	86.6741

.25246E+08	112.520	112.558	126.165	125.995	113.219	87.6612
.28402E+08	112.859	112.897	126.245	126.090	113.578	88.5426
.31558E+08	113.158	113.195	126.304	126.160	113.892	89.3399
.63115E+08	115.354	115.386	126.872	126.807	116.174	94.8634
.94673E+08	117.054	117.084	127.725	127.700	117.918	98.2907
.12623E+09	118.402	118.431	128.557	128.558	119.297	100.697
.15779E+09	119.430	119.458	129.216	129.235	120.343	102.474
.18935E+09	120.168	120.195	129.656	129.688	121.091	103.804
.22090E+09	120.679	120.705	129.910	129.950	121.603	104.815
.25246E+09	121.066	121.091	130.065	130.111	121.988	105.645
.28402E+09	121.110	121.135	129.890	129.939	122.019	106.084
.31558E+09	120.973	120.997	129.545	129.593	121.864	106.311
.63115E+09	117.670	117.690	124.492	124.515	118.347	105.954
.94673E+09	112.900	112.915	118.353	118.347	113.381	103.423
.12623E+10	107.730	107.742	112.105	112.078	108.055	100.012
.15779E+10	103.136	103.146	106.662	106.623	103.355	96.8339
.18935E+10	99.2928	99.3010	102.151	102.108	99.4398	94.1258
.22090E+10	96.0676	96.0743	98.3986	98.3551	96.1669	91.8150
.25246E+10	93.1133	93.1188	95.0288	94.9869	93.1794	89.5891
.28402E+10	90.7644	90.7690	92.3515	92.3130	90.8091	87.8252
.31558E+10	88.8291	88.8329	90.1563	90.1214	88.8596	86.3578
.63115E+10	80.2044	80.2056	80.6172	80.6026	80.2040	79.4166
.94673E+10	77.1528	77.1536	77.4308	77.4200	77.1500	76.6172
.12623E+11	75.5292	75.5299	75.7519	75.7428	75.5258	75.0979
.15779E+11	74.3093	74.3098	74.4918	74.4841	74.3058	73.9545
.18935E+11	73.0820	73.0825	73.2320	73.2254	73.0786	72.7894
.22090E+11	71.9769	71.9773	72.1002	72.0947	71.9737	71.7354
.25246E+11	70.9703	70.9706	71.0719	71.0672	70.9674	70.7709
.28402E+11	70.0659	70.0662	70.1496	70.1456	70.0632	69.9011
.31558E+11	69.2665	69.2667	69.3355	69.3322	69.2641	69.1302

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:46 NOV 04, 1995 CP= 35856.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1055	47.3799	47.1683	46.9414
.20000E-05	67.1039	47.3791	47.1676	46.9407
31.558	67.1039	47.3790	47.1675	46.9405
.31558E+07	74.5468	56.9239	56.7198	56.5002
.63116E+07	78.2114	61.7690	61.5712	61.3582
.94673E+07	80.7081	65.1403	64.9482	64.7412
.12623E+08	82.6192	67.7620	67.5751	67.3734
.15779E+08	84.1679	69.9116	69.7293	69.5326
.18935E+08	85.4678	71.7321	71.5542	71.3620
.22090E+08	86.5860	73.3096	73.1356	72.9477
.25246E+08	87.5751	74.7055	74.5352	74.3511
.28402E+08	88.4583	75.9542	75.7872	75.6067
.31558E+08	89.2572	77.0840	76.9201	76.7429
.63115E+08	94.7919	84.7393	84.5963	84.4415
.94673E+08	98.2251	89.2356	89.1035	88.9603
.12623E+09	100.635	92.2874	92.1619	92.0258
.15779E+09	102.415	94.5132	94.3926	94.2616
.18935E+09	103.746	96.1862	96.0696	95.9427
.22090E+09	104.759	97.4788	97.3655	97.2422
.25246E+09	105.590	98.5530	98.4428	98.3225
.28402E+09	106.031	99.1970	99.0895	98.9722
.31558E+09	106.260	99.6045	99.4997	99.3852
.63115E+09	105.913	100.622	100.538	100.447
.94673E+09	103.390	99.0752	99.0083	98.9353
.12623E+10	99.9848	96.4202	96.3661	96.3074
.15779E+10	96.8120	93.8598	93.8160	93.7686

.18935E+10	94.1080	91.6577	91.6220	91.5835
.22090E+10	91.8003	89.7617	89.7326	89.7012
.25246E+10	89.5770	87.8687	87.8447	87.8188
.28402E+10	87.8151	86.3775	86.3577	86.3362
.31558E+10	86.3493	85.1314	85.1148	85.0968
.63115E+10	79.4139	79.0107	79.0055	78.9999
.94673E+10	76.6154	76.3367	76.3332	76.3294
.12623E+11	75.0964	74.8700	74.8671	74.8641
.15779E+11	73.9533	73.7657	73.7634	73.7609
.18935E+11	72.7884	72.6325	72.6306	72.6286
.22090E+11	71.7346	71.6051	71.6035	71.6019
.25246E+11	70.7702	70.6627	70.6614	70.6600
.28402E+11	69.9006	69.8112	69.8101	69.8090
.31558E+11	69.1297	69.0554	69.0545	69.0536

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35856.430 TIME= 13:48:46
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1206 TEMP	t01i135	69.27	.3156E+11	121.1	.2840E+09
3	NSOL	885 TEMP	t01o135	69.27	.3156E+11	121.1	.2840E+09
4	NSOL	887 TEMP	h01i135	69.34	.3156E+11	130.1	.2525E+09
5	NSOL	849 TEMP	c01i135	69.33	.3156E+11	130.1	.2525E+09
6	NSOL	866 TEMP	h01o135	69.26	.3156E+11	122.0	.2840E+09
7	NSOL	857 TEMP	s01i135	67.15	31.56	106.3	.3156E+09
8	NSOL	1196 TEMP	s01o135	67.04	31.56	106.2	.3156E+09
9	NSOL	1394 TEMP	i01i135	47.30	31.56	100.6	.6312E+09
10	NSOL	1404 TEMP	i01o135	47.08	31.56	100.5	.6312E+09
11	NSOL	2146 TEMP	o01o135	46.86	31.56	100.4	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:48 NOV 04, 1995 CP= 35858.370
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.7964	99.8425	116.462	115.874	99.5627	67.1547
.20000E-05	99.7939	99.8400	116.459	115.872	99.5608	67.1532
31.558	99.7939	99.8400	116.459	115.872	99.5608	67.1531
.31558E+07	105.460	105.505	121.630	121.198	105.621	74.5945
.63116E+07	107.867	107.911	123.582	123.227	108.209	78.2577
.94673E+07	109.325	109.367	124.617	124.312	109.772	80.7532
.12623E+08	110.332	110.374	125.237	124.968	110.852	82.6632
.15779E+08	111.079	111.119	125.626	125.386	111.651	84.2110
.18935E+08	111.657	111.697	125.875	125.658	112.269	85.5099
.22090E+08	112.119	112.158	126.032	125.834	112.761	86.6272
.25246E+08	112.515	112.553	126.148	125.967	113.182	87.6155
.28402E+08	112.855	112.892	126.229	126.062	113.541	88.4980
.31558E+08	113.153	113.190	126.287	126.134	113.856	89.2962
.63115E+08	115.350	115.382	126.858	126.784	116.144	94.8261
.94673E+08	117.050	117.080	127.712	127.679	117.891	98.2568
.12623E+09	118.399	118.428	128.544	128.538	119.270	100.665
.15779E+09	119.427	119.455	129.204	129.216	120.318	102.444
.18935E+09	120.165	120.192	129.645	129.670	121.066	103.775
.22090E+09	120.676	120.702	129.899	129.932	121.579	104.787
.25246E+09	121.063	121.088	130.054	130.094	121.965	105.617
.28402E+09	121.107	121.132	129.880	129.922	121.997	106.058
.31558E+09	120.971	120.995	129.535	129.577	121.842	106.285
.63115E+09	117.668	117.688	124.484	124.502	118.330	105.933
.94673E+09	112.898	112.913	118.346	118.337	113.366	103.406
.12623E+10	107.728	107.741	112.100	112.069	108.044	99.9978
.15779E+10	103.135	103.145	106.658	106.616	103.345	96.8225
.18935E+10	99.2917	99.2999	102.148	102.102	99.4320	94.1164
.22090E+10	96.0667	96.0734	98.3955	98.3501	96.1604	91.8072
.25246E+10	93.1125	93.1181	95.0261	94.9828	93.1739	89.5826
.28402E+10	90.7638	90.7683	92.3493	92.3095	90.8046	87.8198
.31558E+10	88.8285	88.8323	90.1544	90.1185	88.8557	86.3532
.63115E+10	80.2042	80.2054	80.6166	80.6016	80.2028	79.4151
.94673E+10	77.1527	77.1535	77.4304	77.4193	77.1491	76.6162
.12623E+11	75.5291	75.5297	75.7516	75.7423	75.5251	75.0971
.15779E+11	74.3092	74.3097	74.4915	74.4836	74.3053	73.9538
.18935E+11	73.0819	73.0824	73.2317	73.2250	73.0781	72.7888
.22090E+11	71.9768	71.9772	72.1000	72.0944	71.9733	71.7349
.25246E+11	70.9703	70.9706	71.0717	71.0669	70.9671	70.7705
.28402E+11	70.0659	70.0661	70.1494	70.1454	70.0630	69.9008
.31558E+11	69.2664	69.2666	69.3354	69.3320	69.2639	69.1299

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:48 NOV 04, 1995 CP= 35858.380
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.0441	47.2972	47.0855	46.8583
.20000E-05	67.0426	47.2965	47.0848	46.8576
31.558	67.0425	47.2964	47.0847	46.8575
.31558E+07	74.4892	56.8487	56.6446	56.4247
.63116E+07	78.1563	61.6983	61.5005	61.2873
.94673E+07	80.6551	65.0731	64.8810	64.6737
.12623E+08	82.5680	67.6977	67.5107	67.3088
.15779E+08	84.1183	69.8497	69.6674	69.4705
.18935E+08	85.4196	71.6724	71.4944	71.3020
.22090E+08	86.5391	73.2518	73.0777	72.8896
.25246E+08	87.5294	74.6494	74.4790	74.2947
.28402E+08	88.4136	75.8996	75.7326	75.5519
.31558E+08	89.2135	77.0308	76.8668	76.6895

.63115E+08	94.7546	84.6951	84.5520	84.3971
.94673E+08	98.1911	89.1959	89.0637	88.9204
.12623E+09	100.603	92.2503	92.1248	91.9886
.15779E+09	102.384	94.4781	94.3574	94.2263
.18935E+09	103.717	96.1525	96.0358	95.9088
.22090E+09	104.731	97.4463	97.3330	97.2095
.25246E+09	105.563	98.5215	98.4112	98.2909
.28402E+09	106.005	99.1663	99.0589	98.9414
.31558E+09	106.233	99.5747	99.4698	99.3552
.63115E+09	105.892	100.598	100.515	100.424
.94673E+09	103.373	99.0562	98.9893	98.9162
.12623E+10	99.9709	96.4046	96.3506	96.2918
.15779E+10	96.8006	93.8471	93.8033	93.7559
.18935E+10	94.0986	91.6472	91.6116	91.5730
.22090E+10	91.7925	89.7531	89.7240	89.6925
.25246E+10	89.5705	87.8615	87.8375	87.8116
.28402E+10	87.8097	86.3715	86.3516	86.3302
.31558E+10	86.3447	85.1264	85.1097	85.0918
.63115E+10	79.4124	79.0091	79.0039	78.9983
.94673E+10	76.6144	76.3356	76.3321	76.3283
.12623E+11	75.0956	74.8690	74.8662	74.8632
.15779E+11	73.9526	73.7649	73.7626	73.7602
.18935E+11	72.7878	72.6319	72.6300	72.6280
.22090E+11	71.7341	71.6046	71.6030	71.6014
.25246E+11	70.7699	70.6623	70.6610	70.6596
.28402E+11	69.9002	69.8108	69.8098	69.8086
.31558E+11	69.1294	69.0551	69.0543	69.0533

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 35858.590 TIME= 13:48:48
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135

VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135

VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135

VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135

VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135

VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135

VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135

VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135

VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135

VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135

VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135

VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135

VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135

VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2751 TEMP	ot1o135	32.16	31.56	96.45	.6312E+09
3 NSOL	2714 TEMP	ot1i135	32.20	31.56	96.46	.6312E+09
4 NSOL	1968 TEMP	it1o135	44.44	31.56	100.0	.6312E+09
5 NSOL	1931 TEMP	it1i135	44.46	31.56	100.0	.6312E+09
6 NSOL	1088 TEMP	st1o135	46.26	31.56	100.2	.6312E+09
7 NSOL	1082 TEMP	st1i135	46.28	31.56	100.2	.6312E+09
8 NSOL	849 TEMP	ht1i135	69.33	.3156E+11	130.1	.2525E+09
9 NSOL	853 TEMP	gt1i135	69.37	.3156E+11	133.3	.2525E+09
10 NSOL	1 TEMP	c01i135	69.40	.3156E+11	136.9	.1578E+08
11 NSOL	683 TEMP	gb1i135	69.41	.3156E+11	137.8	.1578E+08
12 NSOL	684 TEMP	gb1h135	69.39	.3156E+11	136.5	.1578E+08
13 NSOL	679 TEMP	sb1i135	69.21	.3156E+11	114.4	.3156E+09
14 NSOL	962 TEMP	sb1o135	69.21	.3156E+11	114.3	.3156E+09
15 NSOL	1640 TEMP	ib1i135	56.94	31.56	103.5	.6312E+09
16 NSOL	1677 TEMP	ib1o135	56.28	31.56	103.2	.6312E+09
17 NSOL	2751 TEMP	ob1o135	32.16	31.56	96.45	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.1622	32.2009	44.4432	44.4584	46.2574	46.2784
.20000E-05	32.1622	32.2008	44.4427	44.4579	46.2567	46.2778
31.558	32.1621	32.2007	44.4426	44.4577	46.2566	46.2776
.31558E+07	43.1699	43.2048	54.4183	54.4313	55.8022	55.8214
.63116E+07	48.8831	48.9158	59.4885	59.5002	60.6715	60.6896
.94673E+07	52.9133	52.9442	63.0184	63.0293	64.0690	64.0862
.12623E+08	56.0778	56.1073	65.7646	65.7748	66.7157	66.7323
.15779E+08	58.6904	58.7187	68.0165	68.0262	68.8897	68.9056
.18935E+08	60.9147	60.9420	69.9238	69.9330	70.7333	70.7487
.22090E+08	62.8499	62.8762	71.5763	71.5850	72.3325	72.3474
.25246E+08	64.5633	64.5888	73.0378	73.0462	73.7487	73.7631
.28402E+08	66.0979	66.1227	74.3447	74.3527	75.0162	75.0303
.31558E+08	67.4868	67.5109	75.5264	75.5342	76.1636	76.1774
.63115E+08	76.8007	76.8205	83.5055	83.5115	83.9427	83.9542
.94673E+08	82.1210	82.1388	88.1599	88.1650	88.5073	88.5176
.12623E+09	85.6672	85.6837	91.3060	91.3106	91.6023	91.6120
.15779E+09	88.2364	88.2521	93.5967	93.6010	93.8596	93.8688
.18935E+09	90.1743	90.1892	95.3180	95.3220	95.5573	95.5661
.22090E+09	91.6855	91.6999	96.6484	96.6522	96.8701	96.8787
.25246E+09	92.9482	92.9621	97.7544	97.7580	97.9618	97.9700
.28402E+09	93.7552	93.7687	98.4234	98.4269	98.6209	98.6289
.31558E+09	94.3082	94.3213	98.8521	98.8555	99.0419	99.0497
.63115E+09	96.4466	96.4569	100.022	100.025	100.167	100.174
.94673E+09	95.7084	95.7167	98.5795	98.5817	98.7030	98.7080
.12623E+10	93.6719	93.6787	96.0027	96.0045	96.1124	96.1164
.15779E+10	91.6081	91.6136	93.5081	93.5097	93.6051	93.6084
.18935E+10	89.8058	89.8104	91.3614	91.3627	91.4466	91.4493
.22090E+10	88.2330	88.2368	89.5123	89.5134	89.5866	89.5888
.25246E+10	86.5970	86.6001	87.6574	87.6583	87.7226	87.7244
.28402E+10	85.3138	85.3164	86.1983	86.1991	86.2551	86.2566
.31558E+10	84.2347	84.2369	84.9786	84.9793	85.0281	85.0294
.63115E+10	78.7205	78.7212	78.9587	78.9589	78.9773	78.9777
.94673E+10	76.1378	76.1383	76.3003	76.3005	76.3139	76.3142
.12623E+11	74.7090	74.7094	74.8402	74.8404	74.8516	74.8519
.15779E+11	73.6329	73.6332	73.7410	73.7411	73.7506	73.7508
.18935E+11	72.5226	72.5229	72.6119	72.6120	72.6201	72.6203

.22090E+11	71.5140	71.5143	71.5879	71.5880	71.5948	71.5950
.25246E+11	70.5873	70.5874	70.6484	70.6484	70.6542	70.6543
.28402E+11	69.7487	69.7488	69.7992	69.7993	69.8042	69.8043
.31558E+11	69.0036	69.0037	69.0455	69.0455	69.0496	69.0497

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	115.874	123.118	130.287	131.526	129.820	86.8788
.20000E-05	115.872	123.116	130.284	131.523	129.817	86.8761
31.558	115.872	123.116	130.284	131.523	129.817	86.8761
.31558E+07	121.198	127.943	134.614	135.708	134.198	92.9032
.63116E+07	123.227	129.657	136.015	137.033	135.623	95.6666
.94673E+07	124.312	130.493	136.607	137.569	136.230	97.4545
.12623E+08	124.968	130.938	136.845	137.764	136.481	98.7656
.15779E+08	125.386	131.173	136.899	137.781	136.544	99.7916
.18935E+08	125.658	131.282	136.848	137.698	136.500	100.628
.22090E+08	125.834	131.311	136.732	137.555	136.392	101.329
.25246E+08	125.967	131.311	136.603	137.402	136.269	101.944
.28402E+08	126.062	131.286	136.459	137.236	136.130	102.486
.31558E+08	126.134	131.246	136.311	137.068	135.988	102.973
.63115E+08	126.784	131.160	135.501	136.129	135.217	106.450
.94673E+08	127.679	131.671	135.633	136.194	135.377	108.825
.12623E+09	128.538	132.294	136.022	136.541	135.785	110.589
.15779E+09	129.216	132.804	136.367	136.857	136.144	111.914
.18935E+09	129.670	133.127	136.561	137.028	136.349	112.890
.22090E+09	129.932	133.280	136.605	137.055	136.401	113.606
.25246E+09	130.094	133.346	136.576	137.010	136.379	114.176
.28402E+09	129.922	133.090	136.238	136.661	136.044	114.389
.31558E+09	129.577	132.670	135.744	136.156	135.552	114.411
.63115E+09	124.502	126.996	129.480	129.819	129.297	112.428
.94673E+09	118.337	120.379	122.418	122.706	122.241	108.684
.12623E+10	112.069	113.755	115.443	115.690	115.274	104.324
.15779E+10	106.616	108.009	109.407	109.619	109.253	100.378
.18935E+10	102.102	103.256	104.417	104.597	104.278	97.0472
.22090E+10	98.3501	99.3087	100.274	100.427	100.152	94.2312
.25246E+10	94.9828	95.7838	96.5915	96.7226	96.4846	91.6012
.28402E+10	92.3095	92.9821	93.6610	93.7731	93.5681	89.5100
.31558E+10	90.1185	90.6872	91.2618	91.3579	91.1810	87.7791
.63115E+10	80.6016	80.7876	80.9762	81.0097	80.9470	79.8772
.94673E+10	77.4193	77.5469	77.6765	77.7001	77.6559	76.9326
.12623E+11	75.7423	75.8455	75.9505	75.9698	75.9336	75.3528
.15779E+11	74.4836	74.5689	74.6556	74.6716	74.6415	74.1648
.18935E+11	73.2250	73.2956	73.3674	73.3809	73.3557	72.9634
.22090E+11	72.0944	72.1528	72.2123	72.2235	72.2025	71.8794
.25246E+11	71.0669	71.1153	71.1646	71.1740	71.1565	70.8901
.28402E+11	70.1454	70.1855	70.2264	70.2342	70.2196	69.9998
.31558E+11	69.3320	69.3653	69.3992	69.4057	69.3935	69.2120

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	86.5861	56.9403	56.2771	32.1622
.20000E-05	86.5835	56.9391	56.2760	32.1622
31.558	86.5834	56.9389	56.2758	32.1621
.31558E+07	92.6210	65.6561	65.0135	43.1699
.63116E+07	95.3936	69.9997	69.3760	48.8831
.94673E+07	97.1896	72.9853	72.3788	52.9133
.12623E+08	98.5080	75.2858	74.6951	56.0778
.15779E+08	99.5406	77.1592	76.5829	58.6904
.18935E+08	100.383	78.7373	78.1743	60.9147
.22090E+08	101.090	80.0987	79.5481	62.8499
.25246E+08	101.710	81.3022	80.7629	64.5633
.28402E+08	102.256	82.3770	81.8481	66.0979
.31558E+08	102.748	83.3487	82.8295	67.4868
.63115E+08	106.254	89.9855	89.5318	76.8007
.94673E+08	108.644	93.9747	93.5551	82.1210
.12623E+09	110.417	96.7210	96.3232	85.6672
.15779E+09	111.749	98.7336	98.3513	88.2364
.18935E+09	112.731	100.241	99.8713	90.1743
.22090E+09	113.451	101.396	101.036	91.6855
.25246E+09	114.025	102.349	101.999	92.9482
.28402E+09	114.242	102.885	102.544	93.7552
.31558E+09	114.267	103.196	102.863	94.3082
.63115E+09	112.313	103.451	103.187	96.4466
.94673E+09	108.592	101.348	101.136	95.7084
.12623E+10	104.250	98.2614	98.0911	93.6719
.15779E+10	100.317	95.3579	95.2203	91.6081
.18935E+10	96.9983	92.8825	92.7707	89.8058
.22090E+10	94.1911	90.7676	90.6765	88.2330
.25246E+10	91.5682	88.7012	88.6264	86.5970
.28402E+10	89.4826	87.0713	87.0093	85.3138
.31558E+10	87.7562	85.7143	85.6626	84.2347
.63115E+10	79.8700	79.1966	79.1805	78.7205
.94673E+10	76.9277	76.4633	76.4525	76.1378
.12623E+11	75.3489	74.9721	74.9634	74.7090
.15779E+11	74.1616	73.8498	73.8427	73.6329
.18935E+11	72.9608	72.7020	72.6962	72.5226
.22090E+11	71.8772	71.6625	71.6577	71.5140
.25246E+11	70.8883	70.7102	70.7062	70.5873
.28402E+11	69.9984	69.8505	69.8472	69.7487
.31558E+11	69.2108	69.0879	69.0853	69.0036

* Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 35861.980 TIME= 13:48:52
NSOL command erases all previously stored or calculated data
unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045

VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9855 TEMP	ot4o045	32.17	31.56	96.45	.6312E+09
3	NSOL	9818 TEMP	ot4i045	32.21	31.56	96.46	.6312E+09
4	NSOL	9546 TEMP	it4o045	44.47	31.56	100.0	.6312E+09
5	NSOL	9509 TEMP	it4i045	44.48	31.56	100.0	.6312E+09
6	NSOL	8352 TEMP	st4o045	46.28	31.56	100.2	.6312E+09
7	NSOL	8346 TEMP	st4i045	46.30	31.56	100.2	.6312E+09
8	NSOL	8234 TEMP	ht4i045	69.33	.3156E+11	130.1	.2525E+09
9	NSOL	8238 TEMP	gt4i045	69.37	.3156E+11	133.4	.2525E+09
10	NSOL	7642 TEMP	c04i045	69.40	.3156E+11	136.9	.1578E+08
11	NSOL	7654 TEMP	gb4i045	69.41	.3156E+11	137.8	.1578E+08
12	NSOL	7655 TEMP	gb4h045	69.39	.3156E+11	136.6	.1578E+08
13	NSOL	7650 TEMP	sb4i045	69.21	.3156E+11	114.4	.3156E+09
14	NSOL	7871 TEMP	sb4o045	69.21	.3156E+11	114.3	.3156E+09
15	NSOL	8934 TEMP	ib4i045	56.96	31.56	103.5	.6312E+09
16	NSOL	8971 TEMP	ib4o045	56.30	31.56	103.2	.6312E+09
17	NSOL	9855 TEMP	ob4o045	32.17	31.56	96.45	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.1728	32.2118	44.4666	44.4818	46.2832	46.3043
.20000E-05	32.1727	32.2118	44.4660	44.4812	46.2825	46.3036
31.558	32.1727	32.2117	44.4659	44.4811	46.2824	46.3035
.31558E+07	43.1789	43.2141	54.4393	54.4523	55.8255	55.8447
.63116E+07	48.8913	48.9243	59.5081	59.5199	60.6934	60.7115
.94673E+07	52.9208	52.9521	63.0371	63.0480	64.0897	64.1069
.12623E+08	56.0849	56.1147	65.7824	65.7926	66.7355	66.7520
.15779E+08	58.6971	58.7257	68.0336	68.0433	68.9086	68.9246
.18935E+08	60.9211	60.9486	69.9403	69.9495	70.7516	70.7670
.22090E+08	62.8560	62.8826	71.5922	71.6010	72.3502	72.3651
.25246E+08	64.5691	64.5949	73.0533	73.0617	73.7658	73.7803
.28402E+08	66.1035	66.1286	74.3597	74.3677	75.0329	75.0470
.31558E+08	67.4922	67.5166	75.5411	75.5488	76.1798	76.1936
.63115E+08	76.8049	76.8250	83.5176	83.5236	83.9561	83.9676
.94673E+08	82.1247	82.1427	88.1707	88.1758	88.5192	88.5296
.12623E+09	85.6705	85.6872	91.3161	91.3207	91.6135	91.6231
.15779E+09	88.2396	88.2554	93.6063	93.6105	93.8701	93.8793
.18935E+09	90.1772	90.1923	95.3271	95.3311	95.5673	95.5762
.22090E+09	91.6883	91.7029	96.6572	96.6610	96.8799	96.8884
.25246E+09	92.9509	92.9650	97.7629	97.7665	97.9712	97.9794

.28402E+09	93.7578	93.7715	98.4317	98.4352	98.6300	98.6381
.31558E+09	94.3107	94.3240	98.8602	98.8636	99.0508	99.0586
.63115E+09	96.4485	96.4590	100.028	100.031	100.174	100.181
.94673E+09	95.7100	95.7184	98.5847	98.5868	98.7087	98.7137
.12623E+10	93.6732	93.6801	96.0069	96.0087	96.1170	96.1211
.15779E+10	91.6092	91.6148	93.5116	93.5131	93.6089	93.6122
.18935E+10	89.8067	89.8113	91.3642	91.3655	91.4497	91.4524
.22090E+10	88.2338	88.2376	89.5146	89.5157	89.5892	89.5914
.25246E+10	86.5977	86.6008	87.6593	87.6602	87.7247	87.7266
.28402E+10	85.3143	85.3169	86.1999	86.2007	86.2569	86.2585
.31558E+10	84.2351	84.2374	84.9800	84.9806	85.0296	85.0309
.63115E+10	78.7206	78.7213	78.9591	78.9593	78.9778	78.9782
.94673E+10	76.1379	76.1384	76.3006	76.3008	76.3143	76.3146
.12623E+11	74.7091	74.7095	74.8405	74.8406	74.8519	74.8521
.15779E+11	73.6329	73.6333	73.7412	73.7413	73.7508	73.7510
.18935E+11	72.5226	72.5229	72.6121	72.6122	72.6203	72.6205
.22090E+11	71.5141	71.5143	71.5881	71.5881	71.5950	71.5951
.25246E+11	70.5873	70.5875	70.6485	70.6485	70.6543	70.6545
.28402E+11	69.7487	69.7489	69.7993	69.7994	69.8043	69.8044
.31558E+11	69.0036	69.0037	69.0456	69.0456	69.0497	69.0498

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.911	123.156	130.326	131.567	129.859	86.9091
.20000E-05	115.909	123.154	130.324	131.565	129.857	86.9064
31.558	115.909	123.154	130.324	131.565	129.857	86.9064
.31558E+07	121.233	127.979	134.652	135.748	134.236	92.9314
.63116E+07	123.260	129.691	136.052	137.071	135.659	95.6936
.94673E+07	124.344	130.526	136.642	137.606	136.266	97.4804
.12623E+08	124.999	130.970	136.879	137.799	136.515	98.7906
.15779E+08	125.416	131.204	136.932	137.816	136.577	99.8158
.18935E+08	125.687	131.312	136.880	137.732	136.533	100.651
.22090E+08	125.863	131.340	136.764	137.589	136.424	101.352
.25246E+08	125.995	131.340	136.635	137.434	136.300	101.966
.28402E+08	126.090	131.314	136.490	137.268	136.161	102.508
.31558E+08	126.160	131.274	136.341	137.099	136.017	102.994
.63115E+08	126.807	131.184	135.527	136.156	135.243	106.468
.94673E+08	127.700	131.693	135.657	136.219	135.400	108.842
.12623E+09	128.558	132.314	136.045	136.564	135.807	110.604
.15779E+09	129.235	132.824	136.389	136.879	136.166	111.929
.18935E+09	129.688	133.146	136.582	137.050	136.369	112.905
.22090E+09	129.950	133.298	136.626	137.076	136.421	113.620
.25246E+09	130.111	133.364	136.595	137.031	136.398	114.189
.28402E+09	129.939	133.108	136.257	136.681	136.063	114.402
.31558E+09	129.593	132.687	135.762	136.176	135.571	114.423
.63115E+09	124.515	127.010	129.496	129.835	129.313	112.438
.94673E+09	118.347	120.390	122.431	122.719	122.254	108.692
.12623E+10	112.078	113.764	115.453	115.700	115.284	104.331
.15779E+10	106.623	108.017	109.416	109.628	109.261	100.383
.18935E+10	102.108	103.262	104.424	104.604	104.285	97.0520
.22090E+10	98.3551	99.3140	100.280	100.433	100.158	94.2352
.25246E+10	94.9869	95.7883	96.5964	96.7277	96.4894	91.6045
.28402E+10	92.3130	92.9858	93.6651	93.7774	93.5721	89.5128
.31558E+10	90.1214	90.6903	91.2652	91.3615	91.1844	87.7815
.63115E+10	80.6026	80.7886	80.9773	81.0109	80.9481	79.8780
.94673E+10	77.4200	77.5476	77.6773	77.7009	77.6567	76.9331
.12623E+11	75.7428	75.8461	75.9511	75.9704	75.9342	75.3533
.15779E+11	74.4841	74.5693	74.6561	74.6722	74.6420	74.1652

.18935E+11	73.2254	73.2960	73.3679	73.3813	73.3561	72.9637
.22090E+11	72.0947	72.1532	72.2127	72.2239	72.2029	71.8796
.25246E+11	71.0672	71.1156	71.1649	71.1743	71.1567	70.8903
.28402E+11	70.1456	70.1857	70.2266	70.2345	70.2198	70.0000
.31558E+11	69.3322	69.3655	69.3994	69.4059	69.3937	69.2121

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	86.6163	56.9621	56.2983	32.1728
.20000E-05	86.6137	56.9610	56.2972	32.1727
31.558	86.6136	56.9607	56.2970	32.1727
.31558E+07	92.6492	65.6753	65.0321	43.1789
.63116E+07	95.4204	70.0174	69.3930	48.8913
.94673E+07	97.2154	73.0020	72.3948	52.9208
.12623E+08	98.5329	75.3016	74.7102	56.0849
.15779E+08	99.5647	77.1742	76.5973	58.6971
.18935E+08	100.406	78.7517	78.1881	60.9211
.22090E+08	101.113	80.1125	79.5613	62.8560
.25246E+08	101.732	81.3156	80.7757	64.5691
.28402E+08	102.278	82.3900	81.8605	66.1035
.31558E+08	102.769	83.3612	82.8415	67.4922
.63115E+08	106.272	89.9956	89.5414	76.8049
.94673E+08	108.661	93.9836	93.5635	82.1247
.12623E+09	110.433	96.7291	96.3309	85.6705
.15779E+09	111.764	98.7413	98.3585	88.2396
.18935E+09	112.745	100.249	99.8782	90.1772
.22090E+09	113.464	101.402	101.043	91.6883
.25246E+09	114.038	102.355	102.005	92.9509
.28402E+09	114.255	102.892	102.550	93.7578
.31558E+09	114.279	103.202	102.869	94.3107
.63115E+09	112.323	103.456	103.192	96.4485
.94673E+09	108.600	101.352	101.140	95.7100
.12623E+10	104.257	98.2648	98.0943	93.6732
.15779E+10	100.323	95.3607	95.2230	91.6092
.18935E+10	97.0031	92.8848	92.7730	89.8067
.22090E+10	94.1951	90.7695	90.6784	88.2338
.25246E+10	91.5715	88.7028	88.6280	86.5977
.28402E+10	89.4854	87.0726	87.0106	85.3143
.31558E+10	87.7585	85.7155	85.6637	84.2351
.63115E+10	79.8708	79.1970	79.1809	78.7206
.94673E+10	76.9283	76.4636	76.4528	76.1379
.12623E+11	75.3494	74.9723	74.9637	74.7091
.15779E+11	74.1620	73.8500	73.8429	73.6329
.18935E+11	72.9611	72.7022	72.6964	72.5226
.22090E+11	71.8775	71.6627	71.6579	71.5141
.25246E+11	70.8885	70.7103	70.7063	70.5873
.28402E+11	69.9985	69.8505	69.8473	69.7487
.31558E+11	69.2109	69.0880	69.0853	69.0036

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 35865.350 TIME= 13:48:55
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= otliise
 VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= itloise
 VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= itliise
 VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= stloise
 VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= stliise
 VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= htliise
 VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gtliise
 VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c0liise
 VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gbliise
 VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise
 VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sbliise
 VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sbloise
 VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ibliise
 VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ibloise
 VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= obloise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2763 TEMP	otloise	31.31	31.56	96.24	.6312E+09
3	NSOL	2726 TEMP	otliise	31.33	31.56	96.25	.6312E+09
4	NSOL	1980 TEMP	itloise	50.15	31.56	101.8	.6312E+09
5	NSOL	1943 TEMP	itliise	50.19	31.56	101.8	.6312E+09
6	NSOL	1281 TEMP	stloise	56.80	31.56	103.6	.6312E+09
7	NSOL	1247 TEMP	stliise	57.31	31.56	103.8	.6312E+09
8	NSOL	1206 TEMP	htliise	69.27	.3156E+11	121.1	.2840E+09
9	NSOL	1207 TEMP	gtliise	69.35	.3156E+11	128.9	.2525E+09
10	NSOL	63 TEMP	c0liise	69.38	.3156E+11	132.7	.2525E+09
11	NSOL	1034 TEMP	gbliise	69.39	.3156E+11	133.1	.2525E+09
12	NSOL	1035 TEMP	gb1hise	69.35	.3156E+11	129.0	.2525E+09
13	NSOL	1033 TEMP	sbliise	69.26	.3156E+11	119.8	.2840E+09
14	NSOL	1071 TEMP	sbloise	69.25	.3156E+11	119.5	.2840E+09
15	NSOL	1652 TEMP	ibliise	60.20	31.56	104.8	.3156E+09
16	NSOL	1689 TEMP	ibloise	59.43	31.56	104.4	.6312E+09
17	NSOL	2763 TEMP	obloise	31.31	31.56	96.24	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP otloise	2726 TEMP otliise	1980 TEMP itloise	1943 TEMP itliise	1281 TEMP stloise	1247 TEMP stliise
.10000E-05	31.3060	31.3343	50.1466	50.1952	56.8045	57.3090
.20000E-05	31.3059	31.3343	50.1458	50.1944	56.8033	57.3078
31.558	31.3059	31.3342	50.1456	50.1942	56.8031	57.3076
.31558E+07	42.4083	42.4334	59.7241	59.7696	65.6368	66.1188

.63116E+07	48.1760	48.1994	64.5308	64.5741	70.0336	70.4986
.94673E+07	52.2469	52.2688	67.8499	67.8915	73.0535	73.5039
.12623E+08	55.4445	55.4654	70.4163	70.4565	75.3782	75.8154
.15779E+08	58.0852	58.1051	72.5112	72.5500	77.2691	77.6946
.18935E+08	60.3336	60.3527	74.2789	74.3165	78.8605	79.2752
.22090E+08	62.2901	62.3085	75.8058	75.8424	80.2321	80.6369
.25246E+08	64.0223	64.0400	77.1548	77.1905	81.4438	81.8396
.28402E+08	65.5737	65.5909	78.3593	78.3942	82.5251	82.9127
.31558E+08	66.9778	66.9945	79.4477	79.4817	83.5021	83.8821
.63115E+08	76.3874	76.4009	86.8181	86.8470	90.1644	90.4935
.94673E+08	81.7546	81.7666	91.1665	91.1928	94.1631	94.4659
.12623E+09	85.3287	85.3397	94.1280	94.1527	96.9144	97.2011
.15779E+09	87.9172	87.9276	96.2871	96.3107	98.9289	99.2042
.18935E+09	89.8697	89.8796	97.9053	97.9280	100.436	100.703
.22090E+09	91.3929	91.4024	99.1496	99.1716	101.589	101.848
.25246E+09	92.6658	92.6750	100.181	100.202	102.541	102.793
.28402E+09	93.4815	93.4904	100.782	100.803	103.075	103.320
.31558E+09	94.0422	94.0508	101.150	101.170	103.382	103.621
.63115E+09	96.2385	96.2452	101.832	101.848	103.596	103.785
.94673E+09	95.5409	95.5463	100.028	100.040	101.454	101.605
.12623E+10	93.5351	93.5395	97.1723	97.1826	98.3386	98.4601
.15779E+10	91.4958	91.4995	94.4570	94.4653	95.4143	95.5123
.18935E+10	89.7133	89.7163	92.1348	92.1416	92.9237	93.0033
.22090E+10	88.1566	88.1591	90.1457	90.1512	90.7982	90.8630
.25246E+10	86.5333	86.5354	88.1802	88.1848	88.7240	88.7774
.28402E+10	85.2604	85.2621	86.6330	86.6368	87.0887	87.1329
.31558E+10	84.1896	84.1911	85.3432	85.3463	85.7278	85.7648
.63115E+10	78.7058	78.7063	79.0738	79.0748	79.1992	79.2107
.94673E+10	76.1277	76.1280	76.3785	76.3792	76.4647	76.4725
.12623E+11	74.7008	74.7011	74.9031	74.9037	74.9730	74.9793
.15779E+11	73.6261	73.6263	73.7927	73.7931	73.8505	73.8556
.18935E+11	72.5170	72.5172	72.6546	72.6549	72.7025	72.7067
.22090E+11	71.5094	71.5095	71.6231	71.6234	71.6628	71.6663
.25246E+11	70.5834	70.5835	70.6774	70.6776	70.7104	70.7132
.28402E+11	69.7455	69.7456	69.8232	69.8234	69.8506	69.8529
.31558E+11	69.0009	69.0010	69.0653	69.0655	69.0880	69.0900

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.500
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gb1iise	1035 TEMP gb1hise	1033 TEMP sb1iise
.10000E-05	99.7964	116.202	124.033	125.070	117.066	97.9819
.20000E-05	99.7939	116.199	124.030	125.068	117.063	97.9788
31.558	99.7939	116.199	124.031	125.068	117.063	97.9788
.31558E+07	105.460	120.888	128.256	129.183	121.558	103.544
.63116E+07	107.867	122.659	129.728	130.597	123.238	105.938
.94673E+07	109.325	123.602	130.429	131.257	124.123	107.407
.12623E+08	110.332	124.169	130.789	131.583	124.645	108.433
.15779E+08	111.079	124.527	130.964	131.730	124.968	109.202
.18935E+08	111.657	124.757	131.032	131.774	125.170	109.804
.22090E+08	112.119	124.904	131.030	131.751	125.292	110.290
.25246E+08	112.515	125.014	131.007	131.709	125.382	110.710
.28402E+08	112.855	125.092	130.962	131.647	125.442	111.072
.31558E+08	113.153	125.150	130.907	131.577	125.485	111.392
.63115E+08	115.350	125.731	130.727	131.294	125.967	113.751
.94673E+08	117.050	126.577	131.169	131.682	126.765	115.545
.12623E+09	118.399	127.399	131.740	132.218	127.557	116.954
.15779E+09	119.427	128.051	132.214	132.669	128.190	118.026
.18935E+09	120.165	128.494	132.516	132.953	128.618	118.801
.22090E+09	120.676	128.756	132.660	133.081	128.870	119.344

.25246E+09	121.063	128.922	132.720	133.129	129.027	119.760
.28402E+09	121.107	128.774	132.480	132.878	128.873	119.833
.31558E+09	120.971	128.460	132.083	132.473	128.557	119.723
.63115E+09	117.668	123.731	126.674	126.998	123.815	116.659
.94673E+09	112.898	117.865	120.285	120.561	117.949	112.083
.12623E+10	107.728	111.824	113.825	114.063	111.908	107.070
.15779E+10	103.135	106.515	108.171	108.375	106.597	102.602
.18935E+10	99.2917	102.087	103.460	103.634	102.164	98.8592
.22090E+10	96.0667	98.3850	99.5254	99.6738	98.4552	95.7142
.25246E+10	93.1125	95.0471	96.0002	96.1272	95.1111	92.8238
.28402E+10	90.7638	92.3861	93.1866	93.2952	92.4435	90.5252
.31558E+10	88.8285	90.1987	90.8755	90.9688	90.2498	88.6296
.63115E+10	80.2042	80.6495	80.8704	80.9031	80.6703	80.1439
.94673E+10	77.1527	77.4573	77.6086	77.6315	77.4727	77.1127
.12623E+11	75.5291	75.7752	75.8975	75.9163	75.7881	75.4974
.15779E+11	74.3092	74.5121	74.6130	74.6286	74.5231	74.2834
.18935E+11	73.0819	73.2497	73.3332	73.3462	73.2591	73.0609
.22090E+11	71.9768	72.1156	72.1847	72.1956	72.1236	71.9597
.25246E+11	70.9703	71.0851	71.1423	71.1514	71.0918	70.9563
.28402E+11	70.0659	70.1609	70.2083	70.2158	70.1666	70.0544
.31558E+11	69.2664	69.3452	69.3844	69.3908	69.3500	69.2571

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.510
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP sbloise	1652 TEMP ibliise	1689 TEMP ibloise	2763 TEMP obloise
.10000E-05	97.2892	60.1976	59.4292	31.3060
.20000E-05	97.2861	60.1963	59.4280	31.3059
31.558	97.2860	60.1960	59.4277	31.3059
.31558E+07	102.873	68.8040	68.0545	42.4083
.63116E+07	105.287	73.0455	72.3162	48.1760
.94673E+07	106.774	75.9387	75.2285	52.2469
.12623E+08	107.817	78.1548	77.4624	55.4445
.15779E+08	108.601	79.9509	79.2751	58.0852
.18935E+08	109.217	81.4582	80.7977	60.3336
.22090E+08	109.716	82.7544	82.1082	62.2901
.25246E+08	110.147	83.8985	83.2654	64.0223
.28402E+08	110.520	84.9186	84.2976	65.5737
.31558E+08	110.851	85.8397	85.2300	66.9778
.63115E+08	113.279	92.1391	91.6056	76.3874
.94673E+08	115.108	95.9556	95.4623	81.7546
.12623E+09	116.539	98.5978	98.1295	85.3287
.15779E+09	117.626	100.537	100.086	87.9172
.18935E+09	118.414	101.984	101.548	89.8697
.22090E+09	118.967	103.085	102.661	91.3929
.25246E+09	119.393	103.992	103.579	92.6658
.28402E+09	119.475	104.485	104.082	93.4815
.31558E+09	119.374	104.755	104.362	94.0422
.63115E+09	116.382	104.676	104.365	96.2385
.94673E+09	111.862	102.317	102.071	95.5409
.12623E+10	106.893	99.0336	98.8365	93.5351
.15779E+10	102.460	95.9750	95.8168	91.4958
.18935E+10	98.7441	93.3793	93.2515	89.7133
.22090E+10	95.6205	91.1701	91.0664	88.1566
.25246E+10	92.7469	89.0300	88.9453	86.5333
.28402E+10	90.4617	87.3423	87.2724	85.2604
.31558E+10	88.5766	85.9401	85.8818	84.1896
.63115E+10	80.1275	79.2655	79.2477	78.7058
.94673E+10	77.1017	76.5095	76.4975	76.1277
.12623E+11	75.4886	75.0090	74.9994	74.7008
.15779E+11	74.2762	73.8800	73.8722	73.6261

.18935E+11	73.0550	72.7267	72.7203	72.5170
.22090E+11	71.9549	71.6828	71.6776	71.5094
.25246E+11	70.9523	70.7268	70.7225	70.5834
.28402E+11	70.0511	69.8642	69.8606	69.7455
.31558E+11	69.2544	69.0992	69.0963	69.0009

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 35868.720 TIME= 13:48:59
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose
 VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose
 VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose
 VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose
 VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose
 VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose
 VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose
 VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose
 VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose
 VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose
 VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose
 VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose
 VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose
 VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose
 VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2682 TEMP	ot1oose	34.32	31.56	97.02	.6312E+09
3	NSOL	2673 TEMP	ot1oose	34.41	31.56	97.05	.6312E+09
4	NSOL	1899 TEMP	it1oose	35.98	31.56	97.52	.6312E+09
5	NSOL	1794 TEMP	it1oose	35.94	31.56	97.51	.6312E+09
6	NSOL	1276 TEMP	st1oose	42.99	31.56	99.13	.6312E+09
7	NSOL	1233 TEMP	st1oose	43.02	31.56	99.14	.6312E+09
8	NSOL	1196 TEMP	ht1oose	67.04	31.56	106.2	.3156E+09
9	NSOL	1197 TEMP	gt1oose	69.19	.3156E+11	111.9	.3156E+09
10	NSOL	58 TEMP	c01oose	69.21	.3156E+11	113.7	.3156E+09
11	NSOL	1019 TEMP	gb1oose	69.22	.3156E+11	114.2	.3156E+09
12	NSOL	1020 TEMP	gb1hose	69.20	.3156E+11	112.8	.3156E+09
13	NSOL	1018 TEMP	sb1oose	69.16	.3156E+11	108.9	.3156E+09
14	NSOL	1066 TEMP	sb1oose	69.16	.3156E+11	108.8	.3156E+09
15	NSOL	1529 TEMP	ib1oose	52.32	31.56	101.7	.6312E+09
16	NSOL	1608 TEMP	ib1oose	52.10	31.56	101.6	.6312E+09
17	NSOL	2682 TEMP	ob1oose	34.32	31.56	97.02	.6312E+09

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38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.850
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP otloose	2673 TEMP otloose	1899 TEMP itloose	1794 TEMP itloose	1276 TEMP stloose	1233 TEMP stloose
.10000E-05	34.3234	34.4151	35.9843	35.9439	42.9863	43.0164
.20000E-05	34.3232	34.4150	35.9841	35.9437	42.9858	43.0159
31.558	34.3232	34.4149	35.9841	35.9436	42.9856	43.0158
.31558E+07	45.1154	45.2001	46.6433	46.6071	52.7558	52.7821
.63116E+07	50.7012	50.7815	52.1456	52.1120	57.7756	57.7998
.94673E+07	54.6349	54.7116	56.0139	55.9822	61.2946	61.3173
.12623E+08	57.7201	57.7939	59.0443	59.0142	64.0457	64.0671
.15779E+08	60.2653	60.3365	61.5420	61.5132	66.3097	66.3301
.18935E+08	62.4309	62.4998	63.6657	63.6382	68.2334	68.2529
.22090E+08	64.3142	64.3811	65.5116	65.4851	69.9046	69.9234
.25246E+08	65.9816	66.0467	67.1457	67.1201	71.3854	71.4035
.28402E+08	67.4749	67.5383	68.6087	68.5839	72.7118	72.7293
.31558E+08	68.8263	68.8883	69.9326	69.9086	73.9129	73.9299
.63115E+08	77.9021	77.9542	78.8303	78.8110	82.0428	82.0565
.94673E+08	83.1049	83.1521	83.9440	83.9270	86.7841	86.7961
.12623E+09	86.5808	86.6251	87.3663	87.3507	89.9858	89.9968
.15779E+09	89.1014	89.1436	89.8495	89.8349	92.3176	92.3279
.18935E+09	91.0019	91.0425	91.7209	91.7070	94.0741	94.0839
.22090E+09	92.4824	92.5216	93.1771	93.1638	95.4367	95.4460
.25246E+09	93.7187	93.7568	94.3923	94.3795	96.5717	96.5806
.28402E+09	94.5028	94.5399	95.1576	95.1452	97.2696	97.2783
.31558E+09	95.0354	95.0715	95.6731	95.6610	97.7260	97.7344
.63115E+09	97.0176	97.0461	97.5204	97.5110	99.1314	99.1382
.94673E+09	96.1677	96.1905	96.5713	96.5637	97.8735	97.8791
.12623E+10	94.0460	94.0645	94.3732	94.3670	95.4420	95.4467
.15779E+10	91.9141	91.9292	92.1804	92.1753	93.0610	93.0650
.18935E+10	90.0572	90.0695	90.2750	90.2708	91.0029	91.0063
.22090E+10	88.4404	88.4505	88.6194	88.6159	89.2230	89.2258
.25246E+10	86.7694	86.7778	86.9177	86.9147	87.4222	87.4246
.28402E+10	85.4580	85.4649	85.5815	85.5791	86.0052	86.0073
.31558E+10	84.3562	84.3621	84.4601	84.4580	84.8184	84.8201
.63115E+10	78.7598	78.7617	78.7929	78.7923	78.9109	78.9115
.94673E+10	76.1647	76.1660	76.1873	76.1869	76.2688	76.2693
.12623E+11	74.7308	74.7319	74.7491	74.7487	74.8153	74.8157
.15779E+11	73.6509	73.6517	73.6659	73.6656	73.7208	73.7210
.18935E+11	72.5375	72.5382	72.5499	72.5496	72.5955	72.5957
.22090E+11	71.5264	71.5270	71.5366	71.5364	71.5745	71.5747
.25246E+11	70.5975	70.5980	70.6060	70.6058	70.6374	70.6376
.28402E+11	69.7572	69.7576	69.7642	69.7640	69.7903	69.7905
.31558E+11	69.0106	69.0110	69.0164	69.0163	69.0382	69.0383

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP htloose	1197 TEMP gtloose	58 TEMP c0loose	1019 TEMP gbloose	1020 TEMP gbloose	1018 TEMP sbloose
.10000E-05	67.0441	81.3887	85.9952	87.4122	84.1611	74.7770
.20000E-05	67.0426	81.3866	85.9927	87.4096	84.1586	74.7748
31.558	67.0425	81.3866	85.9927	87.4096	84.1585	74.7747

.31558E+07	74.4892	87.7082	91.9393	93.2094	90.1602	81.4200
.63116E+07	78.1563	90.6814	94.6875	95.8755	92.9576	84.6289
.94673E+07	80.6551	92.6430	96.4773	97.6052	94.7920	86.7893
.12623E+08	82.5680	94.1059	97.7971	98.8761	96.1527	88.4267
.15779E+08	84.1183	95.2669	98.8347	99.8725	97.2279	89.7439
.18935E+08	85.4196	96.2247	99.6839	100.686	98.1117	90.8431
.22090E+08	86.5391	97.0365	100.399	101.369	98.8585	91.7839
.25246E+08	87.5294	97.7511	101.026	101.968	99.5157	92.6159
.28402E+08	88.4136	98.3848	101.581	102.498	100.098	93.3574
.31558E+08	89.2135	98.9556	102.080	102.974	100.622	94.0279
.63115E+08	94.7546	102.991	105.638	106.382	104.359	98.7348
.94673E+08	98.1911	105.651	108.051	108.719	106.868	101.750
.12623E+09	100.603	107.589	109.836	110.457	108.714	103.908
.15779E+09	102.384	109.037	111.176	111.764	110.099	105.512
.18935E+09	103.717	110.111	112.167	112.729	111.124	106.709
.22090E+09	104.731	110.909	112.896	113.439	111.884	107.612
.25246E+09	105.563	111.553	113.479	114.004	112.494	108.348
.28402E+09	106.005	111.834	113.709	114.219	112.747	108.710
.31558E+09	106.233	111.918	113.748	114.245	112.808	108.868
.63115E+09	105.892	110.447	111.925	112.327	111.161	107.994
.94673E+09	103.373	107.095	108.312	108.645	107.686	105.096
.12623E+10	99.9709	103.042	104.055	104.335	103.538	101.401
.15779E+10	96.8006	99.3394	100.184	100.419	99.7564	97.9897
.18935E+10	94.0986	96.2022	96.9061	97.1036	96.5526	95.0890
.22090E+10	91.7925	93.5400	94.1278	94.2939	93.8346	92.6191
.25246E+10	89.5705	91.0316	91.5256	91.6661	91.2810	90.2651
.28402E+10	87.8097	89.0371	89.4538	89.5729	89.2486	88.3956
.31558E+10	86.3447	87.3830	87.7367	87.8382	87.5634	86.8420
.63115E+10	79.4124	79.7531	79.8708	79.9053	79.8146	79.5784
.94673E+10	76.6144	76.8486	76.9300	76.9541	76.8916	76.7294
.12623E+11	75.0956	75.2855	75.3515	75.3712	75.3205	75.1892
.15779E+11	73.9526	74.1095	74.1642	74.1805	74.1387	74.0302
.18935E+11	72.7878	72.9179	72.9633	72.9769	72.9422	72.8524
.22090E+11	71.7341	71.8419	71.8796	71.8910	71.8622	71.7878
.25246E+11	70.7699	70.8592	70.8905	70.9000	70.8761	70.8145
.28402E+11	69.9002	69.9743	70.0004	70.0082	69.9884	69.9373
.31558E+11	69.1294	69.1909	69.2126	69.2191	69.2027	69.1603

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP	1529 TEMP	1608 TEMP	2682 TEMP
	sb1oose	ib1iose	ib1oose	ob1oose
.10000E-05	74.6363	52.3211	52.0995	34.3234
.20000E-05	74.6341	52.3202	52.0986	34.3232
31.558	74.6340	52.3200	52.0984	34.3232
.31558E+07	81.2847	61.2116	60.9973	45.1154
.63116E+07	84.4980	65.7049	65.4969	50.7012
.94673E+07	86.6623	68.8232	68.6209	54.6349
.12623E+08	88.3033	71.2435	71.0464	57.7201
.15779E+08	89.6236	73.2257	73.0333	60.2653
.18935E+08	90.7256	74.9033	74.7152	62.4309
.22090E+08	91.6691	76.3562	76.1721	64.3142
.25246E+08	92.5035	77.6429	77.4625	65.9816
.28402E+08	93.2473	78.7943	78.6174	67.4749
.31558E+08	93.9199	79.8367	79.6630	68.8263
.63115E+08	98.6409	86.9470	86.7947	77.9021
.94673E+08	101.664	91.1792	91.0381	83.1049
.12623E+09	103.826	94.0745	93.9404	86.5808
.15779E+09	105.433	96.1929	96.0640	89.1014
.18935E+09	106.633	97.7848	97.6600	91.0019
.22090E+09	107.538	99.0118	98.8905	92.4824

.25246E+09	108.276	100.030	99.9124	93.7187
.28402E+09	108.640	100.628	100.513	94.5028
.31558E+09	108.800	100.995	100.882	95.0354
.63115E+09	107.940	101.712	101.623	97.0176
.94673E+09	105.052	99.9588	99.8867	96.1677
.12623E+10	101.365	97.1476	97.0893	94.0460
.15779E+10	97.9607	94.4610	94.4137	91.9141
.18935E+10	95.0654	92.1558	92.1173	90.0572
.22090E+10	92.5997	90.1757	90.1442	88.4404
.25246E+10	90.2491	88.2153	88.1894	86.7694
.28402E+10	88.3823	86.6691	86.6476	85.4580
.31558E+10	86.8308	85.3783	85.3603	84.3562
.63115E+10	79.5749	79.0924	79.0868	78.7598
.94673E+10	76.7270	76.3933	76.3895	76.1647
.12623E+11	75.1873	74.9160	74.9129	74.7308
.15779E+11	74.0287	73.8039	73.8013	73.6509
.18935E+11	72.8511	72.6643	72.6622	72.5375
.22090E+11	71.7867	71.6315	71.6298	71.5264
.25246E+11	70.8136	70.6846	70.6832	70.5975
.28402E+11	69.9366	69.8294	69.8283	69.7572
.31558E+11	69.1597	69.0706	69.0696	69.0106

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 35872.080 TIME= 13:49:02
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise
 VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise
 VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise
 VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise
 VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise
 VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise
 VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise
 VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise
 VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise
 VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise
 VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise
 VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise
 VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise
 VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise
 VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9867 TEMP	ot4oise	31.31	31.56	96.24	.6312E+09
3	NSOL	9830 TEMP	ot4iise	31.34	31.56	96.25	.6312E+09
4	NSOL	9558 TEMP	it4oise	50.15	31.56	101.8	.6312E+09

5	NSOL	9521	TEMP	it4iise	50.20	31.56	101.8	.6312E+09
6	NSOL	8545	TEMP	st4oise	56.81	31.56	103.6	.6312E+09
7	NSOL	8511	TEMP	st4iise	57.32	31.56	103.8	.6312E+09
8	NSOL	8470	TEMP	ht4iise	69.27	.3156E+11	121.1	.2840E+09
9	NSOL	8471	TEMP	gt4iise	69.35	.3156E+11	128.9	.2525E+09
10	NSOL	7947	TEMP	c04iise	69.38	.3156E+11	132.7	.2525E+09
11	NSOL	7952	TEMP	gb4iise	69.39	.3156E+11	133.1	.2525E+09
12	NSOL	7953	TEMP	gb4hise	69.35	.3156E+11	129.0	.2525E+09
13	NSOL	7951	TEMP	sb4iise	69.26	.3156E+11	119.8	.2840E+09
14	NSOL	7996	TEMP	sb4oise	69.25	.3156E+11	119.5	.2840E+09
15	NSOL	8946	TEMP	ib4iise	60.21	31.56	104.8	.3156E+09
16	NSOL	8983	TEMP	ib4oise	59.44	31.56	104.4	.6312E+09
17	NSOL	9867	TEMP	ob4oise	31.31	31.56	96.24	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.3107	31.3390	50.1535	50.2021	56.8140	57.3183
.20000E-05	31.3106	31.3389	50.1528	50.2013	56.8128	57.3171
31.558	31.3106	31.3389	50.1526	50.2012	56.8126	57.3169
.31558E+07	42.4123	42.4374	59.7304	59.7759	65.6452	66.1269
.63116E+07	48.1797	48.2030	64.5366	64.5800	70.0413	70.5060
.94673E+07	52.2503	52.2722	67.8555	67.8971	73.0608	73.5109
.12623E+08	55.4478	55.4686	70.4217	70.4618	75.3850	75.8221
.15779E+08	58.0882	58.1081	72.5163	72.5551	77.2757	77.7009
.18935E+08	60.3365	60.3556	74.2838	74.3215	78.8667	79.2812
.22090E+08	62.2929	62.3112	75.8106	75.8472	80.2381	80.6427
.25246E+08	64.0250	64.0427	77.1594	77.1951	81.4496	81.8453
.28402E+08	65.5763	65.5935	78.3638	78.3987	82.5307	82.9182
.31558E+08	66.9803	66.9969	79.4521	79.4861	83.5076	83.8874
.63115E+08	76.3894	76.4029	86.8217	86.8506	90.1688	90.4977
.94673E+08	81.7563	81.7683	91.1697	91.1960	94.1670	94.4697
.12623E+09	85.3302	85.3413	94.1310	94.1557	96.9180	97.2045
.15779E+09	87.9186	87.9290	96.2900	96.3136	98.9323	99.2075
.18935E+09	89.8711	89.8809	97.9081	97.9308	100.440	100.706
.22090E+09	91.3942	91.4037	99.1523	99.1743	101.593	101.851
.25246E+09	92.6671	92.6762	100.183	100.205	102.544	102.796
.28402E+09	93.4827	93.4916	100.785	100.806	103.078	103.323
.31558E+09	94.0434	94.0520	101.152	101.172	103.385	103.624
.63115E+09	96.2394	96.2461	101.834	101.849	103.598	103.787
.94673E+09	95.5416	95.5471	100.029	100.042	101.456	101.607
.12623E+10	93.5357	93.5401	97.1736	97.1838	98.3401	98.4615
.15779E+10	91.4963	91.5000	94.4580	94.4663	95.4155	95.5135
.18935E+10	89.7138	89.7168	92.1357	92.1424	92.9248	93.0043
.22090E+10	88.1569	88.1594	90.1464	90.1519	90.7990	90.8639
.25246E+10	86.5336	86.5357	88.1808	88.1854	88.7248	88.7781
.28402E+10	85.2606	85.2624	86.6335	86.6373	87.0893	87.1334
.31558E+10	84.1898	84.1913	85.3436	85.3468	85.7283	85.7653
.63115E+10	78.7059	78.7063	79.0740	79.0750	79.1994	79.2109
.94673E+10	76.1277	76.1281	76.3786	76.3793	76.4648	76.4726
.12623E+11	74.7009	74.7012	74.9032	74.9038	74.9731	74.9794
.15779E+11	73.6261	73.6263	73.7928	73.7932	73.8506	73.8557
.18935E+11	72.5170	72.5172	72.6546	72.6550	72.7025	72.7067
.22090E+11	71.5094	71.5096	71.6231	71.6234	71.6629	71.6663
.25246E+11	70.5834	70.5835	70.6774	70.6777	70.7104	70.7132
.28402E+11	69.7455	69.7456	69.8233	69.8235	69.8506	69.8530
.31558E+11	69.0009	69.0010	69.0653	69.0655	69.0881	69.0900

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.230
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.8030	116.211	124.042	125.079	117.075	97.9930
.20000E-05	99.8004	116.208	124.039	125.076	117.072	97.9899
31.558	99.8004	116.208	124.039	125.077	117.072	97.9899
.31558E+07	105.466	120.896	128.264	129.192	121.567	103.554
.63116E+07	107.872	122.667	129.735	130.604	123.246	105.948
.94673E+07	109.330	123.610	130.437	131.264	124.130	107.416
.12623E+08	110.337	124.176	130.796	131.590	124.652	108.442
.15779E+08	111.084	124.534	130.971	131.738	124.975	109.211
.18935E+08	111.662	124.764	131.038	131.781	125.177	109.812
.22090E+08	112.124	124.910	131.037	131.758	125.299	110.298
.25246E+08	112.520	125.021	131.014	131.716	125.389	110.717
.28402E+08	112.859	125.098	130.969	131.654	125.449	111.079
.31558E+08	113.158	125.156	130.914	131.583	125.491	111.400
.63115E+08	115.354	125.736	130.732	131.299	125.972	113.757
.94673E+08	117.054	126.582	131.174	131.687	126.770	115.551
.12623E+09	118.402	127.403	131.744	132.223	127.561	116.959
.15779E+09	119.430	128.056	132.219	132.673	128.194	118.031
.18935E+09	120.168	128.499	132.521	132.957	128.623	118.806
.22090E+09	120.679	128.760	132.664	133.086	128.874	119.349
.25246E+09	121.066	128.926	132.724	133.133	129.031	119.765
.28402E+09	121.110	128.777	132.484	132.882	128.877	119.837
.31558E+09	120.973	128.464	132.087	132.477	128.560	119.727
.63115E+09	117.670	123.734	126.678	127.002	123.818	116.663
.94673E+09	112.900	117.868	120.288	120.564	117.951	112.086
.12623E+10	107.730	111.826	113.827	114.065	111.910	107.072
.15779E+10	103.136	106.517	108.173	108.377	106.599	102.605
.18935E+10	99.2928	102.089	103.462	103.636	102.166	98.8611
.22090E+10	96.0676	98.3864	99.5269	99.6754	98.4566	95.7157
.25246E+10	93.1133	95.0483	96.0015	96.1286	95.1123	92.8251
.28402E+10	90.7644	92.3871	93.1877	93.2964	92.4445	90.5263
.31558E+10	88.8291	90.1995	90.8764	90.9697	90.2506	88.6306
.63115E+10	80.2044	80.6498	80.8707	80.9034	80.6706	80.1442
.94673E+10	77.1528	77.4575	77.6088	77.6318	77.4729	77.1129
.12623E+11	75.5292	75.7753	75.8977	75.9165	75.7883	75.4975
.15779E+11	74.3093	74.5122	74.6131	74.6288	74.5232	74.2835
.18935E+11	73.0820	73.2498	73.3333	73.3464	73.2592	73.0610
.22090E+11	71.9769	72.1157	72.1848	72.1957	72.1237	71.9598
.25246E+11	70.9703	71.0852	71.1423	71.1515	71.0919	70.9564
.28402E+11	70.0659	70.1610	70.2083	70.2159	70.1667	70.0545
.31558E+11	69.2665	69.3452	69.3845	69.3908	69.3501	69.2571

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.3005	60.2136	59.4458	31.3107
.20000E-05	97.2974	60.2123	59.4445	31.3106
31.558	97.2973	60.2121	59.4443	31.3106

.31558E+07	102.883	68.8191	68.0701	42.4123
.63116E+07	105.296	73.0599	72.3311	48.1797
.94673E+07	106.783	75.9525	75.2428	52.2503
.12623E+08	107.826	78.1682	77.4763	55.4478
.15779E+08	108.609	79.9639	79.2885	58.0882
.18935E+08	109.225	81.4708	80.8108	60.3365
.22090E+08	109.724	82.7666	82.1209	62.2929
.25246E+08	110.155	83.9105	83.2779	64.0250
.28402E+08	110.528	84.9303	84.3098	65.5763
.31558E+08	110.859	85.8511	85.2419	66.9803
.63115E+08	113.285	92.1490	91.6158	76.3894
.94673E+08	115.114	95.9646	95.4717	81.7563
.12623E+09	116.544	98.6062	98.1383	85.3302
.15779E+09	117.632	100.545	100.095	87.9186
.18935E+09	118.419	101.992	101.556	89.8711
.22090E+09	118.972	103.093	102.669	91.3942
.25246E+09	119.398	103.999	103.587	92.6671
.28402E+09	119.480	104.492	104.090	93.4827
.31558E+09	119.378	104.762	104.369	94.0434
.63115E+09	116.386	104.681	104.371	96.2394
.94673E+09	111.865	102.322	102.075	95.5416
.12623E+10	106.895	99.0372	98.8403	93.5357
.15779E+10	102.462	95.9779	95.8199	91.4963
.18935E+10	98.7460	93.3816	93.2540	89.7138
.22090E+10	95.6220	91.1720	91.0684	88.1569
.25246E+10	92.7482	89.0316	88.9469	86.5336
.28402E+10	90.4628	87.3437	87.2738	85.2606
.31558E+10	88.5775	85.9412	85.8830	84.1898
.63115E+10	80.1278	79.2659	79.2480	78.7059
.94673E+10	77.1019	76.5097	76.4978	76.1277
.12623E+11	75.4888	75.0092	74.9996	74.7009
.15779E+11	74.2763	73.8801	73.8723	73.6261
.18935E+11	73.0552	72.7269	72.7205	72.5170
.22090E+11	71.9550	71.6829	71.6777	71.5094
.25246E+11	70.9524	70.7269	70.7226	70.5834
.28402E+11	70.0512	69.8642	69.8607	69.7455
.31558E+11	69.2544	69.0993	69.0964	69.0009

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 35875.450 TIME= 13:49:05
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose

VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose

VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose

VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose

VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9786 TEMP	ot4oose	34.36	31.56	97.03	.6312E+09
3 NSOL	9777 TEMP	ot4iose	34.45	31.56	97.05	.6312E+09
4 NSOL	9477 TEMP	it4oose	36.02	31.56	97.53	.6312E+09
5 NSOL	9318 TEMP	it4iose	35.98	31.56	97.52	.6312E+09
6 NSOL	8540 TEMP	st4oose	43.03	31.56	99.14	.6312E+09
7 NSOL	8497 TEMP	st4iose	43.06	31.56	99.15	.6312E+09
8 NSOL	8460 TEMP	ht4iose	67.10	31.56	106.3	.3156E+09
9 NSOL	8461 TEMP	gt4iose	69.19	.3156E+11	111.9	.3156E+09
10 NSOL	7927 TEMP	pt4iose	69.21	.3156E+11	113.8	.3156E+09
11 NSOL	7929 TEMP	gb4iose	69.22	.3156E+11	114.3	.3156E+09
12 NSOL	7930 TEMP	gb4hose	69.20	.3156E+11	112.8	.3156E+09
13 NSOL	7928 TEMP	sb4iose	69.16	.3156E+11	108.9	.3156E+09
14 NSOL	7991 TEMP	sb4oose	69.16	.3156E+11	108.8	.3156E+09
15 NSOL	8787 TEMP	ib4iose	52.40	31.56	101.7	.6312E+09
16 NSOL	8902 TEMP	ib4oose	52.18	31.56	101.6	.6312E+09
17 NSOL	9786 TEMP	ob4oose	34.36	31.56	97.03	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.3560	34.4468	36.0224	35.9823	43.0318	43.0625
.20000E-05	34.3559	34.4467	36.0222	35.9821	43.0312	43.0619
31.558	34.3558	34.4466	36.0221	35.9820	43.0311	43.0618
.31558E+07	45.1442	45.2280	46.6770	46.6412	52.7974	52.8243
.63116E+07	50.7279	50.8073	52.1769	52.1436	57.8148	57.8395
.94673E+07	54.6599	54.7359	56.0434	56.0121	61.3319	61.3551
.12623E+08	57.7439	57.8169	59.0723	59.0425	64.0814	64.1033
.15779E+08	60.2880	60.3584	61.5688	61.5404	66.3441	66.3650
.18935E+08	62.4526	62.5208	63.6915	63.6642	68.2666	68.2866
.22090E+08	64.3351	64.4013	65.5364	65.5102	69.9368	69.9561
.25246E+08	66.0018	66.0662	67.1697	67.1443	71.4166	71.4353
.28402E+08	67.4945	67.5572	68.6320	68.6074	72.7422	72.7602
.31558E+08	68.8454	68.9066	69.9552	69.9315	73.9425	73.9600
.63115E+08	77.9175	77.9691	78.8487	78.8296	82.0675	82.0816
.94673E+08	83.1185	83.1653	83.9603	83.9435	86.8064	86.8187
.12623E+09	86.5934	86.6372	87.3814	87.3660	90.0065	90.0179
.15779E+09	89.1133	89.1551	89.8638	89.8493	92.3373	92.3479
.18935E+09	91.0132	91.0534	91.7345	91.7208	94.0930	94.1031
.22090E+09	92.4932	92.5321	93.1902	93.1770	95.4549	95.4645
.25246E+09	93.7292	93.7669	94.4050	94.3923	96.5893	96.5986
.28402E+09	94.5130	94.5497	95.1699	95.1576	97.2867	97.2957
.31558E+09	95.0453	95.0810	95.6850	95.6731	97.7426	97.7514
.63115E+09	97.0253	97.0535	97.5298	97.5205	99.1446	99.1515
.94673E+09	96.1739	96.1966	96.5789	96.5714	97.8841	97.8899
.12623E+10	94.0511	94.0694	94.3793	94.3732	95.4507	95.4555
.15779E+10	91.9183	91.9332	92.1855	92.1804	93.0681	93.0722

.18935E+10	90.0607	90.0729	90.2792	90.2750	91.0087	91.0122
.22090E+10	88.4433	88.4533	88.6228	88.6194	89.2278	89.2307
.25246E+10	86.7718	86.7801	86.9206	86.9177	87.4262	87.4287
.28402E+10	85.4600	85.4669	85.5839	85.5815	86.0086	86.0107
.31558E+10	84.3579	84.3637	84.4621	84.4600	84.8212	84.8230
.63115E+10	78.7603	78.7622	78.7936	78.7929	78.9118	78.9124
.94673E+10	76.1651	76.1664	76.1878	76.1873	76.2695	76.2699
.12623E+11	74.7312	74.7322	74.7495	74.7491	74.8158	74.8162
.15779E+11	73.6511	73.6520	73.6662	73.6659	73.7212	73.7215
.18935E+11	72.5377	72.5384	72.5502	72.5499	72.5958	72.5961
.22090E+11	71.5266	71.5271	71.5369	71.5366	71.5748	71.5750
.25246E+11	70.5976	70.5981	70.6061	70.6060	70.6377	70.6378
.28402E+11	69.7573	69.7577	69.7643	69.7642	69.7905	69.7907
.31558E+11	69.0107	69.0111	69.0166	69.0164	69.0383	69.0384

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.600
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1055	81.4509	86.0634	87.4832	84.2283	74.8348
.20000E-05	67.1039	81.4488	86.0609	87.4806	84.2258	74.8326
31.558	67.1039	81.4488	86.0609	87.4806	84.2258	74.8325
.31558E+07	74.5468	87.7672	92.0043	93.2772	90.2242	81.4748
.63116E+07	78.2114	90.7381	94.7502	95.9408	93.0192	84.6815
.94673E+07	80.7081	92.6978	96.5380	97.6684	94.8517	86.8401
.12623E+08	82.6192	94.1591	97.8560	98.9375	96.2106	88.4759
.15779E+08	84.1679	95.3186	98.8920	99.9322	97.2842	89.7917
.18935E+08	85.4678	96.2751	99.7398	100.744	98.1666	90.8896
.22090E+08	86.5860	97.0857	100.453	101.426	98.9122	91.8293
.25246E+08	87.5751	97.7992	101.080	102.024	99.5682	92.6602
.28402E+08	88.4583	98.4318	101.633	102.552	100.149	93.4008
.31558E+08	89.2572	99.0018	102.131	103.027	100.673	94.0704
.63115E+08	94.7919	103.030	105.683	106.429	104.402	98.7713
.94673E+08	98.2251	105.688	108.092	108.761	106.908	101.784
.12623E+09	100.635	107.623	109.874	110.497	108.752	103.939
.15779E+09	102.415	109.070	111.213	111.803	110.135	105.542
.18935E+09	103.746	110.142	112.202	112.767	111.159	106.738
.22090E+09	104.759	110.940	112.931	113.475	111.918	107.640
.25246E+09	105.590	111.583	113.513	114.039	112.527	108.375
.28402E+09	106.031	111.863	113.742	114.253	112.779	108.736
.31558E+09	106.260	111.947	113.780	114.279	112.839	108.894
.63115E+09	105.913	110.470	111.951	112.354	111.187	108.015
.94673E+09	103.390	107.113	108.333	108.667	107.706	105.113
.12623E+10	99.9848	103.057	104.073	104.353	103.555	101.415
.15779E+10	96.8120	99.3520	100.198	100.433	99.7703	98.0011
.18935E+10	94.1080	96.2126	96.9178	97.1159	96.5641	95.0984
.22090E+10	91.8003	93.5486	94.1375	94.3040	93.8441	92.6269
.25246E+10	89.5770	91.0388	91.5337	91.6745	91.2889	90.2716
.28402E+10	87.8151	89.0431	89.4606	89.5800	89.2553	88.4010
.31558E+10	86.3493	87.3881	87.7424	87.8442	87.5690	86.8465
.63115E+10	79.4139	79.7547	79.8726	79.9073	79.8164	79.5798
.94673E+10	76.6154	76.8498	76.9313	76.9554	76.8928	76.7304
.12623E+11	75.0964	75.2864	75.3526	75.3723	75.3215	75.1900
.15779E+11	73.9533	74.1102	74.1651	74.1814	74.1395	74.0309
.18935E+11	72.7884	72.9185	72.9640	72.9776	72.9429	72.8529
.22090E+11	71.7346	71.8424	71.8802	71.8916	71.8628	71.7882
.25246E+11	70.7702	70.8596	70.8910	70.9005	70.8766	70.8148
.28402E+11	69.9006	69.9747	70.0007	70.0086	69.9888	69.9376
.31558E+11	69.1297	69.1912	69.2129	69.2194	69.2030	69.1606

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.610
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP sb4oose	8787 TEMP ib4iose	8902 TEMP ib4oose	9786 TEMP ob4oose
.10000E-05	74.6938	52.4004	52.1774	34.3560
.20000E-05	74.6915	52.3994	52.1764	34.3559
.31558E+07	74.6915	52.3992	52.1762	34.3558
.63116E+07	81.3391	61.2844	61.0688	45.1442
.94673E+07	84.5502	65.7737	65.5645	50.7279
.12623E+08	86.7128	68.8888	68.6854	54.6599
.15779E+08	88.3521	71.3066	71.1084	57.7439
.18935E+08	89.6711	73.2865	73.0931	60.2880
.22090E+08	90.7718	74.9621	74.7730	62.4526
.25246E+08	91.7142	76.4132	76.2282	64.3351
.28402E+08	92.5475	77.6983	77.5170	66.0018
.31558E+08	93.2904	78.8483	78.6705	67.4945
.63115E+08	93.9620	79.8894	79.7147	68.8454
.94673E+08	98.6772	86.9911	86.8381	77.9175
.12623E+09	101.697	91.2191	91.0773	83.1185
.15779E+09	103.857	94.1117	93.9770	86.5934
.18935E+09	105.463	96.2283	96.0988	89.1133
.22090E+09	106.662	97.8188	97.6935	91.0132
.25246E+09	107.566	99.0446	98.9228	92.4932
.28402E+09	108.303	100.062	99.9437	93.7292
.31558E+09	108.666	100.659	100.543	94.5130
.63115E+09	108.826	101.025	100.912	95.0453
.94673E+09	107.960	101.736	101.646	97.0253
.12623E+10	105.068	99.9781	99.9056	96.1739
.15779E+10	101.379	97.1633	97.1047	94.0511
.18935E+10	97.9720	94.4738	94.4264	91.9183
.22090E+10	95.0747	92.1664	92.1277	90.0607
.25246E+10	92.6074	90.1844	90.1528	88.4433
.28402E+10	90.2555	88.2226	88.1965	86.7718
.31558E+10	88.3876	86.6752	86.6535	85.4600
.63115E+10	86.8354	85.3834	85.3653	84.3579
.94673E+10	79.5763	79.0941	79.0884	78.7603
.12623E+11	76.7280	76.3944	76.3906	76.1651
.15779E+11	75.1881	74.9169	74.9138	74.7312
.18935E+11	74.0293	73.8046	73.8021	73.6511
.22090E+11	72.8516	72.6649	72.6628	72.5377
.25246E+11	71.7872	71.6320	71.6303	71.5266
.28402E+11	70.8140	70.6850	70.6836	70.5976
.31558E+11	69.9369	69.8298	69.8286	69.7573
	69.1600	69.0709	69.0699	69.0107

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 35878.820 TIME= 13:49:09
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose

VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2874 TEMP	otwoose	34.83	31.56	97.18	.6312E+09
3 NSOL	2610 TEMP	otwiose	35.20	31.56	97.29	.6312E+09
4 NSOL	2556 TEMP	itwoose	35.58	31.56	97.41	.6312E+09
5 NSOL	2504 TEMP	itwiose	35.90	31.56	97.50	.6312E+09
6 NSOL	563 TEMP	stwoose	38.94	31.56	98.35	.6312E+09
7 NSOL	2186 TEMP	stwiose	39.22	31.56	98.44	.6312E+09
8 NSOL	2150 TEMP	htwiose	48.36	31.56	101.0	.6312E+09
9 NSOL	2151 TEMP	gtwiose	53.52	31.56	102.5	.6312E+09
10 NSOL	126 TEMP	c0wiose	56.92	31.56	103.4	.6312E+09
11 NSOL	2085 TEMP	gbwiose	57.96	31.56	103.6	.6312E+09
12 NSOL	2086 TEMP	gbwoose	55.97	31.56	103.0	.6312E+09
13 NSOL	2084 TEMP	sbwiose	52.65	31.56	101.9	.6312E+09
14 NSOL	660 TEMP	sbwoose	52.51	31.56	101.8	.6312E+09
15 NSOL	2236 TEMP	ibwiose	52.28	31.56	101.7	.6312E+09
16 NSOL	2272 TEMP	ibwoose	52.08	31.56	101.6	.6312E+09
17 NSOL	2874 TEMP	obwoose	34.83	31.56	97.18	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.960
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwiose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	34.8287	35.2012	35.5766	35.9000	38.9389	39.2232
.20000E-05	34.8285	35.2010	35.5765	35.8998	38.9386	39.2229
31.558	34.8285	35.2010	35.5764	35.8997	38.9385	39.2228
.31558E+07	45.5853	45.9293	46.2752	46.5725	49.3296	49.5883
.63116E+07	51.1476	51.4735	51.8007	52.0818	54.6698	54.9130
.94673E+07	55.0624	55.3739	55.6866	55.9549	58.4138	58.6451
.12623E+08	58.1316	58.4310	58.7314	58.9890	61.3411	61.5626
.15779E+08	60.6627	60.9517	61.2414	61.4898	63.7505	63.9635
.18935E+08	62.8158	63.0955	63.3759	63.6161	65.7969	66.0026
.22090E+08	64.6879	64.9593	65.2312	65.4643	67.5741	67.7732

.25246E+08	66.3452	66.6093	66.8737	67.1002	69.1472	69.3404
.28402E+08	67.8294	68.0867	68.3443	68.5650	70.5551	70.7431
.31558E+08	69.1725	69.4237	69.6751	69.8904	71.8290	72.0122
.63115E+08	78.1938	78.4054	78.6166	78.7973	80.4057	80.5581
.94673E+08	83.3693	83.5608	83.7520	83.9153	85.3596	85.4968
.12623E+09	86.8287	87.0082	87.1873	87.3402	88.6861	88.8140
.15779E+09	89.3377	89.5089	89.6794	89.8251	91.1025	91.2240
.18935E+09	91.2291	91.3937	91.5577	91.6977	92.9223	93.0388
.22090E+09	92.7020	92.8611	93.0196	93.1549	94.3356	94.4480
.25246E+09	93.9317	94.0861	94.2398	94.3710	95.5137	95.6225
.28402E+09	94.7099	94.8601	95.0095	95.1369	96.2466	96.3523
.31558E+09	95.2371	95.3834	95.5289	95.6530	96.7330	96.8359
.63115E+09	97.1764	97.2918	97.4066	97.5045	98.3550	98.4362
.94673E+09	96.2949	96.3875	96.4796	96.5582	97.2426	97.3080
.12623E+10	94.1488	94.2238	94.2984	94.3621	94.9194	94.9726
.15779E+10	91.9976	92.0586	92.1192	92.1711	92.6267	92.6702
.18935E+10	90.1254	90.1752	90.2248	90.2672	90.6411	90.6768
.22090E+10	88.4963	88.5372	88.5779	88.6128	88.9210	88.9504
.25246E+10	86.8157	86.8495	86.8832	86.9121	87.1680	87.1924
.28402E+10	85.4964	85.5246	85.5527	85.5768	85.7906	85.8110
.31558E+10	84.3885	84.4122	84.4358	84.4560	84.6361	84.6533
.63115E+10	78.7700	78.7776	78.7851	78.7915	78.8496	78.8551
.94673E+10	76.1717	76.1768	76.1820	76.1863	76.2261	76.2298
.12623E+11	74.7365	74.7406	74.7447	74.7483	74.7804	74.7834
.15779E+11	73.6555	73.6589	73.6623	73.6652	73.6917	73.6942
.18935E+11	72.5413	72.5441	72.5469	72.5493	72.5712	72.5733
.22090E+11	71.5295	71.5319	71.5342	71.5362	71.5543	71.5560
.25246E+11	70.6001	70.6020	70.6039	70.6056	70.6206	70.6220
.28402E+11	69.7593	69.7609	69.7625	69.7638	69.7763	69.7775
.31558E+11	69.0124	69.0137	69.0150	69.0162	69.0265	69.0274

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.970
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.3590	53.5192	56.9222	57.9651	55.9693	52.6514
.20000E-05	48.3583	53.5182	56.9209	57.9638	55.9681	52.6504
31.558	48.3581	53.5180	56.9207	57.9636	55.9679	52.6502
.31558E+07	57.8762	62.5661	65.6442	66.5314	64.6479	61.5454
.63116E+07	62.6926	67.1001	69.9866	70.7930	68.9910	66.0342
.94673E+07	66.0372	70.2292	72.9709	73.7206	71.9861	69.1467
.12623E+08	68.6341	72.6477	75.2701	75.9753	74.2994	71.5608
.15779E+08	70.7608	74.6215	77.1421	77.8108	76.1869	73.5367
.18935E+08	72.5603	76.2872	78.7190	79.3568	77.7796	75.2082
.22090E+08	74.1182	77.7263	80.0793	80.6904	79.1555	76.6553
.25246E+08	75.4964	78.9987	81.2819	81.8696	80.3728	77.9366
.28402E+08	76.7286	80.1356	82.3557	82.9227	81.4608	79.0830
.31558E+08	77.8432	81.1635	83.3264	83.8749	82.4451	80.1206
.63115E+08	85.3965	88.1593	89.9550	90.3887	89.1710	87.1983
.94673E+08	89.8408	92.3250	93.9376	94.3160	93.2072	91.4140
.12623E+09	92.8610	95.1777	96.6799	97.0255	95.9832	94.2993
.15779E+09	95.0645	97.2641	98.6896	99.0129	98.0175	96.4107
.18935E+09	96.7196	98.8289	100.195	100.502	99.5433	97.9967
.22090E+09	97.9966	100.031	101.348	101.641	100.714	99.2183
.25246E+09	99.0572	101.027	102.301	102.583	101.683	100.232
.28402E+09	99.6882	101.601	102.838	103.111	102.236	100.825
.31558E+09	100.083	101.946	103.150	103.415	102.562	101.187
.63115E+09	100.997	102.468	103.420	103.629	102.953	101.862
.94673E+09	99.3722	100.560	101.330	101.501	100.956	100.076
.12623E+10	96.6559	97.6252	98.2551	98.3976	97.9543	97.2386

.15779E+10	94.0479	94.8417	95.3582	95.4773	95.1161	94.5323
.18935E+10	91.8089	92.4613	92.8864	92.9861	92.6905	92.2122
.22090E+10	89.8841	90.4223	90.7734	90.8569	90.6141	90.2207
.25246E+10	87.9685	88.4158	88.7080	88.7785	88.5775	88.2515
.28402E+10	86.4598	86.8338	87.0782	87.1379	86.9704	86.6985
.31558E+10	85.1998	85.5149	85.7211	85.7718	85.6311	85.4025
.63115E+10	79.0315	79.1332	79.1999	79.2171	79.1724	79.0994
.94673E+10	76.3506	76.4201	76.4658	76.4778	76.4475	76.3978
.12623E+11	74.8810	74.9372	74.9742	74.9840	74.9596	74.9196
.15779E+11	73.7747	73.8211	73.8516	73.8598	73.8397	73.8068
.18935E+11	72.6399	72.6783	72.7036	72.7104	72.6938	72.6666
.22090E+11	71.6112	71.6429	71.6638	71.6695	71.6559	71.6334
.25246E+11	70.6677	70.6939	70.7113	70.7160	70.7047	70.6862
.28402E+11	69.8153	69.8370	69.8514	69.8553	69.8460	69.8307
.31558E+11	69.0588	69.0768	69.0887	69.0920	69.0843	69.0716

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.980
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP	2236 TEMP	2272 TEMP	2874 TEMP
	sbwoose	ibwiose	ibwoose	obwoose
.10000E-05	52.5093	52.2809	52.0847	34.8287
.20000E-05	52.5083	52.2799	52.0837	34.8285
31.558	52.5081	52.2797	52.0835	34.8285
.31558E+07	61.4079	61.1871	60.9973	45.5853
.63116E+07	65.9009	65.6868	65.5027	51.1476
.94673E+07	69.0171	68.8090	68.6301	55.0624
.12623E+08	71.4346	71.2320	71.0577	58.1316
.15779E+08	73.4137	73.2160	73.0461	60.6627
.18935E+08	75.0881	74.8950	74.7291	62.8158
.22090E+08	76.5378	76.3490	76.1867	64.6879
.25246E+08	77.8216	77.6367	77.4777	66.3452
.28402E+08	78.9702	78.7889	78.6330	67.8294
.31558E+08	80.0099	79.8320	79.6789	69.1725
.63115E+08	87.1016	86.9462	86.8126	78.1938
.94673E+08	91.3246	91.1809	91.0573	83.3693
.12623E+09	94.2144	94.0779	93.9604	86.8287
.15779E+09	96.3289	96.1976	96.0845	89.3377
.18935E+09	97.9175	97.7903	97.6808	91.2291
.22090E+09	99.1414	99.0177	98.9113	92.7020
.25246E+09	100.157	100.037	99.9331	93.9317
.28402E+09	100.752	100.634	100.533	94.7099
.31558E+09	101.115	101.001	100.902	95.2371
.63115E+09	101.805	101.714	101.636	97.1764
.94673E+09	100.030	99.9573	99.8945	96.2949
.12623E+10	97.2021	97.1434	97.0929	94.1488
.15779E+10	94.5028	94.4555	94.4147	91.9976
.18935E+10	92.1883	92.1499	92.1168	90.1254
.22090E+10	90.2011	90.1698	90.1428	88.4963
.25246E+10	88.2355	88.2097	88.1875	86.8157
.28402E+10	86.6852	86.6639	86.6455	85.4964
.31558E+10	85.3914	85.3735	85.3582	84.3885
.63115E+10	79.0960	79.0904	79.0856	78.7700
.94673E+10	76.3955	76.3917	76.3885	76.1717
.12623E+11	74.9177	74.9147	74.9121	74.7365
.15779E+11	73.8052	73.8028	73.8007	73.6555
.18935E+11	72.6654	72.6634	72.6616	72.5413
.22090E+11	71.6324	71.6307	71.6293	71.5295
.25246E+11	70.6853	70.6840	70.6828	70.6001
.28402E+11	69.8300	69.8289	69.8279	69.7593
.31558E+11	69.0711	69.0701	69.0693	69.0124

***** ROUTINE COMPLETED ***** CP = 35881.990

End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS= 30529
MAXIMUM RECORD NUMBER = 427
RECORD SIZE (I*4 WORDS) = 16384
PAGE FILE SIZE (MB) = 26.688

```

*-----*
|                                     |
|               ANSYS RUN COMPLETED               |
|-----|
|                                     |
|               REV. 5.0 A               HP 9000/7XX               |
|                                     |
| CP TIME      (sec) =    35906.710    TIME = 13:50:00             |
| ELAPSED TIME (sec) =    60881.000    DATE  = 11/04/95             |
|                                     |
|-----|
*-----*
```


WELCOME TO THE ANSYS PROGRAM

***** ANSYS COMMAND LINE ARGUMENTS *****
 JOB NAME = glsh21h2
 MEMORY REQUESTED (MB) = 87.0
 BATCH MODE REQUESTED
 start.ans FILE

***** ANSYS DYNAMIC MEMORY ALLOCATION *****
 WORK SPACE REQUESTED = 22806528 87.000 MB COMMAND LINE
 MINIMUM WORK SPACE REQUIRED = 4718592 18.000 MB
 MINIMUM WORK SPACE RECOMMENDED = 6702496 25.568 MB
 WORK SPACE OBTAINED = 22806526 87.000 MB
 BYTES PER WORD = 4

***** NOTICE ***** THIS IS THE ANSYS GENERAL PURPOSE
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 RESULTS SHOULD BE IMMEDIATELY BROUGHT TO OUR ATTENTION.

ENTER /SHOW,device TO SET THE GRAPHICS DISPLAY TO device(e.g. X11,4207,ETC.)
 ENTER /MENU,ON TO START THE ANSYS MENU SYSTEM
 ENTER HELP FOR GENERAL ANSYS HELP INFORMATION
 1 /COM, *****
 2 /COM, ANSYS REVISION 5.0A 05/23/1995
 3 /COM, 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz
 4 /COM, *****
 5 /COM, *
 6 /COM, * File name: glsh21h2.inp
 7 /COM, * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container
 8 /COM, * No Helium Fill Gas - WP placed at mid point between SNF WP
 9 /COM, *
 10 /COM, * Material Property file: propsd1.dat
 11 /COM, *
 12 /COM, * SNF Conductivity file: TBD (NOT REQUIRED)
 13 /COM, *
 14 /COM, *
 15 /COM, * SNF Heat Loads file: hangls1.dat
 16 /COM, * Initial Heat Load: 870 W/canister
 17 /COM, *
 18 /COM, * Surface Temp. file: c21h5a.parm

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19 /COM, *      25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #3)*
20 /COM, *      5.0 m Diameter Drift with Concrete Invert
21 /COM, *      Drift spacing = 90.0 m
22 /COM, *      WP c/c spacing = 16.165 m
23 /COM, *
24 /COM, *****
25 /COM, Increase the number of database pages from 16 (256) to 32 Mb
26 /COM, DONT DO: /CONFIG,nvpag,512,
27 /COM, Work space must also be increased (-m 87) For Radiation Matix
28 /COM, *****
29 /TITLE, DHLW Glass Form Waste Package
30 /UNITS,SI,
31 /COM,
32 /COM, *****
33 /COM, Read in average effective conductivities from SNF model
34 /COM, No Need for File: PARRES,CHANGE,pwr15e,param,
35 /COM, Read in surface temps. from repository model
36 PARRES,CHANGE,c21h5a,param,
37 /COM, *****
38 /COM, Define Transient time parameters (AS PER THE PARAM FILE)
39 /COM, TM_START = start time (sec)
40 /COM, TMI* = time increment for solution (sec)
41 /COM, TME* = start and stop for time do-loops (sec)
42 /COM, Note: 1 year = 3.15576e7 seconds
43 /COM, TMTMAX = time of maximum cladding temperature
44 /COM, TM_START=(1.0E-6)*(3.15576E7)
45 /COM, TMI0=0.1*3.15576E7
46 /COM, TMI1=1.0*3.15576E7
47 /COM, TMI10=10.0*3.15576E7
48 /COM, TMI100=100.0*3.15576E7
49 /COM, TMI1000=1000.0*3.15576E7
50 /COM, TME0=0.9*3.15576E7+TM_START
51 /COM, TME1=TMI1+TM_START
52 /COM, TME9=9.0*3.15576E7+TM_START
53 /COM, TME10=TMI10+TM_START
54 /COM, TME50=50.0*3.15576E7+TM_START
55 /COM, TME90=90.0*3.15576E7+TM_START
56 /COM, TME100=TMI100+TM_START
57 /COM, TME1000=TMI1000+TM_START
58 /COM, *****
59 /COM, Define waste package parameters
60 /COM,
61 /COM, Required Constants:
62 /COM,
63 PI=3.141592654
64 SQT= SQRT(2.0)
65 /COM, Define emplacement parameters
66 /COM, DFRAD = radius of drift (m)
67 /COM, INVRT = height of invert backfill floor (m)
68 /COM, WPSPC = waste package c/c spacing (m)
69 /COM, OFFST = WP center below drift center (m)
70 /COM, XXX = X coordinate of invert drift wall intersection
71 /COM, YYY = Y coordinate of invert drift wall intersection
72 *SET,DFRAD,2.5,
73 *SET,INVRT,0.7,
74 *SET,WPSPC,16.165,
75 *SET,OFFST,0.1833,
76 XXX=SQRT(DFRAD**2-(DFRAD-INVRT)**2)
77 YYY=OFFST-DFRAD+INVRT
78 /COM,
79 /COM, Required container wall parameters:
80 /COM, DCIRD = disposal container inner radius (m)
81 /COM, OWALL = outer barrier thickness (m)
82 /COM, IWALL = inner barrier thickness (m)
83 /COM, DCORD = disposal container outer radius (m)
84 /COM, DCLEN = Disp. Cont. outside length
85 /COM, DCOLT = Disp. Cont. Outer Lid Thickness (m)
86 /COM, DCILT = Disp. Cont. Inner Lid Thickness (m)
87 /COM, DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)
88 /COM, DCILN = Disp. Cont. Inner Bar. Total length (m)

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89 /COM,          DCILI = Disp. Cont. Inner Bar. Inner length (m)
90 DCIRD=1569.0/1000.0/2.0
91 OWALL=0.0500
92 IWALL=0.0200
93 DCORD=DCIRD+IWALL+OWALL
94 DCLEN=3230.0/1000.0
95 DCOLT=55.0/1000.0
96 DCILT=25.0/1000.0
97 DCIOG=30.0/1000.0
98 DCILN=DCLEN-(2.0*DCOLT)-DCIOG
99 DCILI=3040.0/1000.0
100 /COM,
101 /COM,          Required ceramic and drum parameters:
102 /COM,          CDRAD = glass radius (m)
103 /COM,          CDHGT = glass hieght; hieght of fill (m)
104 /COM,          DRMIR = SRP Canister inner rad. (m)
105 /COM,          DRMOR = SRP Canister drum outer rad. (m)
106 /COM,          DRBTT = SRP Canister thickness at bottom of Canister (m)
107 /COM,          DRTPT = SRP Canister thickness at Top of Canister (m)
108 /COM,          DRLEN = SRP Canister outer length (m)
109 /COM,          DRILN = SRP Canister Inner length (m)
110 /COM,          DRGAP = SRP Canister axial gap with inner barrier at bot
111 /COM,          DRGPT = SRP Canister axial gap with inner barrier at top
112 /COM,          DRMOF = SRP Canister center line off set (m)
113 /COM,          PEAKF = Peaking factor to adjust Heat generation dist.
114 /COM,          FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length
115 CDRAD=((60.96/2.0)-0.95)/100.0
116 CDHGT=2.1549
117 DRMIR=CDRAD
118 DRMOR=60.96/100.0/2.0
119 DRBTT=15.0/1000.0
120 DRTPT=20.0/1000.0
121 DRLEN=2744.6/1000.0
122 DRILN=DRLEN-DRBTT-DRTPT
123 DRGAP=25.0/1000.0
124 DRGPT=DCILI-DRLEN-DRGAP
125 DRMOF=(DCIRD-(DRMOR*(SQT+1)))/(SQT+1)
126 PEAKF=1.00
127 FVOLU=PI*CDRAD*CDRAD*CDHGT
128 /COM,
129 /COM,          Define Extrude Distances as required:
130 /COM,          Bottom of WP
131 MIDPT=DCLEN/2.0
132 BTPT1=MIDPT-DCOLT
133 BTPT2=BTPT1-DCILT
134 BTPT3=BTPT2-DRGAP
135 BTPT4=BTPT3-DRBTT
136 /COM,          Top of WP
137 TPPT1=MIDPT-DCOLT
138 TPPT2=TPPT1-DCIOG
139 TPPT3=TPPT2-DCILT
140 TPPT4=TPPT3-(DCILI-DRGAP-DRLEN)
141 TPPT5=TPPT4-DRTPT
142 TPPT6=CDHGT-BTPT4
143 /COM,
144 /COM,
145 /COM,          *****
146 /COM,          Define calculated parameters
147 /COM,          ASSY = assembly heat production (W) f(yrs)
148 /COM,          FUEL = volumetric heat production (W/m3) f(yrs)
149 *SET,ASSY,
150 *DIM,ASSY, TABLE,101,1,
151 *DIM,FUEL, TABLE,101,1
152 /COM,
153 /COM,          *****
154 /COM,          Define 45 degree point of reference:
155 /COM,          TCO45 = x coord. WP Center Line Outer Pour Can. at 45 de
156 /COM,          TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
157 /COM,          HCI45 = x coord. WP Center Line side of center Glass at
158 /COM,          HCO45 = x coord. WP Edge side of center Glass at 45 deg.

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159 /COM,          CCO45 = x coord. Glass Center Line in Pour Can. at 45 de
160 /COM,          SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.
161 /COM,          SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
162 /COM,          MI45 = x coord. DCIRD at 45 deg.
163 /COM,          MO45 = x coord. DCIRD+IWALL at 45 deg.
164 /COM,          DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.
165 TCO45=(DRMOF+DRMOR-DRMOR/SQT)
166 TCI45=(DRMOF+DRMOR-DRMIR/SQT)
167 HCI45=(DRMOF+DRMOR-(0.5*DRMIR)/SQT)
168 HCO45=(DRMOF+DRMOR+(0.5*DRMIR)/SQT)
169 CCO45=(DRMOF+DRMOR)
170 SCO45=(DRMOF+DRMOR+DRMOR/SQT)
171 SCI45=(DRMOF+DRMOR+DRMIR/SQT)
172 MI45=DCIRD/SQT
173 MO45=(DCIRD+IWALL)/SQT
174 DO45=(DCIRD+IWALL+OWALL)/SQT
175 /COM,
176 /COM,          *****
177 /COM,          Define different element types
178 /PREP7
179 ETYPE
180 ET, 1,55,
181 ET, 2,70,
182 ET, 6,57,
183 ET, 7,32,
184 ET, 11,57,
185 ET, 16,57,
186 ET, 17,32,
187 ET, 18,50,1,
188 ET, 19,31,
189 ET, 26,57,
190 ET, 27,32,
191 ET, 36,57,
192 ET, 46,57,
193 /COM,          *****
194 /COM,          File props01.dat describes material properties
195 /COM,          and thier reference numbers
196 MPREAD,propsd1.dat,
197 /COM,          *****
198 /COM,          Define new material 15 for low thermal loading
199 /COM,          outer barrier of 70/30 Copper Nickel (C71500)
200 /COM,          Density:      DENS      (kg/m^3)
201 /COM,          Emissivity:    EMIS
202 /COM,          Conductivity:  KXX      (W/m/K)
203 /COM,          Specific Heat: C      (J/kg/K)
204 MPTEMP
205 MPTEMP, 1, .00000E+00,
206 /COM,          Density (lb/in^3 converted to kg/m^3)
207 MPDATA,DENS,15, 1,(0.323*2.768E+04),
208 /COM,          Emissivity
209 MPDATA,EMIS,15, 1, 0.40000E+00,
210 /COM,          Specific Heat (Btu/lb/F converted to J/kg/K)
211 MPDATA, C,15, 1,(0.09/2.3886E-04),
212 /COM,          Conductivity (Btu/hr/ft/F converted to W/m/K)
213 MPTEMP
214 MPTEMP, 1, (5.0/9.0*(68.0-32.0)), (5.0/9.0*(212.0-32.0)),
215 MPTEMP, 3, (5.0/9.0*(392.0-32.0)), (5.0/9.0*(572.0-32.0)),
216 MPTEMP, 5, (5.0/9.0*(752.0-32.0)), (5.0/9.0*(932.0-32.0)),
217 MPTEMP, 7, (5.0/9.0*(1112.0-32.0)), (5.0/9.0*(1292.0-32.0)),
218 MPDATA, KXX,15, 1, (17.0*1.7307), (16.9*1.7307),
219 MPDATA, KXX,15, 3, (19.7*1.7307), (22.3*1.7307),
220 MPDATA, KXX,15, 5, (24.9*1.7307), (27.8*1.7307),
221 MPDATA, KXX,15, 7, (30.7*1.7307), (33.6*1.7307),
222 /COM,          *****
223 /COM,          Read in single drum heat loads
224 /COM,          Calculate the volumetric heat generation
225 /COM,          (Assembly time is in years, FUEL is in seconds)
226 /INPUT,hangls1.dat
227 *VFACT,3.15576E7,
228 *MFUN,FUEL(1,0),COPY,ASSY(1,0),

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229 *VFACT,(PEAKF/FVOLUME),
230 *VFUN,FUEL(1),COPY,ASSY(1),
231 FUEL(0,1)=1.0
232 /COM, *****
233 /COM, Define LOCAL Coordinate system for canister orientation
234 /COM, if use CSYS,0, the P. Cans are 2x2,
235 /COM, if use CSYS,15, the P. Cans are 1x2x1
236 /COM,
237 /COM, LOCAL,15,0,0.0,0.0,0.0,45.0,0.0,0.0,
238 /COM, *****
239 /COM, Construct geometry for a single SRP Pour Canister
240 /COM, (K's 1 - 10 )
241 /COM, (L's 1 - 16 )
242 /COM, (A's 1 - 8 )
243 K, 1, 0.0, 0.0, 0.0,
244 K, 2, (DRMOF+DRMOR), (DRMOF+DRMOR), 0.0,
245 K, 3, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
246 K, 4, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
247 K, 5, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
248 K, 6, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
249 K, 7, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
250 K, 8, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
251 K, 9, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
252 K, 10, (DRMOF+DRMOR-DRMIR/SQT), (DRMOF+DRMOR-DRMIR/SQT), 0.0,
253 L, 3, 2,
254 L, 2, 6,
255 L, 4, 2,
256 L, 2, 5,
257 LARC, 6, 5,2,CDRAD,
258 LARC, 5, 4,2,CDRAD,
259 LARC, 4, 3,2,CDRAD,
260 LARC, 3, 6,2,CDRAD,
261 L, 7, 3,
262 L, 10, 6,
263 L, 9, 5,
264 L, 8, 4,
265 LARC, 7, 8,2,DRMOR,
266 LARC, 8, 9,2,DRMOR,
267 LARC, 9, 10,2,DRMOR,
268 LARC, 10, 7,2,DRMOR,
269 AL, 2, 4, 5,
270 AL, 1, 2, 8,
271 AL, 1, 3, 7,
272 AL, 3, 4, 6,
273 AL, 5, 10, 15, 11,
274 AL, 8, 9, 16, 10,
275 AL, 7, 12, 13, 9,
276 AL, 6, 11, 14, 12,
277 /COM, *****
278 /COM, Interior and WP, Next
279 /COM, (K's 11 - 19 )
280 /COM, (L's 17 - 34 )
281 /COM, (A's 9 - 16 )
282 K, 11, DCIRD, 0.0, 0.0,
283 K, 12, MI45, MI45, 0.0,
284 K, 13, 0.0, DCIRD, 0.0,
285 K, 14, (DCIRD+IWALL), 0.0, 0.0,
286 K, 15, MO45, MO45, 0.0,
287 K, 16, 0.0, (DCIRD+IWALL), 0.0,
288 K, 17, DCORD, 0.0, 0.0,
289 K, 18, DO45, DO45, 0.0,
290 K, 19, 0.0, DCORD, 0.0,
291 /COM,
292 L, 1, 7,
293 L, 10, 11,
294 L, 9, 12,
295 L, 8, 13,
296 L, 1, 13,
297 L, 1, 11,
298 LARC, 11, 12, 1, DCIRD,

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299 LARC,12,13,1,DCIRD,
300 L,11,14,
301 L,12,15,
302 L,16,13,
303 LARC,14,15,1,(DCIRD+IWALL),
304 LARC,15,16,1,(DCIRD+IWALL),
305 L,14,17,
306 L,15,18,
307 L,19,16,
308 LARC,18,17,1,DCORD,
309 LARC,19,18,1,DCORD,
310 /COM,
311 AL,22,18,16,17,
312 AL,23,19,15,18,
313 AL,24,20,14,19,
314 AL,21,17,13,20,
315 AL,23,25,28,26,
316 AL,24,26,29,27,
317 AL,28,30,33,31,
318 AL,29,31,34,32,
319 /COM, *****
320 /COM,      Set element shapes and sizes
321 /COM,
322 ESHAPE,2,
323 ESIZE,,1,
324 LSEL,S,LINE,, 1, 4,1,
325 LSEL,A,LINE,, 5, 8,1,
326 LSEL,A,LINE,,13,16,1,
327 LSEL,A,LINE,,21,24,1,
328 LSEL,A,LINE,,28,29,1,
329 LSEL,A,LINE,,33,34,1,
330 LESIZE,ALL,,, 4,
331 LSEL,S,LINE,, 9,12,1,
332 LESIZE,ALL,,, 1,
333 LSEL,S,LINE,,17,20,1,
334 LSEL,A,LINE,,25,27,1,
335 LSEL,A,LINE,,30,32,1,
336 LESIZE,ALL,,, 2,
337 LSEL,ALL,
338 /COM,
339 /COM, *****
340 /COM,      Mesh areas
341 /COM,      glass, stainless pour canister, He, IB, OB,
342 MAT,5,
343 TYPE,1,
344 AMESH, 1, 4,1
345 MAT,1,
346 TYPE,1,
347 AMESH, 5, 8,1
348 MAT, 7,
349 TYPE,1,
350 AMESH, 9,12,1
351 MAT,2,
352 TYPE,1,
353 AMESH,13,14,1
354 MAT,15,
355 TYPE,1,
356 AMESH,15,16,1
357 /COM, *****
358 /COM,      Set up paths to extrude 3-D volumes from 2-D surfaces
359 /COM,      (K's 20 - 31)
360 /COM,      (L's 35 - 46)
361 /COM,      Bottom direction first
362 K,20, 0.0, 0.0, (-1.0*BTPT4),
363 K,21, 0.0, 0.0, (-1.0*BTPT3),
364 K,22, 0.0, 0.0, (-1.0*BTPT2),
365 K,23, 0.0, 0.0, (-1.0*BTPT1),
366 K,24, 0.0, 0.0, (-1.0*MIDPT),
367 L, 1,20,
368 L,20,21,

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369 L,21,22,
370 L,22,23,
371 L,23,24,
372 /COM, Top direction Next
373 K,25, 0.0, 0.0, TPPT6,
374 K,26, 0.0, 0.0, TPPT5,
375 K,27, 0.0, 0.0, TPPT4,
376 K,28, 0.0, 0.0, TPPT3,
377 K,29, 0.0, 0.0, TPPT2,
378 K,30, 0.0, 0.0, TPPT1,
379 K,31, 0.0, 0.0, MIDPT,
380 L, 1,25,
381 L,25,26,
382 L,26,27,
383 L,27,28,
384 L,28,29,
385 L,29,30,
386 L,30,31,
387 /COM, *****
388 /COM, Set number of element divisions for extrusion into 3-D
389 /COM,
390 ESHAPE,2,
391 /COM, GLASS
392 LSEL,S,LINE,,35,
393 LESIZE,ALL,,, 3,
394 LSEL,S,LINE,,40,
395 LESIZE,ALL,,, 2,
396 /COM, Interior He Space
397 LSEL,S,LINE,,41,
398 LESIZE,ALL,,, 2,
399 /COM, Canister Shell
400 LSEL,S,LINE,,36,
401 LSEL,A,LINE,,42,
402 LESIZE,ALL,,, 1,
403 /COM, Interior WP He Space
404 LSEL,S,LINE,,37,
405 LESIZE,ALL,,, 2,
406 LSEL,S,LINE,,43,
407 LESIZE,ALL,,, 3,
408 /COM, Inner Barrier Lids
409 LSEL,S,LINE,,38,
410 LSEL,A,LINE,,44,
411 LESIZE,ALL,,, 2,
412 /COM, Outer/Inner Barrier Gap (HE)
413 LSEL,S,LINE,,45,
414 LESIZE,ALL,,, 2,
415 /COM, Outer Barrier Lids
416 LSEL,S,LINE,,39,
417 LSEL,A,LINE,,46,
418 LESIZE,ALL,,, 2,
419 LSEL,ALL,
420 /COM, *****
421 /COM, Reset coordinates if CSYS,15, option was used
422 /COM,
423 CSYS,0,
424 /COM, *****
425 /COM, Set up drift wall radiation matrix
426 /COM, (K's 32 - 34)
427 /COM, 1) Define K's for extrude (will not use)
428 K,32, 0.0, OFFST, 0.0,
429 K,33, 0.0, OFFST, (WPSPC/2.0),
430 K,34, 0.0, OFFST, -1*(WPSPC/2.0),
431 /COM, Define extrude lines (will not use)
432 /COM, (L's 47,48 )
433 L,32,33,
434 L,32,34,
435 /COM, Extrude drift 8 elements with smallest
436 /COM, elements at WP mid-length (will not use)
437 LESIZE,47,,,8,8.4
438 LESIZE,48,,,8,8.4

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439 /COM,                2) Define K's and lines for lines of drift wall
440 /COM,                (K's 35 - 39)
441 /COM,                (L's 49 - 53)
442 /COM,                Center Point
443 K,35,                XXX,                YYY, 0.0,
444 K,36,                DFRAD,                OFFST, 0.0,
445 K,37,                0.0,( OFFST+DFRAD), 0.0,
446 K,38,(0.0-DFRAD),    OFFST, 0.0,
447 K,39, (0.0-XXX),      YYY, 0.0,
448 LARC,35,36,32,DFRAD,
449 LARC,36,37,32,DFRAD,
450 LARC,37,38,32,DFRAD,
451 LARC,38,39,32,DFRAD,
452 L,39,35,
453 /COM,                Set element spacing for meshing
454 LESIZE,49,,,4,
455 LESIZE,50,,,4,
456 LESIZE,51,,,4,
457 LESIZE,52,,,4,
458 LESIZE,53,,,4,
459 /COM,                Back Point
460 /COM,                (K's 40 - 44)
461 /COM,                (L's 54 - 58)
462 K,40,                XXX,                YYY, -1*(WSPC/2.0),
463 K,41,                DFRAD,                OFFST, -1*(WSPC/2.0),
464 K,42,                0.0,( OFFST+DFRAD), -1*(WSPC/2.0),
465 K,43,(0.0-DFRAD),    OFFST, -1*(WSPC/2.0),
466 K,44, (0.0-XXX),      YYY, -1*(WSPC/2.0),
467 LARC,40,41,34,DFRAD,
468 LARC,41,42,34,DFRAD,
469 LARC,42,43,34,DFRAD,
470 LARC,43,44,34,DFRAD,
471 L,44,40,
472 /COM,                Set element spacing for meshing
473 LESIZE,54,,,4,
474 LESIZE,55,,,4,
475 LESIZE,56,,,4,
476 LESIZE,57,,,4,
477 LESIZE,58,,,4,
478 /COM,                Front Point
479 /COM,                (K's 45 - 49)
480 /COM,                (L's 59 - 63)
481 K,45,                XXX,                YYY, (WSPC/2.0),
482 K,46,                DFRAD,                OFFST, (WSPC/2.0),
483 K,47,                0.0,( OFFST+DFRAD), (WSPC/2.0),
484 K,48,(0.0-DFRAD),    OFFST, (WSPC/2.0),
485 K,49, (0.0-XXX),      YYY, (WSPC/2.0),
486 LARC,45,46,33,DFRAD,
487 LARC,46,47,33,DFRAD,
488 LARC,47,48,33,DFRAD,
489 LARC,48,49,33,DFRAD,
490 L,49,45,
491 /COM,                Set element spacing for meshing
492 LESIZE,59,,,4,
493 LESIZE,60,,,4,
494 LESIZE,61,,,4,
495 LESIZE,62,,,4,
496 LESIZE,63,,,4,
497 /COM,                3) Create connecting lines for wall; make areas
498 /COM,                (L's 64 - 68 )
499 L,35,40,
500 L,36,41,
501 L,37,42,
502 L,38,43,
503 L,39,44,
504 LESIZE,64,,,8,8.4
505 LESIZE,65,,,8,8.4
506 LESIZE,66,,,8,8.4
507 LESIZE,67,,,8,8.4
508 LESIZE,68,,,8,8.4

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509 /COM, (L's 69 - 73 )
510 L,45,35,
511 L,46,36,
512 L,47,37,
513 L,48,38,
514 L,49,39,
515 LESIZE,69,,,8,0.119
516 LESIZE,70,,,8,0.119
517 LESIZE,71,,,8,0.119
518 LESIZE,72,,,8,0.119
519 LESIZE,73,,,8,0.119
520 /COM,
521 /COM, Define cylindrical coordinate system for rotations, etc.
522 LOCAL,11,1,0,0,0,0,0,
523 /COM, (A's 17 - 26 )
524 AL,49,65,54,64,
525 AL,50,66,55,65,
526 AL,51,67,56,66,
527 AL,52,68,57,67,
528 /COM,
529 AL,59,70,49,69,
530 AL,60,71,50,70,
531 AL,61,72,51,71,
532 AL,62,73,52,72,
533 /COM,
534 AL,53,64,58,68,
535 AL,63,69,53,73,
536 /COM,
537 CSYS,0,
538 /COM, 4) Set material type and Mesh areas
539 MAT, 6,
540 TYPE,11,
541 AMESH, 17, 24,1
542 MAT, 4,
543 TYPE,11,
544 AMESH, 25, 26,1
545 /COM, 5) Set 3-D radiation shell elements
546 TYPE,46,
547 ASEL,S,AREA,,17,26,1
548 NSLA,S,1,
549 ESURF,
550 ASEL,ALL,
551 LSEL,ALL,
552 KSEL,ALL,
553 /COM, *****
554 /COM, Construct geometry for WP TOP end
555 /COM, (K's 50 - 55 )
556 K,50, DCIRD, 0.0, TPPT4,
557 K,51, 0.0, DCIRD, TPPT4,
558 /COM,
559 K,52, (DCIRD+IWALL), 0.0, TPPT4,
560 K,53, 0.0, (DCIRD+IWALL), TPPT4,
561 /COM,
562 K,54, DCORD, 0.0, TPPT4,
563 K,55, 0.0, DCORD, TPPT4,
564 /COM,
565 /COM, (L's 74 - 79 )
566 L,27,50,
567 L,27,51,
568 L,50,52,
569 L,51,53,
570 L,52,54,
571 L,53,55,
572 /COM, (L's 80 - 82 )
573 LARC,50,51,27,DCIRD,
574 LARC,52,53,27,(DCIRD+IWALL),
575 LARC,54,55,27,DCORD,
576 /COM,
577 LSEL,S,LINE,,74,75,1,
578 LSEL,A,LINE,,80,82,1,

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579 LESIZE,ALL,,, 8,
580 LSEL,S,LINE,,76,79,1,
581 LESIZE,ALL,,, 2,
582 ASEL,ALL,
583 LSEL,ALL,
584 KSEL,ALL,
585 /COM, (A's 27 - 29 )
586 AL,74,75,80,
587 AL,80,76,81,77,
588 AL,81,78,82,79,
589 /COM, *****
590 /COM, Construct geometry for WP Bottom end
591 /COM, (K's 56 - 61 )
592 K,56, DCIRD, 0.0, (-1.0*BTPT3),
593 K,57, 0.0, DCIRD, (-1.0*BTPT3),
594 /COM,
595 K,58, (DCIRD+IWALL), 0.0, (-1.0*BTPT3),
596 K,59, 0.0, (DCIRD+IWALL), (-1.0*BTPT3),
597 /COM,
598 K,60, DCORD, 0.0, (-1.0*BTPT3),
599 K,61, 0.0, DCORD, (-1.0*BTPT3),
600 /COM,
601 /COM, (L's 83 - 88)
602 L,21,56,
603 L,21,57,
604 L,56,58,
605 L,57,59,
606 L,58,60,
607 L,59,61,
608 /COM, (L's 89 - 91 )
609 LARC,56,57,21,DCIRD,
610 LARC,58,59,21,(DCIRD+IWALL),
611 LARC,60,61,21,DCORD,
612 /COM,
613 LSEL,S,LINE,,83,84,1,
614 LSEL,A,LINE,,89,91,1,
615 LESIZE,ALL,,, 8,
616 LSEL,S,LINE,,85,88,1,
617 LESIZE,ALL,,, 2,
618 ASEL,ALL,
619 LSEL,ALL,
620 KSEL,ALL,
621 /COM, (A's 30 - 32 )
622 AL,83,84,89,
623 AL,89,85,90,86,
624 AL,90,87,91,88,
625 /COM, Mesh areas
626 /COM, Top and Bottom WP Ends
627 ESHAPE,2,
628 MAT,15,
629 TYPE,1,
630 AMESH,27,32,1
631 /COM, *****
632 /COM, Extrude 2-D WP Interior into 3-D Space
633 /COM, (V's 1 - 32)
634 /COM, Bottom WP Area
635 VDRAG, 1, 2, 3, 4,,,35,36,,,,
636 VDRAG, 5, 6, 7, 8,,,35,36,,,,
637 VDRAG, 9,10,11,12,,,35,36,,,,
638 VDRAG,13,14,,,,,35,36,,,,
639 VDRAG,15,16,,,,,35,36,,,,
640 NUMMRG,KP,
641 /COM, (V's 33 - 80)
642 /COM, Top WP Area
643 VDRAG, 1, 2, 3, 4,,,40,41,42,,,,
644 VDRAG, 5, 6, 7, 8,,,40,41,42,,,,
645 VDRAG, 9,10,11,12,,,40,41,42,,,,
646 VDRAG,13,14,,,,,40,41,42,,,,
647 VDRAG,15,16,,,,,40,41,42,,,,
648 NUMMRG,KP,

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649 /COM,          Extrude 2-D WP Ends into 3-D Space
650 /COM,          (V's 81 - 89)
651 /COM,          Bottom WP Area
652 VDRAG,30,31,32,,,,,37,38,39,
653 NUMMRG,KP,
654 /COM,          (V's 90 - 101)
655 /COM,          Top WP Area
656 VDRAG,27,28,29,,,,,43,44,45,46,
657 NUMMRG,KP,
658 /COM,          *****
659 /COM,          Mesh Volumes - which are solid volumes - leave gaps to last
660 /COM,          Glass First
661 ESHAPE,2,
662 MAT, 5,
663 TYPE,2,
664 VMESH, 1, 4,1
665 VMESH, 33, 36,1
666 /COM,          SS in Pour Can.
667 ESHAPE,2,
668 MAT, 1,
669 TYPE,2,
670 VMESH, 5, 8,1
671 VMESH, 9, 16,1
672 VMESH, 41, 44,1
673 VMESH, 45, 56,1
674 /COM,          In. Bar. Material for WP
675 ESHAPE,2,
676 MAT, 2,
677 TYPE,2,
678 VMESH, 25, 28,1
679 VMESH, 69, 74,1
680 VMESH, 82,
681 VMESH, 84, 85,1
682 VMESH, 91,
683 VMESH, 93, 94,1
684 /COM,          Out. Bar. Material for WP
685 ESHAPE,2,
686 MAT,15,
687 TYPE,2,
688 VMESH, 29, 32,1
689 VMESH, 75, 80,1
690 VMESH, 83,
691 VMESH, 86, 89,1
692 VMESH, 92, 95,3
693 VMESH, 98,101,1
694 /COM,          DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
695 /COM,          AND NO RADIATION TRANSFER IN THESE SPACES
696 /COM,          He/Air in Pour Can.
697 /COM,          ESHAPE,2,
698 /COM,          MAT, 7,
699 /COM,          TYPE,2,
700 /COM,          VMESH, 37, 40,1
701 /COM,          He/Air in WP I/O Bar. Gap - NO RADIATION
702 /COM,          ESHAPE,2,
703 /COM,          MAT, 7,
704 /COM,          TYPE,2,
705 /COM,          VMESH, 96, 97,1
706 /COM,          *****
707 /COM,          Clear 2-D mesh
708 ASEL,S,TYPE,,1,
709 ACLEAR,ALL,
710 ASEL,ALL,
711 ESEL,ALL,
712 NSEL,ALL,
713 VSEL,ALL,
714 LSEL,ALL,
715 NUMMRG,ELEM,
716 NUMMRG,NODE,
717 NUMMRG,KP,
718 /COM,          *****

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719 /COM,      Rotate this set into the other quadrants about the Z axis
720 /COM,      (V's 102 - 404)
721 /COM,
722 CSYS,11,
723 /COM,
724 /COM,      (V's 102 - 202)
725 VGEN,2,1,101,1,0.0, 90.0,0.0,0.0,0,
726 /COM,      (V's 203 - 303)
727 VGEN,2,1,101,1,0.0,180.0,0.0,0.0,0,
728 /COM,      (V's 304 - 404)
729 VGEN,2,1,101,1,0.0,270.0,0.0,0.0,0,
730 CSYS,0,
731 NUMMRG,ELEM,
732 NUMMRG,NODE,
733 NUMMRG,KP,
734 /COM, *****
735 /COM,      Define Some LOCAL Coordinate Systems for use
736 /COM,      IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
737 /COM,      POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS
738 /COM,
739 LOCAL,21,0,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
740 LOCAL,22,0,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
741 LOCAL,23,0,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
742 LOCAL,24,0,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
743 /COM,
744 LOCAL,31,1,      (DRMOF+DRMOR),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
745 LOCAL,32,1,      (DRMOF+DRMOR),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
746 LOCAL,33,1,(-1.0*(DRMOF+DRMOR)),(-1.0*(DRMOF+DRMOR)),0.0,0.0,0.0,0.0,
747 LOCAL,34,1,(-1.0*(DRMOF+DRMOR)),      (DRMOF+DRMOR),0.0,0.0,0.0,0.0,
748 /COM,
749 CSYS,0,
750 /COM, *****
751 /COM,      Define Elements for radiation
752 /COM, In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO
753 /COM, TYPE,6,
754 /COM, VSEL,S,MAT,,5,
755 /COM, ASEL,S,EXT,
756 /COM, CSYS,31,
757 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
758 /COM, CSYS,0,
759 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
760 /COM, NSLA,S,1,
761 /COM, ESURF,
762 /COM,      Inner SS. Lid of Can. #1
763 /COM, TYPE,6,
764 /COM, VSEL,S,MAT,,1,
765 /COM, ASEL,S,EXT,
766 /COM, CSYS,31,
767 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
768 /COM, CSYS,0,
769 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
770 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
771 /COM, NSLA,S,1,
772 /COM, ESURF,
773 /COM,      Inner SS. Side of Can. #1
774 /COM, TYPE,6,
775 /COM, VSEL,S,MAT,,1,
776 /COM, ASEL,S,EXT,
777 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
778 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
779 /COM, CSYS,31,
780 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
781 /COM, CSYS,0,
782 /COM, NSLA,S,1,
783 /COM, ESURF,
784 /COM, *****
785 /COM,      Define Elements for radiation
786 /COM,      In Pour Canister First; Glass Surf. Can #2
787 /COM, TYPE,6,
788 /COM, VSEL,S,MAT,,5,

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789 /COM, ASEL,S,EXT,
790 /COM, CSYS,32,
791 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
792 /COM, CSYS,0,
793 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
794 /COM, NSLA,S,1,
795 /COM, ESURF,
796 /COM, Inner SS. Lid of Can. #2
797 /COM, TYPE,6,
798 /COM, VSEL,S,MAT,,1,
799 /COM, ASEL,S,EXT,
800 /COM, CSYS,32,
801 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
802 /COM, CSYS,0,
803 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
804 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
805 /COM, NSLA,S,1,
806 /COM, ESURF,
807 /COM, Inner SS. Side of Can. #2
808 /COM, TYPE,6,
809 /COM, VSEL,S,MAT,,1,
810 /COM, ASEL,S,EXT,
811 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
812 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
813 /COM, CSYS,32,
814 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
815 /COM, CSYS,0,
816 /COM, NSLA,S,1,
817 /COM, ESURF,
818 /COM, *****
819 /COM, Define Elements for radiation
820 /COM, In Pour Canister First; Glass Surf. Can #3
821 /COM, TYPE,6,
822 /COM, VSEL,S,MAT,,5,
823 /COM, ASEL,S,EXT,
824 /COM, CSYS,33,
825 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
826 /COM, CSYS,0,
827 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
828 /COM, NSLA,S,1,
829 /COM, ESURF,
830 /COM, Inner SS. Lid of Can. #3
831 /COM, TYPE,6,
832 /COM, VSEL,S,MAT,,1,
833 /COM, ASEL,S,EXT,
834 /COM, CSYS,33,
835 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
836 /COM, CSYS,0,
837 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
838 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
839 /COM, NSLA,S,1,
840 /COM, ESURF,
841 /COM, Inner SS. Side of Can. #3
842 /COM, TYPE,6,
843 /COM, VSEL,S,MAT,,1,
844 /COM, ASEL,S,EXT,
845 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
846 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
847 /COM, CSYS,33,
848 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
849 /COM, CSYS,0,
850 /COM, NSLA,S,1,
851 /COM, ESURF,
852 /COM, *****
853 /COM, Define Elements for radiation
854 /COM, In Pour Canister First; Glass Surf. Can #4
855 /COM, TYPE,6,
856 /COM, VSEL,S,MAT,,5,
857 /COM, ASEL,S,EXT,
858 /COM, CSYS,34,

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859 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
860 /COM, CSYS,0,
861 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
862 /COM, NSLA,S,1,
863 /COM, ESURF,
864 /COM, Inner SS. Lid of Can. #4
865 /COM, TYPE,6,
866 /COM, VSEL,S,MAT,,1,
867 /COM, ASEL,S,EXT,
868 /COM, CSYS,34,
869 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
870 /COM, CSYS,0,
871 /COM, ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
872 /COM, ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
873 /COM, NSLA,S,1,
874 /COM, ESURF,
875 /COM, Inner SS. Side of Can. #4
876 /COM, TYPE,6,
877 /COM, VSEL,S,MAT,,1,
878 /COM, ASEL,S,EXT,
879 /COM, ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
880 /COM, ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
881 /COM, CSYS,34,
882 /COM, ASEL,U,LOC,X,(DRMIR+0.0001),100.0
883 /COM, CSYS,0,
884 /COM, NSLA,S,1,
885 /COM, ESURF,
886 /COM, *****
887 /COM, Define Elements for radiation - Between Can and IB
888 /COM, Pour Can. Surf.
889 /COM, Top Can #1
890 TYPE,26,
891 VSEL,S,MAT,,1,
892 ASEL,S,EXT,
893 CSYS,31,
894 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
895 CSYS,0,
896 ASEL,R,LOC,Z,TPPT4,TPPT4,
897 NSLA,S,1,
898 ESURF,
899 /COM, Sides Can #1
900 TYPE,26,
901 VSEL,S,MAT,,1,
902 ASEL,S,EXT,
903 ASEL,U,LOC,Z,(TPPT4-0.0001),100.0,
904 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),-100.0,
905 CSYS,31,
906 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
907 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
908 CSYS,0,
909 NSLA,S,1,
910 ESURF,
911 /COM, Bottom Can #1
912 TYPE,26,
913 VSEL,S,MAT,,1,
914 ASEL,S,EXT,
915 CSYS,31,
916 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
917 CSYS,0,
918 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
919 NSLA,S,1,
920 ESURF,
921 /COM, -----
922 /COM, Top Can #2
923 TYPE,26,
924 VSEL,S,MAT,,1,
925 ASEL,S,EXT,
926 CSYS,32,
927 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
928 CSYS,0,

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929 ASEL,R,LOC,Z,TPPT4,TPPT4,
930 NSLA,S,1,
931 ESURF,
932 /COM, Sides Can #2
933 TYPE,26,
934 VSEL,S,MAT,,1,
935 ASEL,S,EXT,
936 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
937 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
938 CSYS,32,
939 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
940 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
941 CSYS,0,
942 NSLA,S,1,
943 ESURF,
944 /COM, Bottom Can #2
945 TYPE,26,
946 VSEL,S,MAT,,1,
947 ASEL,S,EXT,
948 CSYS,32,
949 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
950 CSYS,0,
951 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
952 NSLA,S,1,
953 ESURF,
954 /COM, -----
955 /COM, Top Can #3
956 TYPE,26,
957 VSEL,S,MAT,,1,
958 ASEL,S,EXT,
959 CSYS,33,
960 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
961 CSYS,0,
962 ASEL,R,LOC,Z,TPPT4,TPPT4,
963 NSLA,S,1,
964 ESURF,
965 /COM, Sides Can #3
966 TYPE,26,
967 VSEL,S,MAT,,1,
968 ASEL,S,EXT,
969 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
970 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
971 CSYS,33,
972 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
973 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
974 CSYS,0,
975 NSLA,S,1,
976 ESURF,
977 /COM, Bottom Can #3
978 TYPE,26,
979 VSEL,S,MAT,,1,
980 ASEL,S,EXT,
981 CSYS,33,
982 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
983 CSYS,0,
984 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
985 NSLA,S,1,
986 ESURF,
987 /COM, -----
988 /COM, Top Can #4
989 TYPE,26,
990 VSEL,S,MAT,,1,
991 ASEL,S,EXT,
992 CSYS,34,
993 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
994 CSYS,0,
995 ASEL,R,LOC,Z,TPPT4,TPPT4,
996 NSLA,S,1,
997 ESURF,
998 /COM, Sides Can #4

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999 TYPE,26,
1000 VSEL,S,MAT,,1,
1001 ASEL,S,EXT,
1002 ASEL,U,LOC,Z,(TPPT4-0.001),100.0,
1003 ASEL,U,LOC,Z,(-1.0*BTPT3+0.001),-100.0,
1004 CSYS,34,
1005 ASEL,U,LOC,X,0.0,(DRMOR-0.0001),
1006 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1007 CSYS,0,
1008 NSLA,S,1,
1009 ESURF,
1010 /COM, Bottom Can #4
1011 TYPE,26,
1012 VSEL,S,MAT,,1,
1013 ASEL,S,EXT,
1014 CSYS,34,
1015 ASEL,U,LOC,X,(DRMOR+0.0001),100.0
1016 CSYS,0,
1017 ASEL,U,LOC,Z,(-1.0*BTPT3+0.0001),100.0,
1018 NSLA,S,1,
1019 ESURF,
1020 /COM, Inner Barrier Inside Surfaces
1021 TYPE,26,
1022 VSEL,S,MAT,,2,
1023 ASEL,S,EXT,
1024 ASEL,U,LOC,Z,(TPPT3+0.001),100,
1025 ASEL,U,LOC,Z,(-1.0*BTPT2-0.001),-100,
1026 CSYS,11,
1027 ASEL,U,LOC,X,(DCIRD+0.001),100,
1028 CSYS,0,
1029 NSLA,S,1,
1030 ESURF,
1031 /COM, *****
1032 /COM, Define Elements for radiation
1033 /COM, In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
1034 /COM, Top of Inner Barrier Lid
1035 /COM, TYPE,16,
1036 /COM, VSEL,S,MAT,,2,
1037 /COM, ASEL,S,EXT,
1038 /COM, ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
1039 /COM, NSLA,S,1,
1040 /COM, ESURF,
1041 /COM, Bottom of Outer Barrier Lid
1042 /COM, TYPE,16,
1043 /COM, ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
1044 /COM, ASEL,U,AREA,,346,
1045 /COM, ASEL,U,AREA,,702,
1046 /COM, ASEL,U,AREA,,1058,
1047 /COM, ASEL,U,AREA,,1414,
1048 /COM, NSLA,S,1,
1049 /COM, ESURF,
1050 /COM, Side of Outer Barrier WP (Inside Surface)
1051 /COM, TYPE,16,
1052 /COM, VSEL,S,MAT,,15,
1053 /COM, ASEL,S,EXT,
1054 /COM, CSYS,11,
1055 /COM, ASEL,U,LOC,X,(DCORD-IWALL),100,
1056 /COM, CSYS,0,
1057 /COM, ASEL,U,LOC,Z,-100,TPPT2,
1058 /COM, ASEL,U,LOC,Z,TPPT1,100,
1059 /COM, NSLA,S,1,
1060 /COM, ESURF,
1061 /COM, *****
1062 /COM, Define Elements for radiation
1063 /COM, Outer Surface of Waste Package
1064 TYPE,36,
1065 /COM, Bottom Lid
1066 VSEL,S,MAT,,15,
1067 ASEL,S,EXT,
1068 ASEL,R,LOC,Z,(-1.0*MIDPT+0.001),(-1.0*MIDPT-0.001),

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1069 NSLA,S,1,
1070 ESURF,
1071 /COM, Side of WP
1072 VSEL,S,MAT,,15,
1073 ASEL,S,EXT,
1074 CSYS,11,
1075 ASEL,U,LOC,X,(-1.0*DCORD+0.001),(DCORD-0.001),
1076 CSYS,0,
1077 NSLA,S,1,
1078 ESURF,
1079 /COM, Top Lid
1080 VSEL,S,MAT,,15,
1081 ASEL,S,EXT,
1082 ASEL,R,LOC,Z,(MIDPT-0.001),(MIDPT+0.001),
1083 NSLA,S,1,
1084 ESURF,
1085 FINISH
1086 SAVE,
1087 /COM, *****
1088 /COM, Generate super-elements
1089 /AUX12,
1090 /COM,
1091 ESEL,S,TYPE,,26,
1092 NSLE,S,
1093 STEF,5.67E-8,
1094 GEOM,0,
1095 VTYPE,0,100,
1096 WRITE,ibrcangap,
1097 ESEL,ALL,
1098 NSEL,ALL,
1099 FINISH
1100 /COM,
1101 /AUX12,
1102 ESEL,S,TYPE,,36,
1103 ESEL,A,TYPE,,46,
1104 NSLE,S,
1105 STEF,5.67E-8,
1106 GEOM,0,
1107 VTYPE,0,100,
1108 WRITE,obdrwgap,
1109 ESEL,ALL,
1110 NSEL,ALL,
1111 FINISH
1112 /COM, - DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
1113 /COM, /AUX12,
1114 /COM, ESEL,S,TYPE,,16,
1115 /COM, NSLE,S,
1116 /COM, STEF,5.67E-8,
1117 /COM, GEOM,0,
1118 /COM, VTYPE,0,100,
1119 /COM, WRITE,iobargap,
1120 /COM, ESEL,ALL,
1121 /COM, NSEL,ALL,
1122 /COM, FINISH
1123 /COM, /COM,
1124 /COM, /AUX12,
1125 /COM, ESEL,S,TYPE,,6,
1126 /COM, NSLE,S,
1127 /COM, STEF,5.67E-8,
1128 /COM, GEOM,0,
1129 /COM, VTYPE,0,100,
1130 /COM, WRITE,glscangap,
1131 /COM,
1132 ESEL,ALL,
1133 NSEL,ALL,
1134 FINISH
1135 /PREP7,
1136 TYPE,18,
1137 /COM, SE,glscangap,
1138 /COM, SE,iobargap,

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1139 SE,ibrcangap,
1140 SE,obdrwgap,
1141 /COM, Delete radiation edge elements
1142 ESEL,S,TYPE,, 6,
1143 ESEL,A,TYPE,,16,
1144 ESEL,A,TYPE,,26,
1145 ESEL,A,TYPE,,36,
1146 ESEL,A,TYPE,,46,
1147 EDELE,ALL,
1148 ESEL,ALL,
1149 LSEL,ALL,
1150 /COM, *****
1151 /COM, Define SHELL Element thicknesses; Required for solution:
1152 R,1,0.001,0.001,0.001,0.001,0.0,
1153 FINISH
1154 SAVE,
1155 /COM, *****
1156 /COM, GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
1157 /COM, DONT MESH; Either Assume its VOID or its meshed earlier
1158 /COM, This section used only if both rad. and He conducti
1159 /COM, is used in the model.
1160 /COM, He/Air in WP I/O Bar. Gap
1161 /COM, /PREP7
1162 /COM, ESHAPE,2,
1163 /COM, MAT, 7,
1164 /COM, TYPE,2,
1165 /COM, VMESH, 96, 97,1
1166 /COM, VMESH,197,198,1
1167 /COM, VMESH,298,299,1
1168 /COM, VMESH,399,400,1
1169 /COM,
1170 /COM,
1171 /COM, Now Mesh inside of WP; DONT MESH Assume VOID
1172 /COM, He space in WP
1173 /COM, ESHAPE,2,
1174 /COM, MAT, 7,
1175 /COM, TYPE,2,
1176 /COM, VMESH, 17, 24,1
1177 /COM, VMESH,118,125,1
1178 /COM, VMESH,219,226,1
1179 /COM, VMESH,320,327,1
1180 /COM,
1181 /COM, VMESH, 57, 68,1
1182 /COM, VMESH,158,169,1
1183 /COM, VMESH,259,270,1
1184 /COM, VMESH,360,371,1
1185 /COM,
1186 /COM, VMESH, 81,
1187 /COM, VMESH,182,
1188 /COM, VMESH,283,
1189 /COM, VMESH,384,
1190 /COM,
1191 /COM, VMESH, 90,
1192 /COM, VMESH,191,
1193 /COM, VMESH,292,
1194 /COM, VMESH,393,
1195 /COM,
1196 /COM, Now Mesh inside of Can DONT MESH Assume VOID
1197 /COM, He/Air in Pour Can.
1198 /COM, ESHAPE,2,
1199 /COM, MAT, 7,
1200 /COM, TYPE,2,
1201 /COM, VMESH, 37, 40,1
1202 /COM, VMESH,138,141,1
1203 /COM, VMESH,239,242,1
1204 /COM, VMESH,340,343,1
1205 /COM,
1206 /COM, NUMMRG,ELEM,
1207 /COM, NUMMRG,NODE,
1208 /COM, NUMMRG,KP,

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1209 /COM, FINISH
1210 /COM, *****
1211 /COM, Create element mesh plots to illustrate model
1212 /POST1,
1213 /COM, View model meshing from drift end view
1214 /RESET,
1215 /TYPE,,HIDP,
1216 /VIEW,1,0,0,1,
1217 /DIST,1,5,0,
1218 /NUM, 1,
1219 /TRIAD,OFF,
1220 /PNUM,MAT , 1,
1221 VSEL,S,LOC,Z,-100,0.0,
1222 ESLV,S
1223 ASEL,S,AREA,,17,26,1
1224 ASEL,R,LOC,Z,-100.0,0.0,
1225 ESLA,A
1226 /TITLE, DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
1227 /SHOW,meshfct,grph,0,8,
1228 EPLOT
1229 /COM, View model meshing for 45 side cut-away
1230 /RESET,
1231 /TYPE,,HIDP,
1232 /VIEW,1,1,1,1,
1233 /DIST,1,5,0,
1234 /NUM, 1,
1235 /TRIAD,OFF,
1236 /PNUM,MAT , 1,
1237 VSEL,S,MAT,,1,5,4
1238 CSYS,31,
1239 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1240 VSEL,U,LOC,Y,-45.0,135.0,
1241 CSYS,0,
1242 ESLV,S
1243 VSEL,S,MAT,,1,5,4
1244 CSYS,32,
1245 VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1246 VSEL,U,LOC,Y,-45.0,45.0,
1247 CSYS,0,
1248 ESLV,A
1249 VSEL,S,LOC,X,-100.0,0.0,
1250 ESLV,A
1251 ASEL,S,AREA,,17,26,1
1252 ASEL,R,LOC,X,-100.0,0.0,
1253 ESLA,A
1254 /TITLE, DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
1255 /SHOW,meshcut,grph,0,8,
1256 EPLOT
1257 /COM, View model meshing for 90 side cut-away
1258 /RESET,
1259 /TYPE,,HIDP,
1260 /VIEW,1,1,0,0,
1261 /DIST,1,5,0,
1262 /NUM, 1,
1263 /TRIAD,OFF,
1264 /PNUM,MAT , 1,
1265 VSEL,S,LOC,X,-100,0.0,
1266 ESLV,S
1267 ASEL,S,AREA,,17,26,1
1268 ASEL,R,LOC,X,-100.0,0.0,
1269 ESLA,A
1270 /TITLE, DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH
1271 /SHOW,meshsct,grph,0,8,
1272 EPLOT
1273 FINISH
1274 /COM, *****
1275 /COM, Set solution parameters and apply B.C.'s
1276 /COM,
1277 /COM, Solve steady-state for initial conditions
1278 /COM, with WP surface equal to drift ambient

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1279 /COM,          temperature from repository model.
1280 /SOLU
1281 ANTYPE,TRAN,NEW,
1282 NROPT,AUTO,
1283 TRNOPT,FULL,
1284 TOFFST,273.15,
1285 /COM,          Apply Drift Wall Temp. BC
1286 ASEL,S,AREA,,17,26,1
1287 NSLA,S,1,
1288 D,ALL,TEMP,DFAMBT,
1289 ASEL,ALL,
1290 NSEL,ALL,
1291 /COM,          Apply Heat Generation BC to glass
1292 VSEL,S,MAT,,5,
1293 ESLV,S,
1294 BFE,ALL,HGEN,,(FUEL(TM_START)),
1295 VSEL,ALL,
1296 NSEL,ALL,
1297 ESEL,ALL,
1298 /COM,          Set Solution Params and solve
1299 TIMINT,OFF,
1300 TIME,1e-6,
1301 AUTOTS,ON,
1302 KBC,0,
1303 SOLVE
1304 /COM,
1305 /COM,          Solve steady-state for initial conditions
1306 /COM,          with WP surface temperatures from repository
1307 /COM,          steady-state solution.
1308 /COM,          Apply Drift Wall Temp. BC
1309 ASEL,S,AREA,,17,26,1
1310 NSLA,S,1,
1311 DDELE,ALL,TEMP,
1312 ASEL,ALL,
1313 NSEL,ALL,
1314 ASEL,S,AREA,,17,26,1
1315 NSLA,S,1,
1316 D,ALL,TEMP,(DFSID(TM_START)),
1317 ASEL,ALL,
1318 NSEL,ALL,
1319 /COM,          Apply Heat Generation BC to glass
1320 VSEL,S,MAT,,5,
1321 ESLV,S,
1322 BFE,ALL,HGEN,,(FUEL(TM_START)),
1323 VSEL,ALL,
1324 NSEL,ALL,
1325 ESEL,ALL,
1326 /COM,          Set Solution Params and solve
1327 TIMINT,OFF,
1328 TIME,2e-6,
1329 AUTOTS,ON,
1330 KBC,0,
1331 SOLVE
1332 SAVE,
1333 /COM,          *****
1334 /COM,          SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES
1335 TIMINT,OFF,
1336 AUTOTS,ON,
1337 /COM,          Time substep ranges from 10 sec to 1/4 loadstep
1338 /COM,          NSUBST,10,20,5,ON
1339 /COM,          Begin Transient
1340 /COM,          Apply loads and solve for 0 to .9 years
1341 *DO,TM,TM_START,TM0,TM10
1342 TIME,TM,
1343 VSEL,S,MAT,,5,
1344 ESLV,S,
1345 BFE,ALL,HGEN,,(FUEL(TM)),
1346 VSEL,ALL
1347 ESEL,ALL
1348 ASEL,S,AREA,,17,26,1

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1349      NSLA,S,1,
1350      DDELE,ALL,TEMP,
1351      ASEL,ALL,
1352      NSEL,ALL,
1353      ASEL,S,AREA,,17,26,1
1354      NSLA,S,1,
1355      D,ALL,TEMP,(DFSID(TM)),
1356      ASEL,ALL,
1357      NSEL,ALL,
1358      SOLVE
1359 *ENDDO
1360 /COM,      Apply loads and solve for 1 to 9 years
1361 *DO,TM,TME1,TME9,TM11
1362      TIME,TM,
1363      VSEL,S,MAT,,5,
1364      ESLV,S,
1365      BFE,ALL,HGEN,,(FUEL(TM)),
1366      VSEL,ALL
1367      ESEL,ALL
1368      ASEL,S,AREA,,17,26,1
1369      NSLA,S,1,
1370      DDELE,ALL,TEMP,
1371      ASEL,ALL,
1372      NSEL,ALL,
1373      ASEL,S,AREA,,17,26,1
1374      NSLA,S,1,
1375      D,ALL,TEMP,(DFSID(TM)),
1376      ASEL,ALL,
1377      NSEL,ALL,
1378      SOLVE
1379 *ENDDO
1380 /COM,      NSUBST,10,40,10,ON
1381 /COM,      Apply loads and solve for 10 to 90 years
1382 *DO,TM,TME10,TME90,TM110
1383      TIME,TM,
1384      VSEL,S,MAT,,5,
1385      ESLV,S,
1386      BFE,ALL,HGEN,,(FUEL(TM)),
1387      VSEL,ALL
1388      ESEL,ALL
1389      ASEL,S,AREA,,17,26,1
1390      NSLA,S,1,
1391      DDELE,ALL,TEMP,
1392      ASEL,ALL,
1393      NSEL,ALL,
1394      ASEL,S,AREA,,17,26,1
1395      NSLA,S,1,
1396      D,ALL,TEMP,(DFSID(TM)),
1397      ASEL,ALL,
1398      NSEL,ALL,
1399      SOLVE
1400 *ENDDO
1401 /COM,      NSUBST,10,60,15,ON
1402 /COM,      Apply loads and solve for 100 to 1000 years
1403 *DO,TM,TME100,TME1000,TM1100
1404      TIME,TM,
1405      VSEL,S,MAT,,5,
1406      ESLV,S,
1407      BFE,ALL,HGEN,,(FUEL(TM)),
1408      VSEL,ALL
1409      ESEL,ALL
1410      ASEL,S,AREA,,17,26,1
1411      NSLA,S,1,
1412      DDELE,ALL,TEMP,
1413      ASEL,ALL,
1414      NSEL,ALL,
1415      ASEL,S,AREA,,17,26,1
1416      NSLA,S,1,
1417      D,ALL,TEMP,(DFSID(TM)),
1418      ASEL,ALL,

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1419      NSEL,ALL,
1420      SOLVE
1421      *ENDDO
1422      FINISH
1423      /COM, *****
1424      /COM,      Create element contour plots of solution results
1425      /COM,
1426      /COM,      Sort through solution results for time of max temp.
1427      /POST26,
1428      NSOL,2,(NODE((DRMOR+DRMOF),(-1.0*(DRMOR+DRMOF)),(-0.66*BTPT4))),TEMP,,peakgls,
1429      STORE,NEW,
1430      *GET,TMTMAX,VARI,2,EXTREM,TMAX,
1431      FINISH
1432      /POST1,
1433      /COM,      Create temperature contour plots of WP at peak
1434      /RESET,
1435      /TYPE,,HIDP,
1436      /VIEW,1,1,1,1,
1437      /DIST,1,3,0,
1438      /NUM, 1,
1439      /GLINE,,-1,
1440      /TRIAD,OFF,
1441      /PNUM,MAT, 1,
1442      VSEL,S,MAT,,1,5,4
1443      CSYS,31,
1444      VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1445      VSEL,U,LOC,Y,-45.0,135.0,
1446      CSYS,0,
1447      ESLV,S
1448      VSEL,S,MAT,,1,5,4
1449      CSYS,32,
1450      VSEL,U,LOC,X,(DRMOR+0.0001),100.0,
1451      VSEL,U,LOC,Y,-45.0,45.0,
1452      CSYS,0,
1453      ESLV,A
1454      VSEL,S,LOC,X,-100.0,0.0,
1455      ESLV,A
1456      ASEL,S,AREA,,17,26,1
1457      ASEL,R,LOC,X,-100.0,0.0,
1458      ESLA,A
1459      SET,NEAR,,,,TMTMAX,
1460      /TITLE, DHLW WP at Time of Peak Temp. (%TMTMAX/3.15576E7% years)
1461      /SHOW,solupk,grph,0,8,
1462      /CONTOUR,1,128,AUTO,
1463      PLNSOL,TEMP,
1464      /COM,      Create temperature contour plots at 5, 10, 50, and 100 yrs
1465      SET,NEAR,,,,(TM_START+(5*TMI1)),
1466      /TITLE, DHLW WP at 5 years
1467      /SHOW,solu5,grph,0,8,
1468      /CONTOUR,1,128,USER,
1469      PLNSOL,TEMP,
1470      SET,NEAR,,,,TME10,
1471      /TITLE, DHLW WP at 10 years
1472      /SHOW,solu10,grph,0,8,
1473      /CONTOUR,1,128,USER,
1474      PLNSOL,TEMP,
1475      SET,NEAR,,,,TME50,
1476      /TITLE, DHLW WP at 50 years
1477      /SHOW,solu50,grph,0,8,
1478      /CONTOUR,1,128,USER,
1479      PLNSOL,TEMP,
1480      SET,NEAR,,,,TME100,
1481      /TITLE, DHLW WP at 100 years
1482      /SHOW,solu100,grph,0,8,
1483      /CONTOUR,1,128,USER,
1484      PLNSOL,TEMP,
1485      ESEL,ALL,
1486      FINISH
1487      /COM, *****
1488      /COM,      Print time/temperature output at specific locations

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1489 /COM,          Save profile from center to edge
1490 /COM,
1491 /COM,          Variable Legend: A01i000
1492 /COM,          t = structural stainless Canister near center line
1493 /COM,          c = center of Glass log
1494 /COM,          h = halfway between center and Canister
1495 /COM,          s = structural stainless Canister
1496 /COM,          i = inner barrier of DC
1497 /COM,          o = outer barrier of DC
1498 /COM,          ## = cartesian quadrant number of Canister
1499 /COM,          i = side of assembly toward center of WP
1500 /COM,          o = side of assembly toward edge of WP
1501 /COM,          045 = profile 45 deg down
1502 /COM,          135 = profile 45 deg up
1503 /POST26,
1504 NUMVAR,32,
1505 /COM,          *****
1506 /COM,          *Temperature Profile from center to lower right (45 deg.) z=2/3*
1507 /COM,          *****
1508 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-0.33*BTPT4))),TEMP,,t94i045,
1509 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-0.33*BTPT4))),TEMP,,t94o045,
1510 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-0.33*BTPT4))),TEMP,,h94i045,
1511 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-0.33*BTPT4))),TEMP,,c94i045,
1512 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),(-0.33*BTPT4))),TEMP,,h94o045,
1513 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),(-0.33*BTPT4))),TEMP,,s94i045,
1514 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),(-0.33*BTPT4))),TEMP,,s94o045,
1515 NSOL, 9,(NODE(MI45, (-1.0*MI45),(-0.33*BTPT4))),TEMP,,i94i045,
1516 NSOL,10,(NODE(MO45, (-1.0*MO45),(-0.33*BTPT4))),TEMP,,i94o045,
1517 NSOL,11,(NODE(DO45, (-1.0*DO45),(-0.33*BTPT4))),TEMP,,o94o045,
1518 PRVAR, 2, 3, 4, 5, 6, 7,
1519 PRVAR, 8, 9,10,11,
1520 /COM,          *****
1521 /COM,          * Temperature Profile from center to lower right (45 deg.) *
1522 /COM,          *****
1523 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),0.0)),TEMP,,t04i045,
1524 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),0.0)),TEMP,,t04o045,
1525 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),0.0)),TEMP,,h04i045,
1526 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),0.0)),TEMP,,c04i045,
1527 NSOL, 6,(NODE(HCO45, (-1.0*HCO45),0.0)),TEMP,,h04o045,
1528 NSOL, 7,(NODE(SCI45, (-1.0*SCI45),0.0)),TEMP,,s04i045,
1529 NSOL, 8,(NODE(SCO45, (-1.0*SCO45),0.0)),TEMP,,s04o045,
1530 NSOL, 9,(NODE(MI45, (-1.0*MI45),0.0)),TEMP,,i04i045,
1531 NSOL,10,(NODE(MO45, (-1.0*MO45),0.0)),TEMP,,i04o045,
1532 NSOL,11,(NODE(DO45, (-1.0*DO45),0.0)),TEMP,,o04o045,
1533 PRVAR, 2, 3, 4, 5, 6, 7,
1534 PRVAR, 8, 9,10,11,
1535 /COM,          *****
1536 /COM,          * Temperature Profile from center to upper right (135 deg.) *
1537 /COM,          *****
1538 /COM,          *****
1539 NSOL, 2,(NODE(TCO45, TCO45,0.0)),TEMP,,t01i135,
1540 NSOL, 3,(NODE(TCI45, TCI45,0.0)),TEMP,,t01o135,
1541 NSOL, 4,(NODE(HCI45, HCI45,0.0)),TEMP,,h01i135,
1542 NSOL, 5,(NODE(CCO45, CCO45,0.0)),TEMP,,c01i135,
1543 NSOL, 6,(NODE(HCO45, HCO45,0.0)),TEMP,,h01o135,
1544 NSOL, 7,(NODE(SCI45, SCI45,0.0)),TEMP,,s01i135,
1545 NSOL, 8,(NODE(SCO45, SCO45,0.0)),TEMP,,s01o135,
1546 NSOL, 9,(NODE(MI45, MI45,0.0)),TEMP,,i01i135,
1547 NSOL,10,(NODE(MO45, MO45,0.0)),TEMP,,i01o135,
1548 NSOL,11,(NODE(DO45, DO45,0.0)),TEMP,,o01o135,
1549 PRVAR, 2, 3, 4, 5, 6, 7,
1550 PRVAR, 8, 9,10,11,
1551 /COM,          *****
1552 /COM,          * Temp. Prof. from center to lower right (45 deg.) z=glass bot *
1553 /COM,          *****
1554 /COM,          *****
1555 NSOL, 2,(NODE(TCO45, (-1.0*TCO45),(-1*BTPT4))),TEMP,,tb4i045,
1556 NSOL, 3,(NODE(TCI45, (-1.0*TCI45),(-1*BTPT4))),TEMP,,tb4o045,
1557 NSOL, 4,(NODE(HCI45, (-1.0*HCI45),(-1*BTPT4))),TEMP,,hb4i045,
1558 NSOL, 5,(NODE(CCO45, (-1.0*CCO45),(-1*BTPT4))),TEMP,,cb4i045,

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1559 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), (-1*BTPT4))), TEMP, , hb4o045,
1560 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), (-1*BTPT4))), TEMP, , sb4i045,
1561 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), (-1*BTPT4))), TEMP, , sb4o045,
1562 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), (-1*BTPT4))), TEMP, , ib4i045,
1563 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), (-1*BTPT4))), TEMP, , ib4o045,
1564 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), (-1*BTPT4))), TEMP, , ob4o045,
1565 PRVAR, 2, 3, 4, 5, 6, 7,
1566 PRVAR, 8, 9, 10, 11,
1567 /COM,
1568 /COM, *****
1569 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass bot*
1570 /COM, *****
1571 NSOL, 2, (NODE(      TCO45,      TCO45, (-1*BTPT4))), TEMP, , t01i135,
1572 NSOL, 3, (NODE(      TCI45,      TCI45, (-1*BTPT4))), TEMP, , t01o135,
1573 NSOL, 4, (NODE(      HCI45,      HCI45, (-1*BTPT4))), TEMP, , h01i135,
1574 NSOL, 5, (NODE(      CCO45,      CCO45, (-1*BTPT4))), TEMP, , c01i135,
1575 NSOL, 6, (NODE(      HCO45,      HCO45, (-1*BTPT4))), TEMP, , h01o135,
1576 NSOL, 7, (NODE(      SCI45,      SCI45, (-1*BTPT4))), TEMP, , s01i135,
1577 NSOL, 8, (NODE(      SCO45,      SCO45, (-1*BTPT4))), TEMP, , s01o135,
1578 NSOL, 9, (NODE(      MI45,      MI45, (-1*BTPT4))), TEMP, , i01i135,
1579 NSOL, 10, (NODE(      MO45,      MO45, (-1*BTPT4))), TEMP, , i01o135,
1580 NSOL, 11, (NODE(      DO45,      DO45, (-1*BTPT4))), TEMP, , o01o135,
1581 PRVAR, 2, 3, 4, 5, 6, 7,
1582 PRVAR, 8, 9, 10, 11,
1583 /COM,
1584 /COM, *****
1585 /COM, * Temp. Prof. from center to lower right (45 deg.) z=glass top *
1586 /COM, *****
1587 NSOL, 2, (NODE(      TCO45,      (-1.0*TCO45), TPPT6)), TEMP, , tt4i045,
1588 NSOL, 3, (NODE(      TCI45,      (-1.0*TCI45), TPPT6)), TEMP, , tt4o045,
1589 NSOL, 4, (NODE(      HCI45,      (-1.0*HCI45), TPPT6)), TEMP, , ht4i045,
1590 NSOL, 5, (NODE(      CCO45,      (-1.0*CCO45), TPPT6)), TEMP, , ct4i045,
1591 NSOL, 6, (NODE(      HCO45,      (-1.0*HCO45), TPPT6)), TEMP, , ht4o045,
1592 NSOL, 7, (NODE(      SCI45,      (-1.0*SCI45), TPPT6)), TEMP, , st4i045,
1593 NSOL, 8, (NODE(      SCO45,      (-1.0*SCO45), TPPT6)), TEMP, , st4o045,
1594 NSOL, 9, (NODE(      MI45,      (-1.0*MI45), TPPT6)), TEMP, , it4i045,
1595 NSOL, 10, (NODE(      MO45,      (-1.0*MO45), TPPT6)), TEMP, , it4o045,
1596 NSOL, 11, (NODE(      DO45,      (-1.0*DO45), TPPT6)), TEMP, , ot4o045,
1597 PRVAR, 2, 3, 4, 5, 6, 7,
1598 PRVAR, 8, 9, 10, 11,
1599 /COM,
1600 /COM, *****
1601 /COM, * Temp. Prof. from center to upper right (135 deg.) z=glass top*
1602 /COM, *****
1603 NSOL, 2, (NODE(      TCO45,      TCO45, TPPT6)), TEMP, , t01i135,
1604 NSOL, 3, (NODE(      TCI45,      TCI45, TPPT6)), TEMP, , t01o135,
1605 NSOL, 4, (NODE(      HCI45,      HCI45, TPPT6)), TEMP, , h01i135,
1606 NSOL, 5, (NODE(      CCO45,      CCO45, TPPT6)), TEMP, , c01i135,
1607 NSOL, 6, (NODE(      HCO45,      HCO45, TPPT6)), TEMP, , h01o135,
1608 NSOL, 7, (NODE(      SCI45,      SCI45, TPPT6)), TEMP, , s01i135,
1609 NSOL, 8, (NODE(      SCO45,      SCO45, TPPT6)), TEMP, , s01o135,
1610 NSOL, 9, (NODE(      MI45,      MI45, TPPT6)), TEMP, , i01i135,
1611 NSOL, 10, (NODE(      MO45,      MO45, TPPT6)), TEMP, , i01o135,
1612 NSOL, 11, (NODE(      DO45,      DO45, TPPT6)), TEMP, , o01o135,
1613 PRVAR, 2, 3, 4, 5, 6, 7,
1614 PRVAR, 8, 9, 10, 11,
1615 /COM,
1616 /COM, *****
1617 /COM, * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *
1618 /COM, *****
1619 NSOL, 2, (NODE(      CCO45,      CCO45,      MIDPT)), TEMP, , ot1o135,
1620 NSOL, 3, (NODE(      CCO45,      CCO45,      TPPT1)), TEMP, , ot1i135,
1621 NSOL, 4, (NODE(      CCO45,      CCO45,      TPPT2)), TEMP, , it1o135,
1622 NSOL, 5, (NODE(      CCO45,      CCO45,      TPPT3)), TEMP, , it1i135,
1623 NSOL, 6, (NODE(      CCO45,      CCO45,      TPPT4)), TEMP, , st1o135,
1624 NSOL, 7, (NODE(      CCO45,      CCO45,      TPPT5)), TEMP, , st1i135,
1625 NSOL, 8, (NODE(      CCO45,      CCO45,      TPPT6)), TEMP, , ht1i135,
1626 NSOL, 9, (NODE(      CCO45,      CCO45,      ( 0.5*TPPT6))), TEMP, , gt1i135,
1627 NSOL, 10, (NODE(      CCO45,      CCO45,      0.0)), TEMP, , c01i135,
1628 NSOL, 11, (NODE(      CCO45,      CCO45,      (-0.33*BTPT4))), TEMP, , gb1i135,

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1629 NSOL,12,(NODE(      CC045,      CC045,      (-0.66*BTPT4))),TEMP,,gb1h135,
1630 NSOL,13,(NODE(      CC045,      CC045,      (-1.0*BTPT4))),TEMP,,sb1i135,
1631 NSOL,14,(NODE(      CC045,      CC045,      (-1.0*BTPT3))),TEMP,,sb1o135,
1632 NSOL,15,(NODE(      CC045,      CC045,      (-1.0*BTPT2))),TEMP,,ib1i135,
1633 NSOL,16,(NODE(      CC045,      CC045,      (-1.0*BTPT1))),TEMP,,ib1o135,
1634 NSOL,17,(NODE(      CC045,      CC045,      MIDPT)),TEMP,,ob1o135,
1635 PRVAR, 2, 3, 4, 5, 6, 7,
1636 PRVAR, 8, 9,10,11,12,13,
1637 PRVAR,14,15,16,17,
1638 /COM,
1639 /COM,
1640 /COM, * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *
1641 /COM, *****
1642 NSOL, 2,(NODE(      CC045,(-1.0*CC045),      MIDPT)),TEMP,,ot4o045,
1643 NSOL, 3,(NODE(      CC045,(-1.0*CC045),      TPPT1)),TEMP,,ot4i045,
1644 NSOL, 4,(NODE(      CC045,(-1.0*CC045),      TPPT2)),TEMP,,it4o045,
1645 NSOL, 5,(NODE(      CC045,(-1.0*CC045),      TPPT3)),TEMP,,it4i045,
1646 NSOL, 6,(NODE(      CC045,(-1.0*CC045),      TPPT4)),TEMP,,st4o045,
1647 NSOL, 7,(NODE(      CC045,(-1.0*CC045),      TPPT5)),TEMP,,st4i045,
1648 NSOL, 8,(NODE(      CC045,(-1.0*CC045),      TPPT6)),TEMP,,ht4i045,
1649 NSOL, 9,(NODE(      CC045,(-1.0*CC045),      ( 0.5*TPPT6))),TEMP,,gt4i045,
1650 NSOL,10,(NODE(      CC045,(-1.0*CC045),      0.0)),TEMP,,c04i045,
1651 NSOL,11,(NODE(      CC045,(-1.0*CC045),      (-0.33*BTPT4))),TEMP,,gb4i045,
1652 NSOL,12,(NODE(      CC045,(-1.0*CC045),      (-0.66*BTPT4))),TEMP,,gb4h045,
1653 NSOL,13,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT4))),TEMP,,sb4i045,
1654 NSOL,14,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT3))),TEMP,,sb4o045,
1655 NSOL,15,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT2))),TEMP,,ib4i045,
1656 NSOL,16,(NODE(      CC045,(-1.0*CC045),      (-1.0*BTPT1))),TEMP,,ib4o045,
1657 NSOL,17,(NODE(      CC045,(-1.0*CC045),      MIDPT)),TEMP,,ob4o045,
1658 PRVAR, 2, 3, 4, 5, 6, 7,
1659 PRVAR, 8, 9,10,11,12,13,
1660 PRVAR,14,15,16,17,
1661 /COM,
1662 /COM,
1663 /COM, * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *
1664 /COM, *****
1665 NSOL, 2,(NODE(      TC045,      TC045,      MIDPT)),TEMP,,ot1oise,
1666 NSOL, 3,(NODE(      TC045,      TC045,      TPPT1)),TEMP,,ot1iise,
1667 NSOL, 4,(NODE(      TC045,      TC045,      TPPT2)),TEMP,,it1oise,
1668 NSOL, 5,(NODE(      TC045,      TC045,      TPPT3)),TEMP,,it1iise,
1669 NSOL, 6,(NODE(      TC045,      TC045,      TPPT4)),TEMP,,st1oise,
1670 NSOL, 7,(NODE(      TC045,      TC045,      TPPT5)),TEMP,,st1iise,
1671 NSOL, 8,(NODE(      TC045,      TC045,      TPPT6)),TEMP,,ht1iise,
1672 NSOL, 9,(NODE(      TC045,      TC045,      ( 0.5*TPPT6))),TEMP,,gt1iise,
1673 NSOL,10,(NODE(      TC045,      TC045,      0.0)),TEMP,,c01iise,
1674 NSOL,11,(NODE(      TC045,      TC045,      (-0.33*BTPT4))),TEMP,,gb1iise,
1675 NSOL,12,(NODE(      TC045,      TC045,      (-0.66*BTPT4))),TEMP,,gb1hise,
1676 NSOL,13,(NODE(      TC045,      TC045,      (-1.0*BTPT4))),TEMP,,sb1iise,
1677 NSOL,14,(NODE(      TC045,      TC045,      (-1.0*BTPT3))),TEMP,,sb1oise,
1678 NSOL,15,(NODE(      TC045,      TC045,      (-1.0*BTPT2))),TEMP,,ib1iise,
1679 NSOL,16,(NODE(      TC045,      TC045,      (-1.0*BTPT1))),TEMP,,ib1oise,
1680 NSOL,17,(NODE(      TC045,      TC045,      MIDPT)),TEMP,,ob1oise,
1681 PRVAR, 2, 3, 4, 5, 6, 7,
1682 PRVAR, 8, 9,10,11,12,13,
1683 PRVAR,14,15,16,17,
1684 /COM,
1685 /COM,
1686 /COM, * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *
1687 /COM, *****
1688 NSOL, 2,(NODE(      SC045,      SC045,      MIDPT)),TEMP,,ot1oose,
1689 NSOL, 3,(NODE(      SC045,      SC045,      TPPT1)),TEMP,,ot1iise,
1690 NSOL, 4,(NODE(      SC045,      SC045,      TPPT2)),TEMP,,it1oose,
1691 NSOL, 5,(NODE(      SC045,      SC045,      TPPT3)),TEMP,,it1iise,
1692 NSOL, 6,(NODE(      SC045,      SC045,      TPPT4)),TEMP,,st1oose,
1693 NSOL, 7,(NODE(      SC045,      SC045,      TPPT5)),TEMP,,st1iise,
1694 NSOL, 8,(NODE(      SC045,      SC045,      TPPT6)),TEMP,,ht1iise,
1695 NSOL, 9,(NODE(      SC045,      SC045,      ( 0.5*TPPT6))),TEMP,,gt1iise,
1696 NSOL,10,(NODE(      SC045,      SC045,      0.0)),TEMP,,c01iise,
1697 NSOL,11,(NODE(      SC045,      SC045,      (-0.33*BTPT4))),TEMP,,gb1iise,
1698 NSOL,12,(NODE(      SC045,      SC045,      (-0.66*BTPT4))),TEMP,,gb1hose,

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1699 NSOL,13,(NODE(      SCO45,      SCO45,      (-1.0*BTPT4))),TEMP,,sb1iose,
1700 NSOL,14,(NODE(      SCO45,      SCO45,      (-1.0*BTPT3))),TEMP,,sb1oose,
1701 NSOL,15,(NODE(      SCO45,      SCO45,      (-1.0*BTPT2))),TEMP,,ib1iose,
1702 NSOL,16,(NODE(      SCO45,      SCO45,      (-1.0*BTPT1))),TEMP,,ib1oose,
1703 NSOL,17,(NODE(      SCO45,      SCO45,      MIDPT)),TEMP,,ob1oose,
1704 PRVAR, 2, 3, 4, 5, 6, 7,
1705 PRVAR, 8, 9,10,11,12,13,
1706 PRVAR,14,15,16,17,
1707 /COM,
1708 /COM,
1709 /COM, * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *
1710 /COM,
1711 NSOL, 2,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ot4iose,
1712 NSOL, 3,(NODE(      TCO45,(-1.0*TCO45),      TPPT1)),TEMP,,ot4iise,
1713 NSOL, 4,(NODE(      TCO45,(-1.0*TCO45),      TPPT2)),TEMP,,it4iose,
1714 NSOL, 5,(NODE(      TCO45,(-1.0*TCO45),      TPPT3)),TEMP,,it4iise,
1715 NSOL, 6,(NODE(      TCO45,(-1.0*TCO45),      TPPT4)),TEMP,,st4iose,
1716 NSOL, 7,(NODE(      TCO45,(-1.0*TCO45),      TPPT5)),TEMP,,st4iise,
1717 NSOL, 8,(NODE(      TCO45,(-1.0*TCO45),      TPPT6)),TEMP,,ht4iise,
1718 NSOL, 9,(NODE(      TCO45,(-1.0*TCO45),      ( 0.5*TPPT6))),TEMP,,gt4iise,
1719 NSOL,10,(NODE(      TCO45,(-1.0*TCO45),      0.0)),TEMP,,c04iise,
1720 NSOL,11,(NODE(      TCO45,(-1.0*TCO45),      (-0.33*BTPT4))),TEMP,,gb4iise,
1721 NSOL,12,(NODE(      TCO45,(-1.0*TCO45),      (-0.66*BTPT4))),TEMP,,gb4hise,
1722 NSOL,13,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT4))),TEMP,,sb4iise,
1723 NSOL,14,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT3))),TEMP,,sb4iose,
1724 NSOL,15,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT2))),TEMP,,ib4iise,
1725 NSOL,16,(NODE(      TCO45,(-1.0*TCO45),      (-1.0*BTPT1))),TEMP,,ib4iose,
1726 NSOL,17,(NODE(      TCO45,(-1.0*TCO45),      MIDPT)),TEMP,,ob4iose,
1727 PRVAR, 2, 3, 4, 5, 6, 7,
1728 PRVAR, 8, 9,10,11,12,13,
1729 PRVAR,14,15,16,17,
1730 /COM,
1731 /COM,
1732 /COM, * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *
1733 /COM,
1734 NSOL, 2,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ot4oose,
1735 NSOL, 3,(NODE(      SCO45,(-1.0*SCO45),      TPPT1)),TEMP,,ot4iose,
1736 NSOL, 4,(NODE(      SCO45,(-1.0*SCO45),      TPPT2)),TEMP,,it4oose,
1737 NSOL, 5,(NODE(      SCO45,(-1.0*SCO45),      TPPT3)),TEMP,,it4iose,
1738 NSOL, 6,(NODE(      SCO45,(-1.0*SCO45),      TPPT4)),TEMP,,st4oose,
1739 NSOL, 7,(NODE(      SCO45,(-1.0*SCO45),      TPPT5)),TEMP,,st4iose,
1740 NSOL, 8,(NODE(      SCO45,(-1.0*SCO45),      TPPT6)),TEMP,,ht4iose,
1741 NSOL, 9,(NODE(      SCO45,(-1.0*SCO45),      ( 0.5*TPPT6))),TEMP,,gt4iose,
1742 NSOL,10,(NODE(      SCO45,(-1.0*SCO45),      0.0)),TEMP,,c04iose,
1743 NSOL,11,(NODE(      SCO45,(-1.0*SCO45),      (-0.33*BTPT4))),TEMP,,gb4iose,
1744 NSOL,12,(NODE(      SCO45,(-1.0*SCO45),      (-0.66*BTPT4))),TEMP,,gb4hose,
1745 NSOL,13,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT4))),TEMP,,sb4iose,
1746 NSOL,14,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT3))),TEMP,,sb4oose,
1747 NSOL,15,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT2))),TEMP,,ib4iose,
1748 NSOL,16,(NODE(      SCO45,(-1.0*SCO45),      (-1.0*BTPT1))),TEMP,,ib4oose,
1749 NSOL,17,(NODE(      SCO45,(-1.0*SCO45),      MIDPT)),TEMP,,ob4oose,
1750 PRVAR, 2, 3, 4, 5, 6, 7,
1751 PRVAR, 8, 9,10,11,12,13,
1752 PRVAR,14,15,16,17,
1753 /COM,
1754 /COM,
1755 /COM, * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *
1756 /COM,
1757 NSOL, 2,(NODE(      DCORD,0.0,      MIDPT)),TEMP,,otwoose,
1758 NSOL, 3,(NODE(      DCORD,0.0,      TPPT1)),TEMP,,otwiose,
1759 NSOL, 4,(NODE(      DCORD,0.0,      TPPT2)),TEMP,,itwoose,
1760 NSOL, 5,(NODE(      DCORD,0.0,      TPPT3)),TEMP,,itwiose,
1761 NSOL, 6,(NODE(      DCORD,0.0,      TPPT4)),TEMP,,stwoose,
1762 NSOL, 7,(NODE(      DCORD,0.0,      TPPT5)),TEMP,,stwiose,
1763 NSOL, 8,(NODE(      DCORD,0.0,      TPPT6)),TEMP,,htwiose,
1764 NSOL, 9,(NODE(      DCORD,0.0,      ( 0.5*TPPT6))),TEMP,,gtwiose,
1765 NSOL,10,(NODE(      DCORD,0.0,      0.0)),TEMP,,c0wiose,
1766 NSOL,11,(NODE(      DCORD,0.0,      (-0.33*BTPT4))),TEMP,,gbwiose,
1767 NSOL,12,(NODE(      DCORD,0.0,      (-0.66*BTPT4))),TEMP,,gbwoose,
1768 NSOL,13,(NODE(      DCORD,0.0,      (-1.0*BTPT4))),TEMP,,sbwiose,

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1769 NSOL,14,(NODE( DCORD,0.0, (-1.0*BTPT3))),TEMP,,sbwoose,
1770 NSOL,15,(NODE( DCORD,0.0, (-1.0*BTPT2))),TEMP,,ibwiose,
1771 NSOL,16,(NODE( DCORD,0.0, (-1.0*BTPT1))),TEMP,,ibwoose,
1772 NSOL,17,(NODE( DCORD,0.0, MIDPT)),TEMP,,obwoose,
1773 PRVAR, 2, 3, 4, 5, 6, 7,
1774 PRVAR, 8, 9,10,11,12,13,
1775 PRVAR,14,15,16,17,
1776 FINISH
1777 /COM, *****
1778 /COM, End of batch input file
1779 /COM, *****
1780 SAVE,
1781 /EXIT,
1782 /EOF

```

RUN SETUP PROCEDURE FROM FILE= /ansys50a/docu/start.ans

```

/INPUT FILE= /ansys50a/docu/start.ans LINE= 0
*****
ANSYS STARTUP FILE start.ans
*****

```

```

ABBREVIATION= K1      /pnum,kp ,1,
ABBREVIATION= K0      /pnum,kp ,0,
ABBREVIATION= L1      /pnum,line,1,
ABBREVIATION= L0      /pnum,line,0,
ABBREVIATION= A1      /pnum,area,1,
ABBREVIATION= A0      /pnum,area,0,
ABBREVIATION= V1      /pnum,volu,1,
ABBREVIATION= V0      /pnum,volu,0,
ABBREVIATION= N1      /pnum,node,1,
ABBREVIATION= N0      /pnum,node,0,
ABBREVIATION= E1      /pnum,elem,1,
ABBREVIATION= E0      /pnum,elem,0,
ABBREVIATION= M1      /pnum,mat ,1,
ABBREVIATION= M0      /pnum,mat ,0,
ABBREVIATION= R1      /pnum,real,1,
ABBREVIATION= R0      /pnum,real,0,
ABBREVIATION= T1      /pnum,type,1,
ABBREVIATION= T0      /pnum,type,0,
ABBREVIATION= C1      /number,1,
ABBREVIATION= C0      /number,0,
ABBREVIATION= INP      /input,,inp,
ABBREVIATION= X3D      /show,3d,
ABBREVIATION= X11      /show,x11,
ABBREVIATION= VEC      /show,,,1,

```

ABBREVIATION= RAS /show,,,0,
 ABBREVIATION= ON /menu,on,
 ABBREVIATION= OFF /menu,off,
 ABBREVIATION= NVP /config,nvpag,512,
 ABBREVIATION= QUIT /exit,nosav,
 XYZ TRIAD DISPLAY SET TO OFF

VIEW CONE ANGLE FOR WINDOW 1 25.00

 END start.ans

To start ANSYS menu:

type: x3d for console
 x11 for X-term

type: on

 ANSYS REVISION 5.0A 05/23/1995
 3-D Model of DHLW Glass WP for MGDS Disposal Thomas L Lotz

 * File name: glsh21h2.inp *
 * 4 Pack Glass WP Form w/ C71500 Outer Barrier D. Container *
 * No Helium Fill Gas - WP placed at mid point between SNF WP *
 * *
 * Material Property file: propsd1.dat *
 * *
 * SNF Conductivity file: TBD (NOT REQUIRED) *
 * *
 * SNF Heat Loads file: hangls1.dat *
 * Initial Heat Load: 870 W/canister *
 * *
 * Surface Temp. file: c21h5a.parm *
 * 25 MTU/acre (6.18 kgU/m^2) AML (Low Thermal Loading #3)*
 * 5.0 m Diameter Drift with Concrete Invert *
 * Drift spacing = 90.0 m *
 * WP c/c spacing = 16.165 m *
 * *

 Increase the number of database pages from 16 (256) to 32 Mb
 DONT DO: /CONFIG,nvpag,512,
 Work space must also be increased (-m 87) For Radiation Matix

TITLE=
 DHLW Glass Form Waste Package

SI UNITS SPECIFIED
 LENGTH = METERS(M)
 MASS = KILOGRAMS(KG)
 TIME = SECONDS(SEC)
 TEMPERATURE = CENTIGRADE
 CURRENT = AMPS

 Read in average effective conductivities from SNF model
 No Need for File: PARRES,CHANGE,pwr15e,parm,
 Read in surface temps. from repository model

*** NOTE ***

CP= .670 TIME= 03:41:43

Restore ANSYS parameters from file= c21h5a.parm.

/INPUT FILE= c21h5a.parm LINE= 0

PRINTOUT RESUMED BY /GOP

Define Transient time parameters (AS PER THE PARAM FILE)

TM_START = start time (sec)

TMI* = time increment for solution (sec)

TME* = start and stop for time do-loops (sec)

Note: 1 year = 3.15576e7 seconds

TMTMAX = time of maximum cladding temperature

TM_START=(1.0E-6)*(3.15576E7)

TMI0=0.1*3.15576E7

TMI1=1.0*3.15576E7

TMI10=10.0*3.15576E7

TMI100=100.0*3.15576E7

TMI1000=1000.0*3.15576E7

TME0=0.9*3.15576E7+TM_START

TME1=TMI1+TM_START

TME9=9.0*3.15576E7+TM_START

TME10=TMI10+TM_START

TME50=50.0*3.15576E7+TM_START

TME90=90.0*3.15576E7+TM_START

TME100=TMI100+TM_START

TME1000=TMI1000+TM_START

Define waste package parameters

Required Constants:

PARAMETER PI = 3.141593

PARAMETER SQT = 1.414214

Define emplacement parameters

DFRAD = radius of drift (m)

INVRT = height of invert backfill floor (m)

WPSPC = waste package c/c spacing (m)

OFFST = WP center below drift center (m)

XXX = X coordinate of invert drift wall intersection

YYY = Y coordinate of invert drift wall intersection

PARAMETER DFRAD = 2.500000

PARAMETER INVRT = .7000000

PARAMETER WPSPC = 16.16500

PARAMETER OFFST = .1833000

PARAMETER XXX = 1.734935

PARAMETER YYY = -1.616700

Required container wall parameters:

DCIRD = disposal container inner radius (m)

OWALL = outer barrier thickness (m)

IWALL = inner barrier thickness (m)

DCORD = disposal container outer radius (m)

DCLEN = Disp. Cont. outside length

DCOLT = Disp. Cont. Outer Lid Thickness (m)

DCILT = Disp. Cont. Inner Lid Thickness (m)

DCIOG = Disp. Cont. Inner/Outer Lid Gap at top of WP (m)

DCILN = Disp. Cont. Inner Bar. Total length (m)

DCILI = Disp. Cont. Inner Bar. Inner length (m)

PARAMETER DCIRD = .7845000

PARAMETER OWALL = .5000000E-01

PARAMETER IWALL = .2000000E-01
 PARAMETER DCORD = .8545000
 PARAMETER DCLEN = 3.230000
 PARAMETER DCOLT = .5500000E-01
 PARAMETER DCILT = .2500000E-01
 PARAMETER DCIOG = .3000000E-01
 PARAMETER DCILN = 3.090000
 PARAMETER DCILI = 3.040000

Required ceramic and drum parameters:

CDRAD = glass radius (m)
 CDHGT = glass height; height of fill (m)
 DRMIR = SRP Canister inner rad. (m)
 DRMOR = SRP Canister drum outer rad. (m)
 DRBTT = SRP Canister thickness at bottom of Canister (m)
 DRTPT = SRP Canister thickness at Top of Canister (m)
 DRLEN = SRP Canister outer length (m)
 DRILN = SRP Canister Inner length (m)
 DRGAP = SRP Canister axial gap with inner barrier at bot
 DRGPT = SRP Canister axial gap with inner barrier at top
 DRMOF = SRP Canister center line off set (m)
 PEAKF = Peaking factor to adjust Heat generation dist.
 FVOLU = can_volume=PI*glass_fill_radiu^2*glass_length

PARAMETER CDRAD = .2953000
 PARAMETER CDHGT = 2.154900
 PARAMETER DRMIR = .2953000
 PARAMETER DRMOR = .3048000
 PARAMETER DRBTT = .1500000E-01
 PARAMETER DRTPT = .2000000E-01
 PARAMETER DRLEN = 2.744600
 PARAMETER DRILN = 2.709600
 PARAMETER DRGAP = .2500000E-01
 PARAMETER DRGPT = .2704000
 PARAMETER DRMOF = .2015054E-01
 PARAMETER PEAKF = 1.000000
 PARAMETER FVOLU = .5903423

Define Extrude Distances as required:
 Bottom of WP

PARAMETER MIDPT = 1.615000
 PARAMETER BTPT1 = 1.560000
 PARAMETER BTPT2 = 1.535000
 PARAMETER BTPT3 = 1.510000
 PARAMETER BTPT4 = 1.495000

Top of WP

PARAMETER TPPT1 = 1.560000
 PARAMETER TPPT2 = 1.530000
 PARAMETER TPPT3 = 1.505000
 PARAMETER TPPT4 = 1.234600
 PARAMETER TPPT5 = 1.214600
 PARAMETER TPPT6 = .6599000

Define calculated parameters

ASSY = assembly heat production (W) f(yrs)
 FUEL = volumetric heat production (W/m3) f(yrs)

ARRAY PARAMETER ASSY DELETED.

SET PARAMETER DIMENSIONS ON ASSY TYPE=TABL DIMENSIONS= 101 1 1

SET PARAMETER DIMENSIONS ON FUEL TYPE=TABL DIMENSIONS= 101 1 1

Define 45 degree point of reference:

TC045 = x coord. WP Center Line Outer Pour Can. at 45 de
 TCI45 = x coord. WP Center Line Inner Pour Can. at 45 de
 HCI45 = x coord. WP Center Line side of center Glass at
 HCO45 = x coord. WP Edge side of center Glass at 45 deg.
 CC045 = x coord. Glass Center Line in Pour Can. at 45 de
 SCO45 = x coord. WP Edge Outer Pour Can. at 45 deg.
 SCI45 = x coord. WP Edge Inner Pour Can. at 45 deg.
 MI45 = x coord. DCIRD at 45 deg.
 MO45 = x coord. DCIRD+IWALL at 45 deg.
 DO45 = x coord. DCIRD+IWALL+OWALL at 45 deg.

PARAMETER TC045 = .1094244
 PARAMETER TCI45 = .1161419
 PARAMETER HCI45 = .2205462
 PARAMETER HCO45 = .4293549
 PARAMETER CC045 = .3249505
 PARAMETER SCO45 = .5404767
 PARAMETER SCI45 = .5337592
 PARAMETER MI45 = .5547253
 PARAMETER MO45 = .5688674
 PARAMETER DO45 = .6042227

Define different element types

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 03:41:44 NOV 03, 1995 CP= 1.430
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE 1 IS PLANE55 2-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
TWO-DIMENSIONAL MODEL

ELEMENT TYPE 2 IS SOLID70 3-D THERMAL SOLID
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 6 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 7 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 11 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 16 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 17 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 18 IS MATRIX50 SUBSTRUCTURE MATRIX
KEYOPT(1-12)= 1 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 19 IS LINK31 RADIATION LINK
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 26 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 27 IS LINK32 2-D CONDUCTING BAR
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 36 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

ELEMENT TYPE 46 IS SHELL57 THERMAL SHELL
KEYOPT(1-12)= 0 0 0 0 0 0 0 0 0 0 0 0

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

File props01.dat describes material properties
and thier reference numbers

READ IN MATERIAL PROPERTY LIBRARY FROM FILE= propsd1.dat

/INPUT FILE= propsd1.dat LINE= 0

** ANSYS 5.0 MPC MATERIAL PROPERTY TABLES **

** Filename: propsd1.dat **
** Compiled by T. Lotz on 4-17-95 **

NUMBER	MATERIAL	DESCRIPTION
1	Stainless Steel 316	Pour Canister Material
2	Incaloy 825	Inner Container (resistant)
3	A516 Mild Steel	Outer Container (allowance)
4	Concrete	Concrete used for invert; Track Bed
5	Glass (Pyrex)	Boro-Silicate Glass form
6	TSw2	Drift Wall - Repository Horizon
7	Helium	Canister Fill Gas
8	Air	Alternate Fill Gas
9	Nitrogen	Alternate Fill Gas
10	Argon	Alternate Fill Gas
11	Aluminum 6063	Thermal Conductor
12	Copper	Alternate Thermal Conductor
13	Aluminum-Boron	Aluminum Boron Criticality Matl

** Density: DENS (kg/m^3) **
** Emissivity EMIS **
** Conductivity: KXX (W/m/K) **
** Specific Heat: C (J/kg/K) **

Define densities for all materials except gases
Density of rock (6) is 1.0 because
heat capacitances (J/m^3/K) are entered for C

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .0000000E+00

PROPERTY TABLE DENS MAT= 1 NUM. POINTS= 1
SLOC= 1 8000.000

PROPERTY TABLE DENS MAT= 2 NUM. POINTS= 1
SLOC= 1 8137.900

PROPERTY TABLE DENS MAT= 3 NUM. POINTS= 1
SLOC= 1 8131.000

PROPERTY TABLE DENS MAT= 4 NUM. POINTS= 1
SLOC= 1 2300.000

PROPERTY TABLE DENS MAT= 5 NUM. POINTS= 1
SLOC= 1 2225.000

PROPERTY TABLE DENS MAT= 6 NUM. POINTS= 1
SLOC= 1 1.000000

PROPERTY TABLE DENS MAT= 11 NUM. POINTS= 1
SLOC= 1 2690.000

PROPERTY TABLE DENS MAT= 12 NUM. POINTS= 1
SLOC= 1 8933.000

PROPERTY TABLE DENS MAT= 13 NUM. POINTS= 1
SLOC= 1 2693.000

Define emissivities for all materials except gases

PROPERTY TABLE EMIS MAT= 1 NUM. POINTS= 1
SLOC= 1 .6000000

PROPERTY TABLE EMIS MAT= 2 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 3 NUM. POINTS= 1
SLOC= 1 .8000000

PROPERTY TABLE EMIS MAT= 4 NUM. POINTS= 1
SLOC= 1 .8800000

PROPERTY TABLE EMIS MAT= 5 NUM. POINTS= 1
SLOC= 1 .8100000

PROPERTY TABLE EMIS MAT= 6 NUM. POINTS= 1
SLOC= 1 .8500000

PROPERTY TABLE EMIS MAT= 11 NUM. POINTS= 1
SLOC= 1 .7000000E-01

PROPERTY TABLE EMIS MAT= 12 NUM. POINTS= 1
SLOC= 1 .5000000

PROPERTY TABLE EMIS MAT= 13 NUM. POINTS= 1
SLOC= 1 .7000000E-01

Define specific heat for matl. 4, 5, 7, 11, 14, 15

PROPERTY TABLE C MAT= 4 NUM. POINTS= 1
SLOC= 1 880.0000

PROPERTY TABLE C MAT= 5 NUM. POINTS= 1
SLOC= 1 835.0000

PROPERTY TABLE C MAT= 7 NUM. POINTS= 1
SLOC= 1 5193.000

PROPERTY TABLE C MAT= 11 NUM. POINTS= 1
SLOC= 1 900.0000

Define K for material 4, 5, and 6

PROPERTY TABLE KXX MAT= 4 NUM. POINTS= 1
SLOC= 1 1.400000

PROPERTY TABLE KXX MAT= 5 NUM. POINTS= 1
SLOC= 1 1.100000

PROPERTY TABLE KXX MAT= 6 NUM. POINTS= 1
SLOC= 1 2.100000

Define K and C for materials 1, 3

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 21.11000 37.78000 65.56000
 93.33000 121.1100 148.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
 SLOC= 7 176.6700 204.4400 232.2200
 260.0000 287.7800 315.5600

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***
 SLOC= 13 343.3300 371.1100 398.8900
 426.6700 454.4400 482.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***
 SLOC= 19 510.0000 537.7800 565.5600
 593.3300 621.1100 648.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 30 ***
 SLOC= 25 676.6700 704.4400 732.2200
 760.0000 787.7800 815.5600

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 6
 SLOC= 1 13.33000 13.67000 14.19000 14.54000
 15.06000 15.58000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 12
 SLOC= 7 15.92000 16.44000 16.96000 17.31000
 17.83000 18.17000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 18
 SLOC= 13 18.52000 19.04000 19.38000 19.90000
 20.25000 20.77000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 24
 SLOC= 19 21.11000 21.46000 21.98000 22.33000
 22.67000 23.02000

PROPERTY TABLE KXX MAT= 1 NUM. POINTS= 30
 SLOC= 25 23.54000 23.88000 24.23000 24.58000
 24.92000 25.27000

PROPERTY TABLE C MAT= 1 NUM. POINTS= 6
 SLOC= 1 481.6800 486.9200 498.0900 499.3800
 509.9800 520.2900

PROPERTY TABLE C MAT= 1 NUM. POINTS= 12
 SLOC= 7 521.0700 527.3800 536.9200 537.3400
 543.0200 543.3100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 18
 SLOC= 13 546.9100 552.1400 552.2600 557.2200
 557.2500 565.1100

PROPERTY TABLE C MAT= 1 NUM. POINTS= 24
 SLOC= 19 565.0100 564.9100 572.3500 572.1400
 574.9200 574.6800

PROPERTY TABLE C MAT= 1 NUM. POINTS= 30
 SLOC= 25 581.6400 581.3000 583.8600 586.3600
 585.9600 588.3900

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 6
 SLOC= 1 40.84000 41.36000 41.88000 42.23000
 42.23000 42.23000

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 12
 SLOC= 7 42.06000 41.88000 41.36000 41.02000
 40.50000 39.98000

PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 18

SLOC= 13	39.29000 36.69000	38.77000 36.17000	38.08000	37.56000
PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 24				
SLOC= 19	35.48000 32.36000	34.61000 31.50000	33.92000	33.23000
PROPERTY TABLE KXX MAT= 3 NUM. POINTS= 30				
SLOC= 25	30.29000 26.13000	28.90000 26.13000	27.35000	26.48000
PROPERTY TABLE C MAT= 3 NUM. POINTS= 6				
SLOC= 1	428.7200 486.0800	444.9500 495.6600	460.9400	476.8700
PROPERTY TABLE C MAT= 3 NUM. POINTS= 12				
SLOC= 7	506.0900 543.6300	517.0700 550.6200	525.6400	536.9900
PROPERTY TABLE C MAT= 3 NUM. POINTS= 18				
SLOC= 13	562.2100 611.3500	577.3200 629.0900	589.1000	600.5700
PROPERTY TABLE C MAT= 3 NUM. POINTS= 24				
SLOC= 19	645.3200 724.0700	665.1200 761.9500	682.0700	694.5200
PROPERTY TABLE C MAT= 3 NUM. POINTS= 30				
SLOC= 25	806.3100 808.6800	888.6000 736.9000	1095.040	1638.780

Define K for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***

SLOC= 1	93.33000 176.6700	121.1100 204.4400	148.8900 232.2200
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*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***

SLOC= 7	260.0000 343.3300	287.7800 371.1100	315.5600 398.8900
---------	----------------------	----------------------	----------------------

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 18 ***

SLOC= 13	426.6700 510.0000	454.4400 537.7800	482.2200 565.5600
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*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 24 ***

SLOC= 19	593.3300 676.6700	621.1100 704.4400	648.8900 732.2200
----------	----------------------	----------------------	----------------------

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 27 ***

SLOC= 25	760.0000	787.7800	815.5600
----------	----------	----------	----------

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 6				
SLOC= 1	12.29000 14.02000	12.63000 14.54000	13.15000	13.67000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 12				
SLOC= 7	14.88000 16.61000	15.40000 16.96000	15.75000	16.10000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 18				
SLOC= 13	17.31000 18.86000	17.65000 19.21000	18.00000	18.52000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 24				
SLOC= 19	19.73000 21.46000	20.08000 21.98000	20.42000	20.94000

PROPERTY TABLE KXX MAT= 2 NUM. POINTS= 27
SLOC= 25 22.33000 23.02000 23.54000

Define C for material 2

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 93.33000 121.1100 148.8900
176.6700 204.4400 232.2200

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
SLOC= 7 260.0000 287.7800 315.5600
343.3300 371.1100 398.8900

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 17 ***
SLOC= 13 426.6700 454.4400 482.2200
510.0000 537.7800

PROPERTY TABLE C MAT= 2 NUM. POINTS= 6
SLOC= 1 460.6900 477.4200 501.0200 504.6500
498.1200 520.4500

PROPERTY TABLE C MAT= 2 NUM. POINTS= 12
SLOC= 7 536.8800 559.8500 576.8300 576.2100
581.6800 598.2000

PROPERTY TABLE C MAT= 2 NUM. POINTS= 17
SLOC= 13 619.5800 636.7600 654.2000 678.2500
696.2900

Define C for material 6

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***
SLOC= 1 25.00000 50.00000 94.00000
95.00000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***
SLOC= 5 105.0000 114.0000 115.0000
155.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 11 ***
SLOC= 9 195.0000 235.0000 275.0000

PROPERTY TABLE C MAT= 6 NUM. POINTS= 4
SLOC= 1 2032400. 2128000. 2263800. .1076380E+08

PROPERTY TABLE C MAT= 6 NUM. POINTS= 8
SLOC= 5 .1046900E+08 .1019840E+08 2006500. 2111400.

PROPERTY TABLE C MAT= 6 NUM. POINTS= 11
SLOC= 9 2191200. 2269200. 2341000.

Define p, K, C for materials 7, 8, 9, -10

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 1 -13.15000 6.850000 26.85000
76.85000 126.8500 176.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 12 ***
SLOC= 7 226.8500 276.8500 326.8500
376.8500 426.8500 476.8500

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 15 ***
 SLOC= 13 526.8500 626.8500 726.8500

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 6
 SLOC= 1 .1875000 .1750000 .1625000 .1422000
 .1219000 .1097000

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 12
 SLOC= 7 .9750000E-01 .9060000E-01 .8360000E-01 .7670000E-01
 .6970000E-01 .6620000E-01

PROPERTY TABLE DENS MAT= 7 NUM. POINTS= 15
 SLOC= 13 .6270000E-01 .5580000E-01 .4880000E-01

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 6
 SLOC= 1 .1370000 .1450000 .1520000 .1700000
 .1870000 .2040000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 12
 SLOC= 7 .2200000 .2360000 .2520000 .2640000
 .2780000 .2910000

PROPERTY TABLE KXX MAT= 7 NUM. POINTS= 15
 SLOC= 13 .3040000 .3300000 .3540000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 6
 SLOC= 1 1.348000 1.254700 1.161400 .9950000
 .8711000 .7740000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 12
 SLOC= 7 .6964000 .6329000 .5804000 .5356000
 .4975000 .4643000

PROPERTY TABLE DENS MAT= 8 NUM. POINTS= 15
 SLOC= 13 .4354000 .3868000 .3482000

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 6
 SLOC= 1 .2300000E-01 .2500000E-01 .2600000E-01 .3000000E-01
 .3400000E-01 .3700000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 12
 SLOC= 7 .4100000E-01 .4400000E-01 .4700000E-01 .5000000E-01
 .5200000E-01 .5500000E-01

PROPERTY TABLE KXX MAT= 8 NUM. POINTS= 15
 SLOC= 13 .5700000E-01 .6200000E-01 .6700000E-01

PROPERTY TABLE C MAT= 8 NUM. POINTS= 6
 SLOC= 1 1006.200 1006.600 1007.000 1009.000
 1014.000 1021.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 12
 SLOC= 7 1030.000 1040.000 1051.000 1063.000
 1075.000 1087.000

PROPERTY TABLE C MAT= 8 NUM. POINTS= 15
 SLOC= 13 1099.000 1121.000 1141.000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 6
 SLOC= 1 1.303700 1.213500 1.123300 .9625000
 .8425000 .7485000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 12
 SLOC= 7 .6739000 .6124000 .5615000 .5214000
 .4812000 .4512000

PROPERTY TABLE DENS MAT= 9 NUM. POINTS= 15
 SLOC= 13 .4211000 .3743000 .3368000

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 6
 SLOC= 1 .2300000E-01 .2400000E-01 .2600000E-01 .2900000E-01
 .3300000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 12
 SLOC= 7 .3900000E-01 .4200000E-01 .4500000E-01 .4700000E-01
 .5000000E-01 .5200000E-01

PROPERTY TABLE KXX MAT= 9 NUM. POINTS= 15
 SLOC= 13 .5500000E-01 .6000000E-01 .6500000E-01

PROPERTY TABLE C MAT= 9 NUM. POINTS= 6
 SLOC= 1 1041.800 1041.400 1041.000 1042.000
 1045.000 1050.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 12
 SLOC= 7 1056.000 1065.000 1075.000 1086.500
 1098.000 1159.000

PROPERTY TABLE C MAT= 9 NUM. POINTS= 15
 SLOC= 13 1220.000 1146.000 1167.000

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 6
 SLOC= 1 .1700000E-01 .1700000E-01 .1800000E-01 .2100000E-01
 .2300000E-01 .2500000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 12
 SLOC= 7 .2700000E-01 .2800000E-01 .3000000E-01 .3200000E-01
 .3400000E-01 .3600000E-01

PROPERTY TABLE KXX MAT= 10 NUM. POINTS= 15
 SLOC= 13 .3700000E-01 .4100000E-01 .4400000E-01

Define K and C for material 12

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
 SLOC= 1 -73.15000 26.85000 126.8500
 326.8500 526.8500 726.8500

PROPERTY TABLE KXX MAT= 12 NUM. POINTS= 6
 SLOC= 1 413.0000 401.0000 393.0000 379.0000
 366.0000 352.0000

PROPERTY TABLE C MAT= 12 NUM. POINTS= 6
 SLOC= 1 356.0000 385.0000 397.0000 417.0000
 433.0000 451.0000

Define K and C for material 13

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 5 ***
 SLOC= 1 23.00000 50.00000 100.0000
 150.0000 200.0000

PROPERTY TABLE KXX MAT= 13 NUM. POINTS= 5
 SLOC= 1 182.5600 190.1700 199.2200 202.9100
 203.7200

PROPERTY TABLE C MAT= 13 NUM. POINTS= 5
 SLOC= 1 868.0000 903.0000 946.0000 976.0000
 998.0000

 ** End of Material Property List **

Define new material 15 for low thermal loading
outer barrier of 70/30 Copper Nickel (C71500)
Density: DENS (kg/m³)
Emissivity: EMIS
Conductivity: KXX (W/m/K)
Specific Heat: C (J/kg/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 1 ***
SLOC= 1 .000000E+00
Density (lb/in³ converted to kg/m³)

PROPERTY TABLE DENS MAT= 15 NUM. POINTS= 1
SLOC= 1 8940.640
Emissivity

PROPERTY TABLE EMIS MAT= 15 NUM. POINTS= 1
SLOC= 1 .4000000
Specific Heat (Btu/lb/F converted to J/kg/K)

PROPERTY TABLE C MAT= 15 NUM. POINTS= 1
SLOC= 1 376.7898
Conductivity (Btu/hr/ft/F converted to W/m/K)

TEMPERATURE TABLE ERASED.

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 2 ***
SLOC= 1 20.00000 100.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 4 ***
SLOC= 3 200.0000 300.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 6 ***
SLOC= 5 400.0000 500.0000

*** PROPERTY TEMPERATURE TABLE NUM. TEMPS= 8 ***
SLOC= 7 600.0000 700.0000

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 2
SLOC= 1 29.42190 29.24883

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 4
SLOC= 3 34.09479 38.59461

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 6
SLOC= 5 43.09443 48.11346

PROPERTY TABLE KXX MAT= 15 NUM. POINTS= 8
SLOC= 7 53.13249 58.15152

Read in single drum heat loads
Calculate the volumetric heat generation
(Assembly time is in years, FUEL is in seconds)

/INPUT FILE= hangls1.dat LINE= 0

** History of DHLW GLASS POUR CANISTER Heat Generation Rates **
** Output Calculated by T. L. Lotz 4/17/95 for ORNL Report Data **
**

** Executable File Name: MATHCAD.EXE **
** Output File Name: hanfgl1.dat **
** Execution Date: 04/17/95 **
** Start Age (years): 0.0 **
** Decay Period (years): 10000 **
** Enrichment (kg Pu): N.A. **
** Burnup (Mwd/MTHM): N.A. **
** Assembly Type: SR Pour Canis **
** Pu Fract. (kg Pu/KG HM):N.A. **
**

** ASSY(#,1) is the Pour Cainsster heat in Watts. **
 ** ASSY(#,0) is the time post emplacement in years. **

PARAMETER ASSY(1,1) =	871.2000 860.1000	868.4000 857.4000	865.6000	862.9000
PARAMETER ASSY(7,1) =	854.8000 844.3000	852.1000 831.8000	849.5000	846.9000
PARAMETER ASSY(13,1) =	819.7000 776.4000	808.2000 766.7000	797.1000	786.6000
PARAMETER ASSY(19,1) =	757.4000 723.7000	748.4000 716.1000	739.9000	731.6000
PARAMETER ASSY(25,1) =	708.9000 682.5000	701.9000 631.9000	695.2000	688.7000
PARAMETER ASSY(31,1) =	596.7000 524.9000	571.3000 514.5000	552.1000	537.1000
PARAMETER ASSY(37,1) =	505.5000 476.4000	497.3000 470.2000	489.9000	483.0000
PARAMETER ASSY(43,1) =	464.3000 442.1000	458.5000 393.8000	452.9000	447.5000
PARAMETER ASSY(49,1) =	351.5000 225.4000	314.1000 202.2000	280.9000	251.5000
PARAMETER ASSY(55,1) =	181.6000 120.0000	163.4000 108.7000	147.2000	132.8000
PARAMETER ASSY(61,1) =	98.57000 68.25000	89.60000 32.95000	81.64000	74.55000
PARAMETER ASSY(67,1) =	21.19000 11.42000	16.60000 10.33000	14.26000	12.69000
PARAMETER ASSY(73,1) =	9.355000 6.318000	8.477000 5.731000	7.684000	6.967000
PARAMETER ASSY(79,1) =	5.199000 3.533000	4.719000 1.390000	4.283000	3.890000
PARAMETER ASSY(85,1) =	.5979000 .1284000	.3034000 .1181000	.1920000	.1478000
PARAMETER ASSY(91,1) =	.1111000 .9000000E-01	.1054000 .8500000E-01	.1002000	.9510000E-01
PARAMETER ASSY(97,1) =	.8000000E-01 .6000000E-01	.7500000E-01	.7000000E-01	.6500000E-01
PARAMETER ASSY(1,0) =	.1000000E-05 .4000000E-01	.1000000E-01 .5000000E-01	.2000000E-01	.3000000E-01
PARAMETER ASSY(7,0) =	.6000000E-01 .1000000	.7000000E-01 .1500000	.8000000E-01	.9000000E-01
PARAMETER ASSY(13,0) =	.2000000 .4000000	.2500000 .4500000	.3000000	.3500000
PARAMETER ASSY(19,0) =	.5000000 .7000000	.5500000 .7500000	.6000000	.6500000
PARAMETER ASSY(25,0) =	.8000000 1.000000	.8500000 1.500000	.9000000	.9500000

PARAMETER ASSY(31,0) =	2.000000 4.000000	2.500000 4.500000	3.000000	3.500000
PARAMETER ASSY(37,0) =	5.000000 7.000000	5.500000 7.500000	6.000000	6.500000
PARAMETER ASSY(43,0) =	8.000000 10.00000	8.500000 15.00000	9.000000	9.500000
PARAMETER ASSY(49,0) =	20.00000 40.00000	25.00000 45.00000	30.00000	35.00000
PARAMETER ASSY(55,0) =	50.00000 70.00000	55.00000 75.00000	60.00000	65.00000
PARAMETER ASSY(61,0) =	80.00000 100.0000	85.00000 150.0000	90.00000	95.00000
PARAMETER ASSY(67,0) =	200.0000 400.0000	250.0000 450.0000	300.0000	350.0000
PARAMETER ASSY(73,0) =	500.0000 700.0000	550.0000 750.0000	600.0000	650.0000
PARAMETER ASSY(79,0) =	800.0000 1000.000	850.0000 1500.000	900.0000	950.0000
PARAMETER ASSY(85,0) =	2000.000 4000.000	2500.000 4500.000	3000.000	3500.000
PARAMETER ASSY(91,0) =	5000.000 7000.000	5500.000 7500.000	6000.000	6500.000
PARAMETER ASSY(97,0) =	8000.000 10000.00	8500.000	9000.000	9500.000

PARAMETER ASSY(0,1) = 1.000000

FACTOR ON VECTOR OPERATION RESULT= .31558E+08
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

MATRIX COPY RESULT MATRIX= FUEL(1,0)
 INPUT MATRIX= ASSY(1,0)
 INPUT MATRIX SIZE= 101 ROWS BY 2 COLUMNS
 RESULT MATRIX SIZE= 101 ROWS BY 2 COLUMNS

FACTOR ON VECTOR OPERATION RESULT= 1.6939
 FACTOR ON FIRST VECTOR PARAMETER = 1.0000
 FACTOR ON SECOND VECTOR PARAMETER= 1.0000
 FACTOR ON THIRD VECTOR PARAMETER = 1.0000

VECTOR PARAMETER OPERATION *VFUN
 FUEL(1) = COPY ASSY(1)
 SCALE FACTORS RESULT= 1.6939 INPUT= 1.0000
 VECTOR LENGTH= 101

PARAMETER FUEL(0,1) = 1.000000

Define LOCAL Coordinate system for canister orientation
 if use CSYS,0, the P. Cans are 2x2,
 if use CSYS,15, the P. Cans are 1x2x1

LOCAL,15,0,0,0,0,0,0,45.0,0,0,0,0,

Construct geometry for a single SRP Pour Canister
 (K's 1 - 10)
 (L's 1 - 16)

(A's 1 - 8)

KEYPOINT	1	X,Y,Z=	.000000E+00	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	2	X,Y,Z=	.324951	.324951	.000000E+00	IN CSYS= 0
KEYPOINT	3	X,Y,Z=	.116142	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	4	X,Y,Z=	.116142	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	5	X,Y,Z=	.533759	.533759	.000000E+00	IN CSYS= 0
KEYPOINT	6	X,Y,Z=	.533759	.116142	.000000E+00	IN CSYS= 0
KEYPOINT	7	X,Y,Z=	.109424	.109424	.000000E+00	IN CSYS= 0
KEYPOINT	8	X,Y,Z=	.109424	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	9	X,Y,Z=	.540477	.540477	.000000E+00	IN CSYS= 0
KEYPOINT	10	X,Y,Z=	.540477	.109424	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS		3	2			
LINE NO.= 1	KP1=	3	TAN1=	-.7071	-.7071	.0000
	KP2=	2	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS		2	6			
LINE NO.= 2	KP1=	2	TAN1=	-.7071	.7071	.0000
	KP2=	6	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS		4	2			
LINE NO.= 3	KP1=	4	TAN1=	-.7071	.7071	.0000
	KP2=	2	TAN2=	.7071	-.7071	.0000

LINE CONNECTS KEYPOINTS		2	5			
LINE NO.= 4	KP1=	2	TAN1=	-.7071	-.7071	.0000
	KP2=	5	TAN2=	.7071	.7071	.0000

ARC BETWEEN KEYPOINTS	6 AND 5	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 5	KP1= 6	TAN1=	-.7071
	KP2= 5	TAN2=	-.7071
			.0000

ARC BETWEEN KEYPOINTS	5 AND 4	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 6	KP1= 5	TAN1=	.7071
	KP2= 4	TAN2=	-.7071
			.0000

ARC BETWEEN KEYPOINTS	4 AND 3	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 7	KP1= 4	TAN1=	.7071
	KP2= 3	TAN2=	.7071
			.0000

ARC BETWEEN KEYPOINTS	3 AND 6	ORIENTATION KEYPOINT=	2
RADIUS=	.29530		
LINE NO.= 8	KP1= 3	TAN1=	-.7071
	KP2= 6	TAN2=	.7071
			.0000

LINE CONNECTS KEYPOINTS		7	3			
LINE NO.= 9	KP1=	7	TAN1=	-.7071	-.7071	.0000
	KP2=	3	TAN2=	.7071	.7071	.0000

LINE CONNECTS KEYPOINTS		10	6			
LINE NO.= 10	KP1=	10	TAN1=	.7071	-.7071	.0000
	KP2=	6	TAN2=	-.7071	.7071	.0000

LINE CONNECTS KEYPOINTS		9	5			
LINE NO.= 11	KP1=	9	TAN1=	.7071	.7071	.0000
	KP2=	5	TAN2=	-.7071	-.7071	.0000

```

LINE CONNECTS KEYPOINTS      8      4
LINE NO.= 12 KP1=      8 TAN1=  -.7071  .7071  .0000
                KP2=      4 TAN2=  .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      7 AND      8 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 13 KP1=      7 TAN1=  .7071  -.7071  .0000
                KP2=      8 TAN2=  .7071  .7071  .0000

ARC BETWEEN KEYPOINTS      8 AND      9 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 14 KP1=      8 TAN1=  -.7071  -.7071  .0000
                KP2=      9 TAN2=  .7071  -.7071  .0000

ARC BETWEEN KEYPOINTS      9 AND     10 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 15 KP1=      9 TAN1=  -.7071  .7071  .0000
                KP2=     10 TAN2=  -.7071  -.7071  .0000

ARC BETWEEN KEYPOINTS     10 AND      7 ORIENTATION KEYPOINT=      2
RADIUS= .30480
LINE NO.= 16 KP1=     10 TAN1=  .7071  .7071  .0000
                KP2=      7 TAN2=  -.7071  .7071  .0000

DEFINE AREA BY LIST OF LINES
  LINE LIST =      2      4      5
  (TRAVERSED IN SAME DIRECTION AS LINE      2)

  AREA NUMBER =      1

DEFINE AREA BY LIST OF LINES
  LINE LIST =      1      2      8
  (TRAVERSED IN SAME DIRECTION AS LINE      1)

  AREA NUMBER =      2

DEFINE AREA BY LIST OF LINES
  LINE LIST =      1      3      7
  (TRAVERSED IN SAME DIRECTION AS LINE      1)

  AREA NUMBER =      3

DEFINE AREA BY LIST OF LINES
  LINE LIST =      3      4      6
  (TRAVERSED IN SAME DIRECTION AS LINE      3)

  AREA NUMBER =      4

DEFINE AREA BY LIST OF LINES
  LINE LIST =      5     10     15     11
  (TRAVERSED IN SAME DIRECTION AS LINE      5)

  AREA NUMBER =      5

DEFINE AREA BY LIST OF LINES
  LINE LIST =      8      9     16     10
  (TRAVERSED IN SAME DIRECTION AS LINE      8)

  AREA NUMBER =      6

DEFINE AREA BY LIST OF LINES
  LINE LIST =      7     12     13      9
  (TRAVERSED IN SAME DIRECTION AS LINE      7)

  AREA NUMBER =      7

DEFINE AREA BY LIST OF LINES
  LINE LIST =      6     11     14     12
  (TRAVERSED IN SAME DIRECTION AS LINE      6)

```

AREA NUMBER = 8

Interior and WP, Next

(K's 11 - 19)

(L's 17 - 34)

(A's 9 - 16)

KEYPOINT	11	X,Y,Z=	.784500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	12	X,Y,Z=	.554725	.554725	.000000E+00	IN CSYS= 0
KEYPOINT	13	X,Y,Z=	.000000E+00	.784500	.000000E+00	IN CSYS= 0
KEYPOINT	14	X,Y,Z=	.804500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	15	X,Y,Z=	.568867	.568867	.000000E+00	IN CSYS= 0
KEYPOINT	16	X,Y,Z=	.000000E+00	.804500	.000000E+00	IN CSYS= 0
KEYPOINT	17	X,Y,Z=	.854500	.000000E+00	.000000E+00	IN CSYS= 0
KEYPOINT	18	X,Y,Z=	.604223	.604223	.000000E+00	IN CSYS= 0
KEYPOINT	19	X,Y,Z=	.000000E+00	.854500	.000000E+00	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	7			
LINE NO.= 17	KP1=	1	TAN1=	-.7071	-.7071 .0000
	KP2=	7	TAN2=	.7071	.7071 .0000

LINE CONNECTS KEYPOINTS	10	11			
LINE NO.= 18	KP1=	10	TAN1=	-.9125	-.4092 .0000
	KP2=	11	TAN2=	.9125	-.4092 .0000

LINE CONNECTS KEYPOINTS	9	12			
LINE NO.= 19	KP1=	9	TAN1=	-.7071	-.7071 .0000
	KP2=	12	TAN2=	.7071	.7071 .0000

LINE CONNECTS KEYPOINTS	8	13			
LINE NO.= 20	KP1=	8	TAN1=	.4092	-.9125 .0000
	KP2=	13	TAN2=	-.4092	.9125 .0000

LINE CONNECTS KEYPOINTS	1	13			
LINE NO.= 21	KP1=	1	TAN1=	.0000	-1.0000 .0000
	KP2=	13	TAN2=	.0000	1.0000 .0000

LINE CONNECTS KEYPOINTS	1	11			
LINE NO.= 22	KP1=	1	TAN1=	-1.0000	.0000 .0000
	KP2=	11	TAN2=	1.0000	.0000 .0000

ARC BETWEEN KEYPOINTS	11 AND 12	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 23	KP1= 11	TAN1=	.0000 -1.0000 .0000
	KP2= 12	TAN2=	-.7071 .7071 .0000

ARC BETWEEN KEYPOINTS	12 AND 13	ORIENTATION KEYPOINT=	1
RADIUS= .78450			
LINE NO.= 24	KP1= 12	TAN1=	.7071 -.7071 .0000
	KP2= 13	TAN2=	-1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS	11	14			
LINE NO.= 25	KP1=	11	TAN1=	-1.0000	.0000 .0000
	KP2=	14	TAN2=	1.0000	.0000 .0000

LINE CONNECTS KEYPOINTS	12	15			
LINE NO.= 26	KP1=	12	TAN1=	-.7071	-.7071 .0000
	KP2=	15	TAN2=	.7071	.7071 .0000

LINE CONNECTS KEYPOINTS	16	13			
LINE NO.= 27	KP1=	16	TAN1=	.0000	1.0000 .0000

KP2= 13 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 14 AND 15 ORIENTATION KEYPOINT= 1
RADIUS= .80450
LINE NO.= 28 KP1= 14 TAN1= .0000 -1.0000 .0000
KP2= 15 TAN2= -.7071 .7071 .0000

ARC BETWEEN KEYPOINTS 15 AND 16 ORIENTATION KEYPOINT= 1
RADIUS= .80450
LINE NO.= 29 KP1= 15 TAN1= .7071 -.7071 .0000
KP2= 16 TAN2= -1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 14 17
LINE NO.= 30 KP1= 14 TAN1= -1.0000 .0000 .0000
KP2= 17 TAN2= 1.0000 .0000 .0000

LINE CONNECTS KEYPOINTS 15 18
LINE NO.= 31 KP1= 15 TAN1= -.7071 -.7071 .0000
KP2= 18 TAN2= .7071 .7071 .0000

LINE CONNECTS KEYPOINTS 19 16
LINE NO.= 32 KP1= 19 TAN1= .0000 1.0000 .0000
KP2= 16 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 18 AND 17 ORIENTATION KEYPOINT= 1
RADIUS= .85450
LINE NO.= 33 KP1= 18 TAN1= -.7071 .7071 .0000
KP2= 17 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 19 AND 18 ORIENTATION KEYPOINT= 1
RADIUS= .85450
LINE NO.= 34 KP1= 19 TAN1= -1.0000 .0000 .0000
KP2= 18 TAN2= .7071 -.7071 .0000

DEFINE AREA BY LIST OF LINES
LINE LIST = 22 18 16 17
(TRAVERSED IN SAME DIRECTION AS LINE 22)

AREA NUMBER = 9

DEFINE AREA BY LIST OF LINES
LINE LIST = 23 19 15 18
(TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 10

DEFINE AREA BY LIST OF LINES
LINE LIST = 24 20 14 19
(TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 11

DEFINE AREA BY LIST OF LINES
LINE LIST = 21 17 13 20
(TRAVERSED IN SAME DIRECTION AS LINE 21)

AREA NUMBER = 12

DEFINE AREA BY LIST OF LINES
LINE LIST = 23 25 28 26
(TRAVERSED IN SAME DIRECTION AS LINE 23)

AREA NUMBER = 13

DEFINE AREA BY LIST OF LINES
LINE LIST = 24 26 29 27
(TRAVERSED IN SAME DIRECTION AS LINE 24)

AREA NUMBER = 14

DEFINE AREA BY LIST OF LINES

LINE LIST = 28 30 33 31
(TRAVERSED IN SAME DIRECTION AS LINE 28)

AREA NUMBER = 15

DEFINE AREA BY LIST OF LINES

LINE LIST = 29 31 34 32
(TRAVERSED IN SAME DIRECTION AS LINE 29)

AREA NUMBER = 16

Set element shapes and sizes

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

DEFAULT ELEMENT DIVISIONS PER LINE = 1

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 4 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 5 TO 8 STEP 1

8 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 13 TO 16 STEP 1

12 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 21 TO 24 STEP 1

16 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 28 TO 29 STEP 1

18 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 33 TO 34 STEP 1

20 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 4, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 9 TO 12 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 17 TO 20 STEP 1

4 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 25 TO 27 STEP 1

7 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 30 TO 32 STEP 1

10 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 34 STEP 1

34 LINES (OF 34 DEFINED) SELECTED BY LSEL COMMAND.

Mesh areas
glass, stainless pour canister, He, IB, OB,

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 1 TO 4 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 57
MAXIMUM ELEMENT NUMBER = 48

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 5 TO 8 IN STEPS OF 1

NUMBER OF AREAS MESHED = 4
MAXIMUM NODE NUMBER = 73
MAXIMUM ELEMENT NUMBER = 64

MATERIAL NUMBER SET TO 7

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
IN AREAS 9 TO 12 IN STEPS OF 1

*** WARNING *** CP= 2.940 TIME= 03:41:45
Area 9 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 2.960 TIME= 03:41:45
Meshing of area 9 produced 5 poorly shaped elements.

*** NOTE *** CP= 2.960 TIME= 03:41:45
Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
67 68 70 71 72

*** WARNING *** CP= 3.020 TIME= 03:41:45
Area 12 has a corner angle of 24 degrees. This is not recommended for
quadrilateral elements.

*** WARNING *** CP= 3.040 TIME= 03:41:45
Meshing of area 12 produced 5 poorly shaped elements.

*** NOTE *** CP= 3.040 TIME= 03:41:45

Worst shape angle is 18 degrees.

*** LIST OF ELEMENTS WITH POOR SHAPE ***
 92 93 94 95 96

NUMBER OF AREAS MESHED = 4
 MAXIMUM NODE NUMBER = 105
 MAXIMUM ELEMENT NUMBER = 96

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 13 TO 14 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 123
 MAXIMUM ELEMENT NUMBER = 112

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 1

GENERATE NODES AND ELEMENTS
 IN AREAS 15 TO 16 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
 MAXIMUM NODE NUMBER = 141
 MAXIMUM ELEMENT NUMBER = 128

Set up paths to extrude 3-D volumes from 2-D surfaces

(K's 20 - 31)

(L's 35 - 46)

Bottom direction first

KEYPOINT	20	X,Y,Z=	.000000E+00	.000000E+00	-1.49500	IN CSYS= 0
KEYPOINT	21	X,Y,Z=	.000000E+00	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	22	X,Y,Z=	.000000E+00	.000000E+00	-1.53500	IN CSYS= 0
KEYPOINT	23	X,Y,Z=	.000000E+00	.000000E+00	-1.56000	IN CSYS= 0
KEYPOINT	24	X,Y,Z=	.000000E+00	.000000E+00	-1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	20				
LINE NO.= 35	KP1=	1	TAN1=	.0000	.0000	1.0000
	KP2=	20	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	20	21				
LINE NO.= 36	KP1=	20	TAN1=	.0000	.0000	-1.0000
	KP2=	21	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	21	22				
LINE NO.= 37	KP1=	21	TAN1=	.0000	.0000	1.0000
	KP2=	22	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	22	23				
LINE NO.= 38	KP1=	22	TAN1=	.0000	.0000	1.0000
	KP2=	23	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS	23	24				
LINE NO.= 39	KP1=	23	TAN1=	.0000	.0000	1.0000
	KP2=	24	TAN2=	.0000	.0000	-1.0000

Top direction Next

KEYPOINT	25	X,Y,Z=	.000000E+00	.000000E+00	.659900	IN CSYS= 0
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KEYPOINT	26	X,Y,Z=	.000000E+00	.000000E+00	1.21460	IN CSYS= 0
KEYPOINT	27	X,Y,Z=	.000000E+00	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	28	X,Y,Z=	.000000E+00	.000000E+00	1.50500	IN CSYS= 0
KEYPOINT	29	X,Y,Z=	.000000E+00	.000000E+00	1.53000	IN CSYS= 0
KEYPOINT	30	X,Y,Z=	.000000E+00	.000000E+00	1.56000	IN CSYS= 0
KEYPOINT	31	X,Y,Z=	.000000E+00	.000000E+00	1.61500	IN CSYS= 0

LINE CONNECTS KEYPOINTS	1	25			
LINE NO.= 40	KP1=	1	TAN1=	.0000	.0000 -1.0000
	KP2=	25	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	25	26			
LINE NO.= 41	KP1=	25	TAN1=	.0000	.0000 -1.0000
	KP2=	26	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	26	27			
LINE NO.= 42	KP1=	26	TAN1=	.0000	.0000 -1.0000
	KP2=	27	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	27	28			
LINE NO.= 43	KP1=	27	TAN1=	.0000	.0000 -1.0000
	KP2=	28	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	28	29			
LINE NO.= 44	KP1=	28	TAN1=	.0000	.0000 -1.0000
	KP2=	29	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	29	30			
LINE NO.= 45	KP1=	29	TAN1=	.0000	.0000 -1.0000
	KP2=	30	TAN2=	.0000	.0000 1.0000

LINE CONNECTS KEYPOINTS	30	31			
LINE NO.= 46	KP1=	30	TAN1=	.0000	.0000 -1.0000
	KP2=	31	TAN2=	.0000	.0000 1.0000

Set number of element divisions for extrusion into 3-D

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.
GLASS

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 35 TO 35 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO N DIV = 3, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 40 TO 40 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO N DIV = 2, SPACING RATIO = 1.000
Interior He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 41 TO 41 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES

TO NDIV = 2, SPACING RATIO = 1.000
Canister Shell

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 42 TO 42 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 1, SPACING RATIO = 1.000
Interior WP He Space

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 37 TO 37 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 43 TO 43 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 3, SPACING RATIO = 1.000
Inner Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 38 TO 38 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 44 TO 44 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer/Inner Barrier Gap (HE)

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 45 TO 45 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000
Outer Barrier Lids

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 39 TO 39 STEP 1

1 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 46 TO 46 STEP 1

2 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 46 STEP 1

46 LINES (OF 46 DEFINED) SELECTED BY LSEL COMMAND.

Reset coordinates if CSYS,15, option was used

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Set up drift wall radiation matrix

(K's 32 - 34)

1) Define K's for extrude (will not use)

KEYPOINT 32 X,Y,Z= .000000E+00 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 33 X,Y,Z= .000000E+00 .183300 8.08250 IN CSYS= 0

KEYPOINT 34 X,Y,Z= .000000E+00 .183300 -8.08250 IN CSYS= 0

Define extrude lines (will not use)

(L's 47,48)

LINE CONNECTS KEYPOINTS 32 33

LINE NO.= 47 KP1= 32 TAN1= .0000 .0000 -1.0000

KP2= 33 TAN2= .0000 .0000 1.0000

LINE CONNECTS KEYPOINTS 32 34

LINE NO.= 48 KP1= 32 TAN1= .0000 .0000 1.0000

KP2= 34 TAN2= .0000 .0000 -1.0000

Extrude drift 8 elements with smallest
elements at WP mid-length (will not use)

SET DIVISIONS ON LINE 47 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 48 (IF SELECTED AND UNMESHED)

TO NDIV = 8, SPACING RATIO = 8.400

2) Define K's and lines for lines of drift wall

(K's 35 - 39)

(L's 49 - 53)

Center Point

KEYPOINT 35 X,Y,Z= 1.73494 -1.61670 .000000E+00 IN CSYS= 0

KEYPOINT 36 X,Y,Z= 2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 37 X,Y,Z= .000000E+00 2.68330 .000000E+00 IN CSYS= 0

KEYPOINT 38 X,Y,Z= -2.50000 .183300 .000000E+00 IN CSYS= 0

KEYPOINT 39 X,Y,Z= -1.73494 -1.61670 .000000E+00 IN CSYS= 0

ARC BETWEEN KEYPOINTS 35 AND 36 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 49 KP1= 35 TAN1= -.7200 -.6940 .0000

KP2= 36 TAN2= .0000 1.0000 .0000

ARC BETWEEN KEYPOINTS 36 AND 37 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 50 KP1= 36 TAN1= .0000 -1.0000 .0000

KP2= 37 TAN2= -1.0000 .0000 .0000

ARC BETWEEN KEYPOINTS 37 AND 38 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 51 KP1= 37 TAN1= 1.0000 .0000 .0000

KP2= 38 TAN2= .0000 -1.0000 .0000

ARC BETWEEN KEYPOINTS 38 AND 39 ORIENTATION KEYPOINT= 32

RADIUS= 2.5000

LINE NO.= 52 KP1= 38 TAN1= .0000 1.0000 .0000

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      KP2=      39 TAN2=      .7200      -.6940      .0000

LINE CONNECTS KEYPOINTS      39      35
LINE NO.=      53 KP1=      39 TAN1=     -1.0000      .0000      .0000
      KP2=      35 TAN2=      1.0000      .0000      .0000
      Set element spacing for meshing

SET DIVISIONS ON LINE      49 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      50 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      51 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      52 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      53 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000
      Back Point
      (K's 40 - 44)
      (L's 54 - 58)

KEYPOINT      40 X,Y,Z=      1.73494      -1.61670      -8.08250      IN CSYS=      0
KEYPOINT      41 X,Y,Z=      2.50000      .183300      -8.08250      IN CSYS=      0
KEYPOINT      42 X,Y,Z=      .000000E+00      2.68330      -8.08250      IN CSYS=      0
KEYPOINT      43 X,Y,Z=     -2.50000      .183300      -8.08250      IN CSYS=      0
KEYPOINT      44 X,Y,Z=     -1.73494      -1.61670      -8.08250      IN CSYS=      0

ARC BETWEEN KEYPOINTS      40 AND      41 ORIENTATION KEYPOINT=      34
RADIUS=      2.5000
LINE NO.=      54 KP1=      40 TAN1=     -.7200      -.6940      .0000
      KP2=      41 TAN2=      .0000      1.0000      .0000

ARC BETWEEN KEYPOINTS      41 AND      42 ORIENTATION KEYPOINT=      34
RADIUS=      2.5000
LINE NO.=      55 KP1=      41 TAN1=      .0000     -1.0000      .0000
      KP2=      42 TAN2=     -1.0000      .0000      .0000

ARC BETWEEN KEYPOINTS      42 AND      43 ORIENTATION KEYPOINT=      34
RADIUS=      2.5000
LINE NO.=      56 KP1=      42 TAN1=      1.0000      .0000      .0000
      KP2=      43 TAN2=      .0000     -1.0000      .0000

ARC BETWEEN KEYPOINTS      43 AND      44 ORIENTATION KEYPOINT=      34
RADIUS=      2.5000
LINE NO.=      57 KP1=      43 TAN1=      .0000      1.0000      .0000
      KP2=      44 TAN2=      .7200      -.6940      .0000

LINE CONNECTS KEYPOINTS      44      40
LINE NO.=      58 KP1=      44 TAN1=     -1.0000      .0000      .0000
      KP2=      40 TAN2=      1.0000      .0000      .0000
      Set element spacing for meshing

SET DIVISIONS ON LINE      54 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      55 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      56 (IF SELECTED AND UNMESHED)
TO NDIV =      4, SPACING RATIO =      1.000

SET DIVISIONS ON LINE      57 (IF SELECTED AND UNMESHED)

```

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 58 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

Front Point

(K's 45 - 49)

(L's 59 - 63)

KEYPOINT	45	X,Y,Z=	1.73494	-1.61670	8.08250	IN CSYS= 0
KEYPOINT	46	X,Y,Z=	2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	47	X,Y,Z=	.000000E+00	2.68330	8.08250	IN CSYS= 0
KEYPOINT	48	X,Y,Z=	-2.50000	.183300	8.08250	IN CSYS= 0
KEYPOINT	49	X,Y,Z=	-1.73494	-1.61670	8.08250	IN CSYS= 0

ARC BETWEEN KEYPOINTS 45 AND 46 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 59	KP1= 45	TAN1=	-.7200	-.6940	.0000
	KP2= 46	TAN2=	.0000	1.0000	.0000

ARC BETWEEN KEYPOINTS 46 AND 47 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 60	KP1= 46	TAN1=	.0000	-1.0000	.0000
	KP2= 47	TAN2=	-1.0000	.0000	.0000

ARC BETWEEN KEYPOINTS 47 AND 48 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 61	KP1= 47	TAN1=	1.0000	.0000	.0000
	KP2= 48	TAN2=	.0000	-1.0000	.0000

ARC BETWEEN KEYPOINTS 48 AND 49 ORIENTATION KEYPOINT= 33

RADIUS= 2.5000

LINE NO.= 62	KP1= 48	TAN1=	.0000	1.0000	.0000
	KP2= 49	TAN2=	.7200	-.6940	.0000

LINE CONNECTS KEYPOINTS 49 45

LINE NO.= 63	KP1= 49	TAN1=	-1.0000	.0000	.0000
	KP2= 45	TAN2=	1.0000	.0000	.0000

Set element spacing for meshing

SET DIVISIONS ON LINE 59 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 60 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 61 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 62 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

SET DIVISIONS ON LINE 63 (IF SELECTED AND UNMESHED)

TO NDIV = 4, SPACING RATIO = 1.000

3) Create connecting lines for wall; make areas
(L's 64 - 68)

LINE CONNECTS KEYPOINTS 35 40

LINE NO.= 64	KP1= 35	TAN1=	.0000	.0000	1.0000
	KP2= 40	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS 36 41

LINE NO.= 65	KP1= 36	TAN1=	.0000	.0000	1.0000
	KP2= 41	TAN2=	.0000	.0000	-1.0000

LINE CONNECTS KEYPOINTS 37 42

LINE NO.= 66	KP1= 37	TAN1=	.0000	.0000	1.0000
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KP2= 42 TAN2= .0000 .0000 -1.0000
 LINE CONNECTS KEYPOINTS 38 43
 LINE NO.= 67 KP1= 38 TAN1= .0000 .0000 1.0000
 KP2= 43 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 39 44
 LINE NO.= 68 KP1= 39 TAN1= .0000 .0000 1.0000
 KP2= 44 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 64 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 65 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 66 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 67 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400

SET DIVISIONS ON LINE 68 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = 8.400
 (L's 69 - 73)

LINE CONNECTS KEYPOINTS 45 35
 LINE NO.= 69 KP1= 45 TAN1= .0000 .0000 1.0000
 KP2= 35 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 46 36
 LINE NO.= 70 KP1= 46 TAN1= .0000 .0000 1.0000
 KP2= 36 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 47 37
 LINE NO.= 71 KP1= 47 TAN1= .0000 .0000 1.0000
 KP2= 37 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 48 38
 LINE NO.= 72 KP1= 48 TAN1= .0000 .0000 1.0000
 KP2= 38 TAN2= .0000 .0000 -1.0000

LINE CONNECTS KEYPOINTS 49 39
 LINE NO.= 73 KP1= 49 TAN1= .0000 .0000 1.0000
 KP2= 39 TAN2= .0000 .0000 -1.0000

SET DIVISIONS ON LINE 69 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 70 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 71 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 72 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

SET DIVISIONS ON LINE 73 (IF SELECTED AND UNMESHED)
 TO NDIV = 8, SPACING RATIO = .119

Define cylindrical coordinate system for rotations, etc.

COORDINATE SYSTEM 11 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .00000E+00 .00000E+00 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (A's 17 - 26)

DEFINE AREA BY LIST OF LINES

LINE LIST = 49 65 54 64
(TRAVERSED IN SAME DIRECTION AS LINE 49)

*** WARNING *** CP= 3.580 TIME= 03:41:46

Lines 49, 65, 54, and 64 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 17

DEFINE AREA BY LIST OF LINES

LINE LIST = 50 66 55 65
(TRAVERSED IN SAME DIRECTION AS LINE 50)

*** WARNING *** CP= 3.630 TIME= 03:41:46

Lines 50, 66, 55, and 65 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 18

DEFINE AREA BY LIST OF LINES

LINE LIST = 51 67 56 66
(TRAVERSED IN SAME DIRECTION AS LINE 51)

*** WARNING *** CP= 3.670 TIME= 03:41:46

Lines 51, 67, 56, and 66 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 19

DEFINE AREA BY LIST OF LINES

LINE LIST = 52 68 57 67
(TRAVERSED IN SAME DIRECTION AS LINE 52)

*** WARNING *** CP= 3.710 TIME= 03:41:46

Lines 52, 68, 57, and 67 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 20

DEFINE AREA BY LIST OF LINES

LINE LIST = 59 70 49 69
(TRAVERSED IN SAME DIRECTION AS LINE 59)

*** WARNING *** CP= 3.740 TIME= 03:41:46

Lines 59, 70, 49, and 69 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 21

DEFINE AREA BY LIST OF LINES

LINE LIST = 60 71 50 70
(TRAVERSED IN SAME DIRECTION AS LINE 60)

*** WARNING *** CP= 3.780 TIME= 03:41:46

Lines 60, 71, 50, and 70 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 22

DEFINE AREA BY LIST OF LINES

LINE LIST = 61 72 51 71

(TRAVERSED IN SAME DIRECTION AS LINE 61)

*** WARNING *** CP= 3.830 TIME= 03:41:46
Lines 61, 72, 51, and 71 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 23

DEFINE AREA BY LIST OF LINES

LINE LIST = 62 73 52 72
(TRAVERSED IN SAME DIRECTION AS LINE 62)

*** WARNING *** CP= 3.860 TIME= 03:41:46
Lines 62, 73, 52, and 72 do not lie on a common
coordinate value in the currently active coordinate system
(CSYS). A non-planar area (Coons patch) will be fitted.

AREA NUMBER = 24

DEFINE AREA BY LIST OF LINES

LINE LIST = 53 64 58 68
(TRAVERSED IN SAME DIRECTION AS LINE 53)

AREA NUMBER = 25

DEFINE AREA BY LIST OF LINES

LINE LIST = 63 69 53 73
(TRAVERSED IN SAME DIRECTION AS LINE 63)

AREA NUMBER = 26

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
4) Set material type and Mesh areas

MATERIAL NUMBER SET TO 6

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 17 TO 24 IN STEPS OF 1

NUMBER OF AREAS MESHED = 8
MAXIMUM NODE NUMBER = 430
MAXIMUM ELEMENT NUMBER = 384

MATERIAL NUMBER SET TO 4

ELEMENT TYPE SET TO 11

GENERATE NODES AND ELEMENTS
IN AREAS 25 TO 26 IN STEPS OF 1

NUMBER OF AREAS MESHED = 2
MAXIMUM NODE NUMBER = 481
MAXIMUM ELEMENT NUMBER = 448

5) Set 3-D radiation shell elements

ELEMENT TYPE SET TO 46

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 481 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 46 REAL= 1 MATERIAL= 4 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 26 STEP 1

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 73 STEP 1

73 LINES (OF 73 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT FOR ITEM=KP COMPONENT=
IN RANGE 1 TO 49 STEP 1

49 KEYPOINTS (OF 49 DEFINED) SELECTED BY KSEL COMMAND.

Construct geometry for WP TOP end
(K's 50 - 55)

KEYPOINT	50	X,Y,Z=	.784500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	51	X,Y,Z=	.000000E+00	.784500	1.23460	IN CSYS= 0
KEYPOINT	52	X,Y,Z=	.804500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	53	X,Y,Z=	.000000E+00	.804500	1.23460	IN CSYS= 0
KEYPOINT	54	X,Y,Z=	.854500	.000000E+00	1.23460	IN CSYS= 0
KEYPOINT	55	X,Y,Z=	.000000E+00	.854500	1.23460	IN CSYS= 0

(L's 74 - 79)

LINE CONNECTS KEYPOINTS	27	50			
LINE NO.= 74 KP1=	27	TAN1=	-1.0000	.0000	.0000
KP2= 50	TAN2=	1.0000	.0000	.0000	
LINE CONNECTS KEYPOINTS	27	51			
LINE NO.= 75 KP1=	27	TAN1=	.0000	-1.0000	.0000
KP2= 51	TAN2=	.0000	1.0000	.0000	
LINE CONNECTS KEYPOINTS	50	52			
LINE NO.= 76 KP1=	50	TAN1=	-1.0000	.0000	.0000
KP2= 52	TAN2=	1.0000	.0000	.0000	
LINE CONNECTS KEYPOINTS	51	53			
LINE NO.= 77 KP1=	51	TAN1=	.0000	-1.0000	.0000
KP2= 53	TAN2=	.0000	1.0000	.0000	
LINE CONNECTS KEYPOINTS	52	54			
LINE NO.= 78 KP1=	52	TAN1=	-1.0000	.0000	.0000
KP2= 54	TAN2=	1.0000	.0000	.0000	
LINE CONNECTS KEYPOINTS	53	55			
LINE NO.= 79 KP1=	53	TAN1=	.0000	-1.0000	.0000
KP2= 55	TAN2=	.0000	1.0000	.0000	

(L's 80 - 82)

ARC BETWEEN KEYPOINTS 50 AND 51 ORIENTATION KEYPOINT= 27
RADIUS= .78450
LINE NO.= 80 KP1= 50 TAN1= .0000 -1.0000 .0000

```

                KP2=      51 TAN2=  -1.0000   .0000   .0000
ARC BETWEEN KEYPOINTS 52 AND 53 ORIENTATION KEYPOINT= 27
RADIUS= .80450
LINE NO.= 81 KP1=      52 TAN1=   .0000  -1.0000   .0000
                KP2=      53 TAN2=  -1.0000   .0000   .0000

ARC BETWEEN KEYPOINTS 54 AND 55 ORIENTATION KEYPOINT= 27
RADIUS= .85450
LINE NO.= 82 KP1=      54 TAN1=   .0000  -1.0000   .0000
                KP2=      55 TAN2=  -1.0000   .0000   .0000

```

```

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    74 TO      75 STEP      1

```

2 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

```

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE    80 TO      82 STEP      1

```

5 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

```

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 8, SPACING RATIO = 1.000

```

```

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    76 TO      79 STEP      1

```

4 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

```

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 2, SPACING RATIO = 1.000

```

```

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      26 STEP      1

```

26 AREAS (OF 26 DEFINED) SELECTED BY ASEL COMMAND.

```

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      82 STEP      1

```

82 LINES (OF 82 DEFINED) SELECTED BY LSEL COMMAND.

```

ALL SELECT  FOR ITEM=KP COMPONENT=
IN RANGE    1 TO      55 STEP      1

```

55 KEYPOINTS (OF 55 DEFINED) SELECTED BY KSEL COMMAND.
(A's 27 - 29)

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 74 75 80
(TRAVERSED IN SAME DIRECTION AS LINE 74)

```

AREA NUMBER = 27

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 80 76 81 77
(TRAVERSED IN SAME DIRECTION AS LINE 80)

```

AREA NUMBER = 28

```

DEFINE AREA BY LIST OF LINES
LINE LIST = 81 78 82 79
(TRAVERSED IN SAME DIRECTION AS LINE 81)

```

AREA NUMBER = 29

```

*****
Construct geometry for WP Bottom end
(K's 56 - 61 )

```

KEYPOINT	56	X,Y,Z=	.784500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	57	X,Y,Z=	.000000E+00	.784500	-1.51000	IN CSYS= 0
KEYPOINT	58	X,Y,Z=	.804500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	59	X,Y,Z=	.000000E+00	.804500	-1.51000	IN CSYS= 0
KEYPOINT	60	X,Y,Z=	.854500	.000000E+00	-1.51000	IN CSYS= 0
KEYPOINT	61	X,Y,Z=	.000000E+00	.854500	-1.51000	IN CSYS= 0

(L's 83 - 88)

LINE CONNECTS KEYPOINTS	21	56			
LINE NO.= 83	KP1= 21	TAN1=	-1.0000	.0000	.0000
	KP2= 56	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	21	57			
LINE NO.= 84	KP1= 21	TAN1=	.0000	-1.0000	.0000
	KP2= 57	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	56	58			
LINE NO.= 85	KP1= 56	TAN1=	-1.0000	.0000	.0000
	KP2= 58	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	57	59			
LINE NO.= 86	KP1= 57	TAN1=	.0000	-1.0000	.0000
	KP2= 59	TAN2=	.0000	1.0000	.0000

LINE CONNECTS KEYPOINTS	58	60			
LINE NO.= 87	KP1= 58	TAN1=	-1.0000	.0000	.0000
	KP2= 60	TAN2=	1.0000	.0000	.0000

LINE CONNECTS KEYPOINTS	59	61			
LINE NO.= 88	KP1= 59	TAN1=	.0000	-1.0000	.0000
	KP2= 61	TAN2=	.0000	1.0000	.0000

(L's 89 - 91)

ARC BETWEEN KEYPOINTS	56 AND	57	ORIENTATION KEYPOINT=	21
RADIUS=	.78450			
LINE NO.= 89	KP1= 56	TAN1=	.0000	-1.0000
	KP2= 57	TAN2=	-1.0000	.0000

ARC BETWEEN KEYPOINTS	58 AND	59	ORIENTATION KEYPOINT=	21
RADIUS=	.80450			
LINE NO.= 90	KP1= 58	TAN1=	.0000	-1.0000
	KP2= 59	TAN2=	-1.0000	.0000

ARC BETWEEN KEYPOINTS	60 AND	61	ORIENTATION KEYPOINT=	21
RADIUS=	.85450			
LINE NO.= 91	KP1= 60	TAN1=	.0000	-1.0000
	KP2= 61	TAN2=	-1.0000	.0000

SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 83 TO 84 STEP 1

2 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

ALSO SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 89 TO 91 STEP 1

5 LINES (OF 91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
TO NDIV = 8, SPACING RATIO = 1.000

```

SELECT      FOR ITEM=LINE COMPONENT=
IN RANGE    85 TO      88 STEP      1

      4 LINES (OF      91 DEFINED) SELECTED BY LSEL COMMAND.

SET DIVISIONS ON ALL SELECTED UNMESHED LINES
  TO NDIV =   2, SPACING RATIO =  1.000

ALL SELECT  FOR ITEM=AREA COMPONENT=
IN RANGE    1 TO      29 STEP      1

      29 AREAS (OF      29 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT  FOR ITEM=LINE COMPONENT=
IN RANGE    1 TO      91 STEP      1

      91 LINES (OF      91 DEFINED) SELECTED BY LSEL COMMAND.

ALL SELECT  FOR ITEM=KP   COMPONENT=
IN RANGE    1 TO      61 STEP      1

      61 KEYPOINTS (OF      61 DEFINED) SELECTED BY KSEL COMMAND.
      (A's 30 - 32 )

DEFINE AREA BY LIST OF LINES
  LINE LIST =   83  84  89
  (TRAVERSED IN SAME DIRECTION AS LINE   83)

  AREA NUMBER =   30

DEFINE AREA BY LIST OF LINES
  LINE LIST =   89  85  90  86
  (TRAVERSED IN SAME DIRECTION AS LINE   89)

  AREA NUMBER =   31

DEFINE AREA BY LIST OF LINES
  LINE LIST =   90  87  91  88
  (TRAVERSED IN SAME DIRECTION AS LINE   90)

  AREA NUMBER =   32
    Mesh areas
      Top and Bottom WP Ends

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
  PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO   15

ELEMENT TYPE SET TO      1

GENERATE NODES AND ELEMENTS
  IN AREAS      27 TO      32 IN STEPS OF      1

NUMBER OF AREAS MESHD      =      6
MAXIMUM NODE NUMBER      =     675
MAXIMUM ELEMENT NUMBER    =     928
*****
      Extrude 2-D WP Interior into 3-D Space
      (V's 1 - 32)
      Bottom WP Area

DRAG AREAS
  1,      2,      3,      4,
  ALONG LINES
  35,     36,

DRAG AREAS
  5,      6,      7,      8,

```

ALONG LINES
35, 36,

DRAG AREAS
9, 10, 11, 12,
ALONG LINES
35, 36,

DRAG AREAS
13, 14,
ALONG LINES
35, 36,

DRAG AREAS
15, 16,
ALONG LINES
35, 36,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT	20 USED FOR KEYPOINT(S)	88	
KEYPOINT	21 USED FOR KEYPOINT(S)	96	
KEYPOINT	56 USED FOR KEYPOINT(S)	97	110
KEYPOINT	57 USED FOR KEYPOINT(S)	102	114
KEYPOINT	58 USED FOR KEYPOINT(S)	113	122
KEYPOINT	59 USED FOR KEYPOINT(S)	115	126
KEYPOINT	60 USED FOR KEYPOINT(S)	125	
KEYPOINT	61 USED FOR KEYPOINT(S)	127	
KEYPOINT	63 USED FOR KEYPOINT(S)	72	
KEYPOINT	64 USED FOR KEYPOINT(S)	73	
KEYPOINT	65 USED FOR KEYPOINT(S)	76	
KEYPOINT	66 USED FOR KEYPOINT(S)	78	
KEYPOINT	68 USED FOR KEYPOINT(S)	80	
KEYPOINT	69 USED FOR KEYPOINT(S)	81	
KEYPOINT	70 USED FOR KEYPOINT(S)	84	
KEYPOINT	71 USED FOR KEYPOINT(S)	86	
KEYPOINT	74 USED FOR KEYPOINT(S)	93	
KEYPOINT	75 USED FOR KEYPOINT(S)	90	
KEYPOINT	77 USED FOR KEYPOINT(S)	91	
KEYPOINT	79 USED FOR KEYPOINT(S)	95	
KEYPOINT	82 USED FOR KEYPOINT(S)	101	
KEYPOINT	83 USED FOR KEYPOINT(S)	98	
KEYPOINT	85 USED FOR KEYPOINT(S)	99	
KEYPOINT	87 USED FOR KEYPOINT(S)	103	
KEYPOINT	89 USED FOR KEYPOINT(S)	104	
KEYPOINT	92 USED FOR KEYPOINT(S)	105	
KEYPOINT	94 USED FOR KEYPOINT(S)	108	
KEYPOINT	100 USED FOR KEYPOINT(S)	111	
KEYPOINT	106 USED FOR KEYPOINT(S)	117	
KEYPOINT	107 USED FOR KEYPOINT(S)	116	
KEYPOINT	109 USED FOR KEYPOINT(S)	120	
KEYPOINT	112 USED FOR KEYPOINT(S)	123	
LINE	35 USED FOR LINE(S)	159	
LINE	36 USED FOR LINE(S)	179	
LINE	83 USED FOR LINE(S)	178	

*** WARNING *** CP= 8.710 TIME= 03:41:51
Unmeshed line 178 is merged into meshed line 83.
LINE 84 USED FOR LINE(S) 196

*** WARNING *** CP= 8.710 TIME= 03:41:51
Unmeshed line 196 is merged into meshed line 84.
LINE 85 USED FOR LINE(S) 218

*** WARNING *** CP= 8.710 TIME= 03:41:51
Unmeshed line 218 is merged into meshed line 85.
LINE 86 USED FOR LINE(S) 221

*** WARNING *** CP= 8.710 TIME= 03:41:51
Unmeshed line 221 is merged into meshed line 86.
LINE 87 USED FOR LINE(S) 244

*** WARNING *** CP= 8.710 TIME= 03:41:51
Unmeshed line 244 is merged into meshed line 87.
LINE 88 USED FOR LINE(S) 247

*** WARNING *** CP= 8.720 TIME= 03:41:51
Unmeshed line 247 is merged into meshed line 88.

LINE 94 USED FOR LINE(S) 119
LINE 95 USED FOR LINE(S) 118
LINE 96 USED FOR LINE(S) 120
LINE 99 USED FOR LINE(S) 127
LINE 100 USED FOR LINE(S) 126
LINE 102 USED FOR LINE(S) 132
LINE 103 USED FOR LINE(S) 131
LINE 104 USED FOR LINE(S) 136
LINE 107 USED FOR LINE(S) 139
LINE 108 USED FOR LINE(S) 138
LINE 109 USED FOR LINE(S) 140
LINE 112 USED FOR LINE(S) 147
LINE 113 USED FOR LINE(S) 146
LINE 115 USED FOR LINE(S) 152
LINE 116 USED FOR LINE(S) 151
LINE 117 USED FOR LINE(S) 156
LINE 122 USED FOR LINE(S) 169
LINE 123 USED FOR LINE(S) 170
LINE 124 USED FOR LINE(S) 162
LINE 128 USED FOR LINE(S) 163
LINE 129 USED FOR LINE(S) 164
LINE 133 USED FOR LINE(S) 177
LINE 134 USED FOR LINE(S) 174
LINE 137 USED FOR LINE(S) 175
LINE 142 USED FOR LINE(S) 189
LINE 143 USED FOR LINE(S) 190
LINE 144 USED FOR LINE(S) 182
LINE 148 USED FOR LINE(S) 183
LINE 149 USED FOR LINE(S) 184
LINE 153 USED FOR LINE(S) 197
LINE 154 USED FOR LINE(S) 194
LINE 157 USED FOR LINE(S) 195
LINE 160 USED FOR LINE(S) 199
LINE 166 USED FOR LINE(S) 198
LINE 167 USED FOR LINE(S) 200
LINE 171 USED FOR LINE(S) 206
LINE 172 USED FOR LINE(S) 207
LINE 180 USED FOR LINE(S) 212
LINE 186 USED FOR LINE(S) 211
LINE 187 USED FOR LINE(S) 213
LINE 191 USED FOR LINE(S) 219
LINE 192 USED FOR LINE(S) 220
LINE 202 USED FOR LINE(S) 226
LINE 203 USED FOR LINE(S) 224
LINE 204 USED FOR LINE(S) 225
LINE 209 USED FOR LINE(S) 233
LINE 210 USED FOR LINE(S) 232
LINE 215 USED FOR LINE(S) 239
LINE 216 USED FOR LINE(S) 237
LINE 217 USED FOR LINE(S) 238
LINE 222 USED FOR LINE(S) 246
LINE 223 USED FOR LINE(S) 245
AREA 34 USED FOR AREA(S) 57
AREA 38 USED FOR AREA(S) 62
AREA 41 USED FOR AREA(S) 66
AREA 43 USED FOR AREA(S) 70
AREA 46 USED FOR AREA(S) 73
AREA 50 USED FOR AREA(S) 78
AREA 53 USED FOR AREA(S) 82
AREA 55 USED FOR AREA(S) 86
AREA 59 USED FOR AREA(S) 96
AREA 63 USED FOR AREA(S) 91
AREA 67 USED FOR AREA(S) 103

AREA 71 USED FOR AREA(S) 100
 AREA 75 USED FOR AREA(S) 112
 AREA 79 USED FOR AREA(S) 107
 AREA 83 USED FOR AREA(S) 119
 AREA 87 USED FOR AREA(S) 116
 AREA 94 USED FOR AREA(S) 121
 AREA 98 USED FOR AREA(S) 126
 AREA 110 USED FOR AREA(S) 130
 AREA 114 USED FOR AREA(S) 135
 AREA 123 USED FOR AREA(S) 139
 AREA 128 USED FOR AREA(S) 144
 AREA 132 USED FOR AREA(S) 148
 AREA 137 USED FOR AREA(S) 153
 (V's 33 - 80)

Top WP Area

DRAG AREAS
 1, 2, 3, 4,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 5, 6, 7, 8,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 9, 10, 11, 12,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 13, 14,
 ALONG LINES
 40, 41, 42,

DRAG AREAS
 15, 16,
 ALONG LINES
 40, 41, 42,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

KEYPOINT 25 USED FOR KEYPOINT(S) 131
 KEYPOINT 26 USED FOR KEYPOINT(S) 139
 KEYPOINT 27 USED FOR KEYPOINT(S) 147
 KEYPOINT 50 USED FOR KEYPOINT(S) 148 167
 KEYPOINT 51 USED FOR KEYPOINT(S) 153 171
 KEYPOINT 52 USED FOR KEYPOINT(S) 170 185
 KEYPOINT 53 USED FOR KEYPOINT(S) 172 189
 KEYPOINT 54 USED FOR KEYPOINT(S) 188
 KEYPOINT 55 USED FOR KEYPOINT(S) 190
 KEYPOINT 73 USED FOR KEYPOINT(S) 98
 KEYPOINT 76 USED FOR KEYPOINT(S) 99
 KEYPOINT 78 USED FOR KEYPOINT(S) 103
 KEYPOINT 80 USED FOR KEYPOINT(S) 105
 KEYPOINT 84 USED FOR KEYPOINT(S) 110
 KEYPOINT 86 USED FOR KEYPOINT(S) 111
 KEYPOINT 88 USED FOR KEYPOINT(S) 115
 KEYPOINT 90 USED FOR KEYPOINT(S) 117
 KEYPOINT 93 USED FOR KEYPOINT(S) 122
 KEYPOINT 95 USED FOR KEYPOINT(S) 123
 KEYPOINT 96 USED FOR KEYPOINT(S) 127
 KEYPOINT 97 USED FOR KEYPOINT(S) 129
 KEYPOINT 101 USED FOR KEYPOINT(S) 136
 KEYPOINT 102 USED FOR KEYPOINT(S) 133
 KEYPOINT 104 USED FOR KEYPOINT(S) 134
 KEYPOINT 108 USED FOR KEYPOINT(S) 138
 KEYPOINT 113 USED FOR KEYPOINT(S) 144
 KEYPOINT 114 USED FOR KEYPOINT(S) 141
 KEYPOINT 116 USED FOR KEYPOINT(S) 142

KEYPOINT	120 USED FOR KEYPOINT(S)	146
KEYPOINT	125 USED FOR KEYPOINT(S)	152
KEYPOINT	126 USED FOR KEYPOINT(S)	149
KEYPOINT	128 USED FOR KEYPOINT(S)	150
KEYPOINT	130 USED FOR KEYPOINT(S)	154
KEYPOINT	132 USED FOR KEYPOINT(S)	155
KEYPOINT	135 USED FOR KEYPOINT(S)	156
KEYPOINT	137 USED FOR KEYPOINT(S)	159
KEYPOINT	140 USED FOR KEYPOINT(S)	161
KEYPOINT	143 USED FOR KEYPOINT(S)	162
KEYPOINT	145 USED FOR KEYPOINT(S)	165
KEYPOINT	151 USED FOR KEYPOINT(S)	168
KEYPOINT	157 USED FOR KEYPOINT(S)	174
KEYPOINT	158 USED FOR KEYPOINT(S)	173
KEYPOINT	160 USED FOR KEYPOINT(S)	177
KEYPOINT	163 USED FOR KEYPOINT(S)	180
KEYPOINT	164 USED FOR KEYPOINT(S)	179
KEYPOINT	166 USED FOR KEYPOINT(S)	183
KEYPOINT	169 USED FOR KEYPOINT(S)	186
LINE	40 USED FOR LINE(S)	290
LINE	41 USED FOR LINE(S)	310
LINE	42 USED FOR LINE(S)	330
LINE	74 USED FOR LINE(S)	329

*** WARNING *** CP= 12.780 TIME= 03:41:55
 Unmeshed line 329 is merged into meshed line 74.
 LINE 75 USED FOR LINE(S) 347

*** WARNING *** CP= 12.780 TIME= 03:41:55
 Unmeshed line 347 is merged into meshed line 75.
 LINE 76 USED FOR LINE(S) 382

*** WARNING *** CP= 12.780 TIME= 03:41:55
 Unmeshed line 382 is merged into meshed line 76.
 LINE 77 USED FOR LINE(S) 385

*** WARNING *** CP= 12.780 TIME= 03:41:55
 Unmeshed line 385 is merged into meshed line 77.
 LINE 78 USED FOR LINE(S) 421

*** WARNING *** CP= 12.790 TIME= 03:41:55
 Unmeshed line 421 is merged into meshed line 78.
 LINE 79 USED FOR LINE(S) 424

*** WARNING *** CP= 12.790 TIME= 03:41:55
 Unmeshed line 424 is merged into meshed line 79.

LINE	120 USED FOR LINE(S)	207
LINE	126 USED FOR LINE(S)	206
LINE	127 USED FOR LINE(S)	211
LINE	136 USED FOR LINE(S)	224
LINE	138 USED FOR LINE(S)	221
LINE	140 USED FOR LINE(S)	237
LINE	146 USED FOR LINE(S)	233
LINE	147 USED FOR LINE(S)	245
LINE	156 USED FOR LINE(S)	250
LINE	159 USED FOR LINE(S)	247
LINE	162 USED FOR LINE(S)	251
LINE	169 USED FOR LINE(S)	258
LINE	170 USED FOR LINE(S)	257
LINE	175 USED FOR LINE(S)	263
LINE	177 USED FOR LINE(S)	262
LINE	178 USED FOR LINE(S)	267
LINE	183 USED FOR LINE(S)	270
LINE	184 USED FOR LINE(S)	269
LINE	189 USED FOR LINE(S)	271
LINE	195 USED FOR LINE(S)	278
LINE	196 USED FOR LINE(S)	277
LINE	198 USED FOR LINE(S)	283
LINE	199 USED FOR LINE(S)	282
LINE	200 USED FOR LINE(S)	287

LINE	213	USED FOR LINE(S)	300
LINE	218	USED FOR LINE(S)	301
LINE	219	USED FOR LINE(S)	293
LINE	225	USED FOR LINE(S)	294
LINE	226	USED FOR LINE(S)	295
LINE	238	USED FOR LINE(S)	308
LINE	239	USED FOR LINE(S)	305
LINE	246	USED FOR LINE(S)	306
LINE	253	USED FOR LINE(S)	320
LINE	254	USED FOR LINE(S)	321
LINE	255	USED FOR LINE(S)	313
LINE	259	USED FOR LINE(S)	314
LINE	260	USED FOR LINE(S)	315
LINE	264	USED FOR LINE(S)	328
LINE	265	USED FOR LINE(S)	325
LINE	268	USED FOR LINE(S)	326
LINE	273	USED FOR LINE(S)	340
LINE	274	USED FOR LINE(S)	341
LINE	275	USED FOR LINE(S)	333
LINE	279	USED FOR LINE(S)	334
LINE	280	USED FOR LINE(S)	335
LINE	284	USED FOR LINE(S)	348
LINE	285	USED FOR LINE(S)	345
LINE	288	USED FOR LINE(S)	346
LINE	291	USED FOR LINE(S)	350
LINE	297	USED FOR LINE(S)	349
LINE	298	USED FOR LINE(S)	351
LINE	302	USED FOR LINE(S)	357
LINE	303	USED FOR LINE(S)	358
LINE	311	USED FOR LINE(S)	363
LINE	317	USED FOR LINE(S)	362
LINE	318	USED FOR LINE(S)	364
LINE	322	USED FOR LINE(S)	370
LINE	323	USED FOR LINE(S)	371
LINE	331	USED FOR LINE(S)	376
LINE	337	USED FOR LINE(S)	375
LINE	338	USED FOR LINE(S)	377
LINE	342	USED FOR LINE(S)	383
LINE	343	USED FOR LINE(S)	384
LINE	353	USED FOR LINE(S)	390
LINE	354	USED FOR LINE(S)	388
LINE	355	USED FOR LINE(S)	389
LINE	360	USED FOR LINE(S)	397
LINE	361	USED FOR LINE(S)	396
LINE	366	USED FOR LINE(S)	403
LINE	367	USED FOR LINE(S)	401
LINE	368	USED FOR LINE(S)	402
LINE	373	USED FOR LINE(S)	410
LINE	374	USED FOR LINE(S)	409
LINE	379	USED FOR LINE(S)	416
LINE	380	USED FOR LINE(S)	414
LINE	381	USED FOR LINE(S)	415
LINE	386	USED FOR LINE(S)	423
LINE	387	USED FOR LINE(S)	422
AREA	62	USED FOR AREA(S)	169
AREA	78	USED FOR AREA(S)	174
AREA	91	USED FOR AREA(S)	178
AREA	100	USED FOR AREA(S)	182
AREA	112	USED FOR AREA(S)	185
AREA	126	USED FOR AREA(S)	190
AREA	139	USED FOR AREA(S)	194
AREA	148	USED FOR AREA(S)	198
AREA	158	USED FOR AREA(S)	201
AREA	162	USED FOR AREA(S)	206
AREA	165	USED FOR AREA(S)	210
AREA	167	USED FOR AREA(S)	214
AREA	171	USED FOR AREA(S)	224
AREA	175	USED FOR AREA(S)	219
AREA	179	USED FOR AREA(S)	231
AREA	183	USED FOR AREA(S)	228

AREA 187 USED FOR AREA(S) 240
 AREA 191 USED FOR AREA(S) 235
 AREA 195 USED FOR AREA(S) 247
 AREA 199 USED FOR AREA(S) 244
 AREA 203 USED FOR AREA(S) 256
 AREA 207 USED FOR AREA(S) 251
 AREA 211 USED FOR AREA(S) 263
 AREA 215 USED FOR AREA(S) 260
 AREA 222 USED FOR AREA(S) 265
 AREA 226 USED FOR AREA(S) 270
 AREA 238 USED FOR AREA(S) 274
 AREA 242 USED FOR AREA(S) 279
 AREA 254 USED FOR AREA(S) 283
 AREA 258 USED FOR AREA(S) 288
 AREA 267 USED FOR AREA(S) 292
 AREA 272 USED FOR AREA(S) 297
 AREA 276 USED FOR AREA(S) 301
 AREA 281 USED FOR AREA(S) 306
 AREA 285 USED FOR AREA(S) 310
 AREA 290 USED FOR AREA(S) 315
 Extrude 2-D WP Ends into 3-D Space
 (V's 81 - 89)
 Bottom WP Area

DRAG AREAS
 30, 31, 32,
 ALONG LINES
 37, 38, 39,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 22 USED FOR KEYPOINT(S) 98
 KEYPOINT 23 USED FOR KEYPOINT(S) 117
 KEYPOINT 24 USED FOR KEYPOINT(S) 134
 LINE 37 USED FOR LINE(S) 207
 LINE 38 USED FOR LINE(S) 270
 LINE 39 USED FOR LINE(S) 310
 (V's 90 - 101)
 Top WP Area

DRAG AREAS
 27, 28, 29,
 ALONG LINES
 43, 44, 45, 46,

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 28 USED FOR KEYPOINT(S) 98
 KEYPOINT 29 USED FOR KEYPOINT(S) 150
 KEYPOINT 30 USED FOR KEYPOINT(S) 161
 KEYPOINT 31 USED FOR KEYPOINT(S) 172
 LINE 43 USED FOR LINE(S) 270
 LINE 44 USED FOR LINE(S) 371
 LINE 45 USED FOR LINE(S) 409
 LINE 46 USED FOR LINE(S) 434

 Mesh Volumes - which are solid volumes - leave gaps to last
 Glass First

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
 PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 5

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
 IN VOLUMES 1 TO 4 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
 MAXIMUM NODE NUMBER = 846
 MAXIMUM ELEMENT NUMBER = 1072

GENERATE NODES AND ELEMENTS
IN VOLUMES 33 TO 36 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 960
MAXIMUM ELEMENT NUMBER = 1168
SS in Pour Can.

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 1

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 5 TO 8 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1017
MAXIMUM ELEMENT NUMBER = 1216

GENERATE NODES AND ELEMENTS
IN VOLUMES 9 TO 16 IN STEPS OF 1

*** WARNING *** CP= 17.510 TIME= 03:42:00
Meshing of area 58 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.510 TIME= 03:42:00
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.550 TIME= 03:42:00
Meshing of area 60 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.550 TIME= 03:42:00
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.650 TIME= 03:42:00
Meshing of area 64 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.650 TIME= 03:42:00
Worst aspect ratio is 52.4561404 : 1.

*** WARNING *** CP= 17.750 TIME= 03:42:00
Meshing of area 68 produced 3 poorly shaped faces.

*** NOTE *** CP= 17.750 TIME= 03:42:00
Worst aspect ratio is 52.4561404 : 1.

NUMBER OF VOLUMES MESHED = 8
MAXIMUM NODE NUMBER = 1081
MAXIMUM ELEMENT NUMBER = 1280

GENERATE NODES AND ELEMENTS
IN VOLUMES 41 TO 44 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1195
MAXIMUM ELEMENT NUMBER = 1328

GENERATE NODES AND ELEMENTS
IN VOLUMES 45 TO 56 IN STEPS OF 1

*** WARNING *** CP= 19.250 TIME= 03:42:02
Meshing of area 170 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.250 TIME= 03:42:02
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.290 TIME= 03:42:02
Meshing of area 172 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.290 TIME= 03:42:02
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.370 TIME= 03:42:02
Meshing of area 176 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.370 TIME= 03:42:02
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.450 TIME= 03:42:02
Meshing of area 180 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.450 TIME= 03:42:02
Worst aspect ratio is 34.7315789 : 1.

*** WARNING *** CP= 19.600 TIME= 03:42:02
Meshing of area 186 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.600 TIME= 03:42:02
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.640 TIME= 03:42:02
Meshing of area 188 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.640 TIME= 03:42:02
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.740 TIME= 03:42:02
Meshing of area 192 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.740 TIME= 03:42:02
Worst aspect ratio is 29.1947368 : 1.

*** WARNING *** CP= 19.840 TIME= 03:42:02
Meshing of area 196 produced 2 poorly shaped faces.

*** NOTE *** CP= 19.840 TIME= 03:42:02
Worst aspect ratio is 29.1947368 : 1.

NUMBER OF VOLUMES MESHED = 12
MAXIMUM NODE NUMBER = 1291
MAXIMUM ELEMENT NUMBER = 1408
In. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 2

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 25 TO 28 IN STEPS OF 1

*** WARNING *** CP= 20.470 TIME= 03:42:03
Meshing of area 122 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.470 TIME= 03:42:03
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.520 TIME= 03:42:03
Meshing of area 124 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.520 TIME= 03:42:03
Worst aspect ratio is 49.8333333 : 1.

*** WARNING *** CP= 20.650 TIME= 03:42:03

Meshing of area 127 produced 6 poorly shaped faces.

*** NOTE *** CP= 20.650 TIME= 03:42:03
Worst aspect ratio is 49.8333333 : 1.

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 1393
MAXIMUM ELEMENT NUMBER = 1472

GENERATE NODES AND ELEMENTS
IN VOLUMES 69 TO 74 IN STEPS OF 1

*** WARNING *** CP= 21.300 TIME= 03:42:04
Meshing of area 266 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.300 TIME= 03:42:04
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.340 TIME= 03:42:04
Meshing of area 268 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.340 TIME= 03:42:04
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.450 TIME= 03:42:04
Meshing of area 271 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.450 TIME= 03:42:04
Worst aspect ratio is 32.995 : 1.

*** WARNING *** CP= 21.590 TIME= 03:42:04
Meshing of area 275 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.590 TIME= 03:42:04
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.630 TIME= 03:42:04
Meshing of area 277 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.630 TIME= 03:42:04
Worst aspect ratio is 27.735 : 1.

*** WARNING *** CP= 21.740 TIME= 03:42:04
Meshing of area 280 produced 4 poorly shaped faces.

*** NOTE *** CP= 21.740 TIME= 03:42:04
Worst aspect ratio is 27.735 : 1.

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 1522
MAXIMUM ELEMENT NUMBER = 1552

GENERATE NODES AND ELEMENTS
IN VOLUMES 82 TO 82 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 1576
MAXIMUM ELEMENT NUMBER = 1584

GENERATE NODES AND ELEMENTS
IN VOLUMES 84 TO 85 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 1786
MAXIMUM ELEMENT NUMBER = 1712

GENERATE NODES AND ELEMENTS
IN VOLUMES 91 TO 91 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1

MAXIMUM NODE NUMBER = 1867
MAXIMUM ELEMENT NUMBER = 1760

GENERATE NODES AND ELEMENTS
IN VOLUMES 93 TO 94 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2077
MAXIMUM ELEMENT NUMBER = 1888
Out. Bar. Material for WP

FOR ELEMENT TYPE(S) ALLOWING MULTIPLE SHAPES:
PRODUCE ALL QUADRILATERAL OR BRICK ELEMENTS.

MATERIAL NUMBER SET TO 15

ELEMENT TYPE SET TO 2

GENERATE NODES AND ELEMENTS
IN VOLUMES 29 TO 32 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2145
MAXIMUM ELEMENT NUMBER = 1952

GENERATE NODES AND ELEMENTS
IN VOLUMES 75 TO 80 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 6
MAXIMUM NODE NUMBER = 2231
MAXIMUM ELEMENT NUMBER = 2032

GENERATE NODES AND ELEMENTS
IN VOLUMES 83 TO 83 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 1
MAXIMUM NODE NUMBER = 2267
MAXIMUM ELEMENT NUMBER = 2064

GENERATE NODES AND ELEMENTS
IN VOLUMES 86 TO 89 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2497
MAXIMUM ELEMENT NUMBER = 2256

GENERATE NODES AND ELEMENTS
IN VOLUMES 92 TO 95 IN STEPS OF 3

NUMBER OF VOLUMES MESHED = 2
MAXIMUM NODE NUMBER = 2587
MAXIMUM ELEMENT NUMBER = 2336

GENERATE NODES AND ELEMENTS
IN VOLUMES 98 TO 101 IN STEPS OF 1

NUMBER OF VOLUMES MESHED = 4
MAXIMUM NODE NUMBER = 2905
MAXIMUM ELEMENT NUMBER = 2528

DONT MESH OR ASSIGN MAT. ASSUME VOID SPACES
AND NO RADIATION TRANSFER IN THESE SPACES
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1

He/Air in WP I/O Bar. Gap - NO RADIATION

ESHAPE,2,
MAT, 7,
TYPE,2,

VMESH, 96, 97,1

Clear 2-D mesh

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 1 TO 1 STEP 1

22 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

CLEAR NODES AND ELEMENTS FROM ALL SELECTED AREAS

*** NOTE *** CP= 28.520 TIME= 03:42:11
Nodes cannot be cleared from area 1 because volume 1 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.530 TIME= 03:42:11
Nodes cannot be cleared from area 2 because volume 2 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.530 TIME= 03:42:11
Nodes cannot be cleared from area 3 because volume 3 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.540 TIME= 03:42:11
Nodes cannot be cleared from area 4 because volume 4 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.540 TIME= 03:42:11
Nodes cannot be cleared from area 5 because volume 9 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.550 TIME= 03:42:11
Nodes cannot be cleared from area 6 because volume 10 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.550 TIME= 03:42:11
Nodes cannot be cleared from area 7 because volume 11 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.550 TIME= 03:42:11
Nodes cannot be cleared from area 8 because volume 12 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.570 TIME= 03:42:11
Nodes cannot be cleared from area 13 because volume 25 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.580 TIME= 03:42:11
Nodes cannot be cleared from area 14 because volume 26 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.580 TIME= 03:42:11
Nodes cannot be cleared from area 15 because volume 29 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.580 TIME= 03:42:11
Nodes cannot be cleared from area 16 because volume 30 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.610 TIME= 03:42:11
Nodes cannot be cleared from area 28 because volume 91 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.620 TIME= 03:42:11
Nodes cannot be cleared from area 29 because volume 92 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.640 TIME= 03:42:11
Nodes cannot be cleared from area 31 because volume 82 is meshed. Only elements are deleted.

*** NOTE *** CP= 28.650 TIME= 03:42:11
Nodes cannot be cleared from area 32 because volume 83 is meshed. Only elements are deleted.

CLEARED 22 AREAS, 10 LINES, 3 KEYPOINTS

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 366 STEP 1

366 AREAS (OF 366 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 2528 STEP 1

2240 ELEMENTS (OF 2240 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 2905 STEP 1

2778 NODES (OF 2778 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 101 STEP 1

101 VOLUMES (OF 101 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 448 STEP 1

444 LINES (OF 444 DEFINED) SELECTED BY LSEL COMMAND.

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE 498	USED FOR NODES	1516
NODE 595	USED FOR NODES	1387
NODE 560	USED FOR NODES	1522
NODE 657	USED FOR NODES	1393
NODE 552	USED FOR NODES	1517
NODE 649	USED FOR NODES	1388
NODE 578	USED FOR NODES	2231
NODE 675	USED FOR NODES	2145
NODE 667	USED FOR NODES	2140
NODE 570	USED FOR NODES	2226
NODE 497	USED FOR NODES	1515
NODE 594	USED FOR NODES	1386
NODE 559	USED FOR NODES	1521
NODE 656	USED FOR NODES	1392
NODE 551	USED FOR NODES	1518
NODE 648	USED FOR NODES	1389
NODE 577	USED FOR NODES	2230
NODE 674	USED FOR NODES	2144
NODE 569	USED FOR NODES	2227
NODE 666	USED FOR NODES	2141
NODE 496	USED FOR NODES	1514
NODE 593	USED FOR NODES	1385
NODE 558	USED FOR NODES	1520
NODE 655	USED FOR NODES	1391
NODE 550	USED FOR NODES	1519
NODE 647	USED FOR NODES	1390
NODE 576	USED FOR NODES	2229
NODE 673	USED FOR NODES	2143
NODE 568	USED FOR NODES	2228
NODE 665	USED FOR NODES	2142
NODE 495	USED FOR NODES	1502
NODE 592	USED FOR NODES	1373
NODE 557	USED FOR NODES	1507

NODE 654 USED FOR NODES 1378
 NODE 549 USED FOR NODES 1506
 NODE 646 USED FOR NODES 1377
 NODE 575 USED FOR NODES 2219
 NODE 672 USED FOR NODES 2133
 NODE 567 USED FOR NODES 2218
 NODE 664 USED FOR NODES 2132
 NODE 494 USED FOR NODES 1505
 NODE 591 USED FOR NODES 1376
 NODE 556 USED FOR NODES 1513
 NODE 653 USED FOR NODES 1384
 NODE 548 USED FOR NODES 1508
 NODE 645 USED FOR NODES 1379
 NODE 574 USED FOR NODES 2225
 NODE 671 USED FOR NODES 2139
 NODE 663 USED FOR NODES 2134
 NODE 566 USED FOR NODES 2220
 NODE 493 USED FOR NODES 1504
 NODE 590 USED FOR NODES 1375
 NODE 555 USED FOR NODES 1512
 NODE 652 USED FOR NODES 1383
 NODE 547 USED FOR NODES 1509
 NODE 644 USED FOR NODES 1380
 NODE 573 USED FOR NODES 2224
 NODE 670 USED FOR NODES 2138
 NODE 492 USED FOR NODES 1503
 NODE 589 USED FOR NODES 1374
 NODE 554 USED FOR NODES 1511
 NODE 651 USED FOR NODES 1382
 NODE 546 USED FOR NODES 1510
 NODE 643 USED FOR NODES 1381
 NODE 565 USED FOR NODES 2221
 NODE 662 USED FOR NODES 2135
 NODE 572 USED FOR NODES 2223
 NODE 669 USED FOR NODES 2137
 NODE 564 USED FOR NODES 2222
 NODE 661 USED FOR NODES 2136

*** WARNING *** CP= 30.090 TIME= 03:42:12
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03

 Rotate this set into the other quadrants about the Z axis
 (V's 102 - 404)

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)
 (V's 102 - 202)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 90.0 .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 5273
 MAXIMUM ELEMENT NUMBER = 4128
 (V's 203 - 303)

GENERATE 2 TOTAL SETS OF VOLUMES
 SET IS FROM 1 TO 101 IN STEPS OF 1
 DX,DY,DZ= .000E+00 180. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 7641
 MAXIMUM ELEMENT NUMBER = 5728
 (V's 304 - 404)

GENERATE 2 TOTAL SETS OF VOLUMES

SET IS FROM 1 TO 101 IN STEPS OF 1
DX,DY,DZ= .000E+00 270. .000E+00 CSYS= 11

MAXIMUM NODE NUMBER = 10009
MAXIMUM ELEMENT NUMBER = 7328

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

MERGE IDENTICAL ELEMENTS

ZERO ELEMENTS WERE MERGED

MERGE COINCIDENT NODES WITHIN TOLERANCE OF .10000E-03

NODE	3488	USED FOR NODES	5848
NODE	4099	USED FOR NODES	6471
NODE	4100	USED FOR NODES	6472
NODE	4539	USED FOR NODES	6911
NODE	4540	USED FOR NODES	6912
NODE	4037	USED FOR NODES	6397
NODE	5238	USED FOR NODES	7610
NODE	5239	USED FOR NODES	7611
NODE	4011	USED FOR NODES	6363
NODE	4012	USED FOR NODES	6364
NODE	3446	USED FOR NODES	5782
NODE	4920	USED FOR NODES	7292
NODE	4656	USED FOR NODES	7030
NODE	4657	USED FOR NODES	7031
NODE	4974	USED FOR NODES	7346
NODE	4345	USED FOR NODES	6717
NODE	4346	USED FOR NODES	6718
NODE	3448	USED FOR NODES	5786
NODE	3449	USED FOR NODES	5787
NODE	3450	USED FOR NODES	5788
NODE	4658	USED FOR NODES	7032
NODE	3975	USED FOR NODES	6327
NODE	3976	USED FOR NODES	6328
NODE	4921	USED FOR NODES	7293
NODE	4975	USED FOR NODES	7347
NODE	4660	USED FOR NODES	7055
NODE	3453	USED FOR NODES	5801
NODE	3452	USED FOR NODES	5800
NODE	4102	USED FOR NODES	6488
NODE	4014	USED FOR NODES	6372
NODE	4923	USED FOR NODES	7309
NODE	3978	USED FOR NODES	6336
NODE	4348	USED FOR NODES	6734
NODE	4541	USED FOR NODES	6927
NODE	4013	USED FOR NODES	6371
NODE	5240	USED FOR NODES	7626
NODE	3447	USED FOR NODES	5798
NODE	4038	USED FOR NODES	6401
NODE	4976	USED FOR NODES	7362
NODE	4659	USED FOR NODES	7054
NODE	4347	USED FOR NODES	6733
NODE	3489	USED FOR NODES	5852
NODE	3451	USED FOR NODES	5799
NODE	3977	USED FOR NODES	6335
NODE	4977	USED FOR NODES	7363
NODE	4101	USED FOR NODES	6487
NODE	4922	USED FOR NODES	7308
NODE	4661	USED FOR NODES	7056
NODE	5241	USED FOR NODES	7627
NODE	4542	USED FOR NODES	6928
NODE	3350	USED FOR NODES	5672
NODE	4603	USED FOR NODES	6977
NODE	5195	USED FOR NODES	7567
NODE	3398	USED FOR NODES	5754
NODE	4064	USED FOR NODES	6436
NODE	4884	USED FOR NODES	7256
NODE	3947	USED FOR NODES	6303

NODE	4885	USED FOR NODES	7257
NODE	3347	USED FOR NODES	5667
NODE	3858	USED FOR NODES	6202
NODE	4503	USED FOR NODES	6875
NODE	4504	USED FOR NODES	6876
NODE	4063	USED FOR NODES	6435
NODE	4958	USED FOR NODES	7324
NODE	4966	USED FOR NODES	7325
NODE	3859	USED FOR NODES	6203
NODE	4602	USED FOR NODES	6976
NODE	4309	USED FOR NODES	6681
NODE	4310	USED FOR NODES	6682
NODE	3349	USED FOR NODES	5671
NODE	5194	USED FOR NODES	7566
NODE	3912	USED FOR NODES	6256
NODE	3913	USED FOR NODES	6257
NODE	3351	USED FOR NODES	5673
NODE	4604	USED FOR NODES	6978
NODE	3354	USED FOR NODES	5686
NODE	4606	USED FOR NODES	7001
NODE	3861	USED FOR NODES	6211
NODE	4312	USED FOR NODES	6698
NODE	4887	USED FOR NODES	7273
NODE	4066	USED FOR NODES	6452
NODE	3353	USED FOR NODES	5685
NODE	5197	USED FOR NODES	7584
NODE	5196	USED FOR NODES	7583
NODE	4505	USED FOR NODES	6891
NODE	3860	USED FOR NODES	6210
NODE	3948	USED FOR NODES	6307
NODE	4886	USED FOR NODES	7272
NODE	3399	USED FOR NODES	5758
NODE	4506	USED FOR NODES	6892
NODE	3348	USED FOR NODES	5683
NODE	4311	USED FOR NODES	6697
NODE	4605	USED FOR NODES	7000
NODE	4065	USED FOR NODES	6451
NODE	4607	USED FOR NODES	7002
NODE	3914	USED FOR NODES	6264
NODE	3352	USED FOR NODES	5684
NODE	5193	USED FOR NODES	7582
NODE	3915	USED FOR NODES	6265
NODE	4045	USED FOR NODES	6415
NODE	3943	USED FOR NODES	6297
NODE	4736	USED FOR NODES	7086
NODE	4737	USED FOR NODES	7087
NODE	4400	USED FOR NODES	6750
NODE	4575	USED FOR NODES	6946
NODE	4576	USED FOR NODES	6954
NODE	4577	USED FOR NODES	6955
NODE	4161	USED FOR NODES	6511
NODE	4399	USED FOR NODES	6749
NODE	4046	USED FOR NODES	6423
NODE	3331	USED FOR NODES	5639
NODE	3394	USED FOR NODES	5748
NODE	4162	USED FOR NODES	6512
NODE	3850	USED FOR NODES	6190
NODE	3335	USED FOR NODES	5647
NODE	3851	USED FOR NODES	6194
NODE	3336	USED FOR NODES	5651
NODE	5037	USED FOR NODES	7379
NODE	3337	USED FOR NODES	5652
NODE	3904	USED FOR NODES	6244
NODE	5045	USED FOR NODES	7387
NODE	5046	USED FOR NODES	7388
NODE	3905	USED FOR NODES	6248
NODE	5075	USED FOR NODES	7404
NODE	4752	USED FOR NODES	7085
NODE	4759	USED FOR NODES	7095
NODE	4184	USED FOR NODES	6520

NODE	4415	USED FOR NODES	6758
NODE	5068	USED FOR NODES	7396
NODE	4177	USED FOR NODES	6510
NODE	4422	USED FOR NODES	6766
NODE	5061	USED FOR NODES	7386
NODE	4766	USED FOR NODES	7103
NODE	4191	USED FOR NODES	6528
NODE	5069	USED FOR NODES	7395
NODE	4416	USED FOR NODES	6757
NODE	4753	USED FOR NODES	7084
NODE	4185	USED FOR NODES	6519
NODE	4178	USED FOR NODES	6509
NODE	4760	USED FOR NODES	7094
NODE	5062	USED FOR NODES	7385
NODE	4767	USED FOR NODES	7102
NODE	5076	USED FOR NODES	7403
NODE	4423	USED FOR NODES	6765
NODE	4192	USED FOR NODES	6527
NODE	4193	USED FOR NODES	6526
NODE	4768	USED FOR NODES	7101
NODE	4761	USED FOR NODES	7093
NODE	5070	USED FOR NODES	7394
NODE	4417	USED FOR NODES	6756
NODE	4186	USED FOR NODES	6518
NODE	5063	USED FOR NODES	7384
NODE	4179	USED FOR NODES	6508
NODE	4754	USED FOR NODES	7083
NODE	5077	USED FOR NODES	7402
NODE	4424	USED FOR NODES	6764
NODE	5078	USED FOR NODES	7401
NODE	4755	USED FOR NODES	7082
NODE	4180	USED FOR NODES	6507
NODE	4187	USED FOR NODES	6517
NODE	4194	USED FOR NODES	6525
NODE	4418	USED FOR NODES	6755
NODE	4762	USED FOR NODES	7092
NODE	5064	USED FOR NODES	7383
NODE	4425	USED FOR NODES	6763
NODE	4769	USED FOR NODES	7100
NODE	5071	USED FOR NODES	7393
NODE	4756	USED FOR NODES	7081
NODE	4763	USED FOR NODES	7091
NODE	5065	USED FOR NODES	7382
NODE	5072	USED FOR NODES	7392
NODE	4181	USED FOR NODES	6506
NODE	4188	USED FOR NODES	6516
NODE	4419	USED FOR NODES	6754
NODE	5079	USED FOR NODES	7400
NODE	4770	USED FOR NODES	7099
NODE	4195	USED FOR NODES	6524
NODE	4426	USED FOR NODES	6762
NODE	4189	USED FOR NODES	6515
NODE	4764	USED FOR NODES	7090
NODE	4757	USED FOR NODES	7080
NODE	4420	USED FOR NODES	6753
NODE	4182	USED FOR NODES	6505
NODE	5073	USED FOR NODES	7391
NODE	5066	USED FOR NODES	7381
NODE	5080	USED FOR NODES	7399
NODE	4196	USED FOR NODES	6523
NODE	4771	USED FOR NODES	7098
NODE	4427	USED FOR NODES	6761
NODE	4421	USED FOR NODES	6752
NODE	4758	USED FOR NODES	7079
NODE	4190	USED FOR NODES	6514
NODE	5074	USED FOR NODES	7390
NODE	5067	USED FOR NODES	7380
NODE	4197	USED FOR NODES	6522
NODE	4765	USED FOR NODES	7089
NODE	5081	USED FOR NODES	7398

NODE	4183	USED FOR NODES	6504
NODE	4772	USED FOR NODES	7097
NODE	4428	USED FOR NODES	6760
NODE	6379	USED FOR NODES	8731
NODE	7342	USED FOR NODES	9714
NODE	7343	USED FOR NODES	9715
NODE	6468	USED FOR NODES	8840
NODE	6908	USED FOR NODES	9280
NODE	6343	USED FOR NODES	8695
NODE	6344	USED FOR NODES	8696
NODE	6380	USED FOR NODES	8732
NODE	5817	USED FOR NODES	8155
NODE	6467	USED FOR NODES	8839
NODE	5814	USED FOR NODES	8150
NODE	5818	USED FOR NODES	8156
NODE	5816	USED FOR NODES	8154
NODE	6713	USED FOR NODES	9085
NODE	6714	USED FOR NODES	9086
NODE	7024	USED FOR NODES	9398
NODE	5856	USED FOR NODES	8216
NODE	7606	USED FOR NODES	9978
NODE	7607	USED FOR NODES	9979
NODE	6907	USED FOR NODES	9279
NODE	6405	USED FOR NODES	8765
NODE	7025	USED FOR NODES	9399
NODE	7026	USED FOR NODES	9400
NODE	7288	USED FOR NODES	9660
NODE	7289	USED FOR NODES	9661
NODE	5821	USED FOR NODES	8169
NODE	5820	USED FOR NODES	8168
NODE	7028	USED FOR NODES	9423
NODE	6470	USED FOR NODES	8856
NODE	6346	USED FOR NODES	8704
NODE	6382	USED FOR NODES	8740
NODE	6716	USED FOR NODES	9102
NODE	7291	USED FOR NODES	9677
NODE	7608	USED FOR NODES	9994
NODE	6715	USED FOR NODES	9101
NODE	6909	USED FOR NODES	9295
NODE	5819	USED FOR NODES	8167
NODE	7290	USED FOR NODES	9676
NODE	5857	USED FOR NODES	8220
NODE	6469	USED FOR NODES	8855
NODE	6381	USED FOR NODES	8739
NODE	6406	USED FOR NODES	8769
NODE	7344	USED FOR NODES	9730
NODE	6345	USED FOR NODES	8703
NODE	7027	USED FOR NODES	9422
NODE	5815	USED FOR NODES	8166
NODE	7345	USED FOR NODES	9731
NODE	7029	USED FOR NODES	9424
NODE	7609	USED FOR NODES	9995
NODE	6910	USED FOR NODES	9296
NODE	5718	USED FOR NODES	8040
NODE	6971	USED FOR NODES	9345
NODE	6677	USED FOR NODES	9049
NODE	7252	USED FOR NODES	9624
NODE	5719	USED FOR NODES	8041
NODE	6678	USED FOR NODES	9050
NODE	6970	USED FOR NODES	9344
NODE	7334	USED FOR NODES	9693
NODE	6281	USED FOR NODES	8625
NODE	6972	USED FOR NODES	9346
NODE	7253	USED FOR NODES	9625
NODE	7562	USED FOR NODES	9934
NODE	5715	USED FOR NODES	8035
NODE	5766	USED FOR NODES	8122
NODE	6315	USED FOR NODES	8671
NODE	6432	USED FOR NODES	8804
NODE	6226	USED FOR NODES	8570

NODE 6227	USED FOR NODES	8571
NODE 6871	USED FOR NODES	9243
NODE 7326	USED FOR NODES	9692
NODE 6872	USED FOR NODES	9244
NODE 7563	USED FOR NODES	9935
NODE 6431	USED FOR NODES	8803
NODE 5717	USED FOR NODES	8039
NODE 6280	USED FOR NODES	8624
NODE 6974	USED FOR NODES	9369
NODE 5722	USED FOR NODES	8054
NODE 5720	USED FOR NODES	8052
NODE 7565	USED FOR NODES	9952
NODE 6679	USED FOR NODES	9065
NODE 6282	USED FOR NODES	8632
NODE 7564	USED FOR NODES	9951
NODE 7254	USED FOR NODES	9640
NODE 6873	USED FOR NODES	9259
NODE 6973	USED FOR NODES	9368
NODE 6433	USED FOR NODES	8819
NODE 6316	USED FOR NODES	8675
NODE 6434	USED FOR NODES	8820
NODE 6229	USED FOR NODES	8579
NODE 5767	USED FOR NODES	8126
NODE 6228	USED FOR NODES	8578
NODE 6874	USED FOR NODES	9260
NODE 7561	USED FOR NODES	9950
NODE 5721	USED FOR NODES	8053
NODE 6975	USED FOR NODES	9370
NODE 7255	USED FOR NODES	9641
NODE 5716	USED FOR NODES	8051
NODE 6680	USED FOR NODES	9066
NODE 6283	USED FOR NODES	8633
NODE 5762	USED FOR NODES	8116
NODE 6413	USED FOR NODES	8783
NODE 6530	USED FOR NODES	8880
NODE 6944	USED FOR NODES	9322
NODE 7104	USED FOR NODES	9454
NODE 5704	USED FOR NODES	8019
NODE 6945	USED FOR NODES	9323
NODE 7105	USED FOR NODES	9455
NODE 6272	USED FOR NODES	8612
NODE 5699	USED FOR NODES	8007
NODE 5703	USED FOR NODES	8015
NODE 6529	USED FOR NODES	8879
NODE 6414	USED FOR NODES	8791
NODE 7405	USED FOR NODES	9747
NODE 7414	USED FOR NODES	9756
NODE 6311	USED FOR NODES	8665
NODE 6767	USED FOR NODES	9117
NODE 6768	USED FOR NODES	9118
NODE 5705	USED FOR NODES	8020
NODE 7413	USED FOR NODES	9755
NODE 6943	USED FOR NODES	9314
NODE 6273	USED FOR NODES	8616
NODE 6218	USED FOR NODES	8558
NODE 6219	USED FOR NODES	8562
NODE 6783	USED FOR NODES	9126
NODE 6545	USED FOR NODES	8878
NODE 7443	USED FOR NODES	9772
NODE 7429	USED FOR NODES	9754
NODE 6552	USED FOR NODES	8888
NODE 7127	USED FOR NODES	9463
NODE 6790	USED FOR NODES	9134
NODE 7120	USED FOR NODES	9453
NODE 7436	USED FOR NODES	9764
NODE 7134	USED FOR NODES	9471
NODE 6559	USED FOR NODES	8896
NODE 7430	USED FOR NODES	9753
NODE 7121	USED FOR NODES	9452
NODE 7128	USED FOR NODES	9462

NODE	6546	USED FOR NODES	8877
NODE	6553	USED FOR NODES	8887
NODE	7437	USED FOR NODES	9763
NODE	6784	USED FOR NODES	9125
NODE	7444	USED FOR NODES	9771
NODE	6560	USED FOR NODES	8895
NODE	7135	USED FOR NODES	9470
NODE	6791	USED FOR NODES	9133
NODE	6554	USED FOR NODES	8886
NODE	7122	USED FOR NODES	9451
NODE	7438	USED FOR NODES	9762
NODE	6561	USED FOR NODES	8894
NODE	6785	USED FOR NODES	9124
NODE	7129	USED FOR NODES	9461
NODE	7431	USED FOR NODES	9752
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NODE	6547	USED FOR NODES	8876
NODE	7445	USED FOR NODES	9770
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NODE	6555	USED FOR NODES	8885
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NODE	7439	USED FOR NODES	9761
NODE	6786	USED FOR NODES	9123
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NODE	2166	USED FOR NODES	3959
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NODE	2462	USED FOR NODES	4543
NODE	2463	USED FOR NODES	4544
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NODE	2202	USED FOR NODES	3995
NODE	2203	USED FOR NODES	3996
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NODE	2234	USED FOR NODES	4119
NODE	2872	USED FOR NODES	5258
NODE	2168	USED FOR NODES	3967
NODE	2204	USED FOR NODES	4003
NODE	2270	USED FOR NODES	4365
NODE	2113	USED FOR NODES	3433
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NODE	2502	USED FOR NODES	4687
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NODE	2235	USED FOR NODES	4120

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NODE	2205	USED FOR NODES	4004
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NODE	2042	USED FOR NODES	4888
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NODE	2827	USED FOR NODES	5199
NODE	1432	USED FOR NODES	3834
NODE	1433	USED FOR NODES	3835
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NODE	1349	USED FOR NODES	3303
NODE	2043	USED FOR NODES	4889
NODE	2598	USED FOR NODES	4957
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NODE	1351	USED FOR NODES	3305
NODE	1814	USED FOR NODES	4608
NODE	1752	USED FOR NODES	4314
NODE	1487	USED FOR NODES	3889
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NODE	1435	USED FOR NODES	3843
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NODE	1788	USED FOR NODES	4586
NODE	1338	USED FOR NODES	3283
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NODE	1789	USED FOR NODES	4587
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NODE	1895	USED FOR NODES	4719
NODE	2707	USED FOR NODES	5036
NODE	2345	USED FOR NODES	4398

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NODE	1633	USED FOR NODES	4160
NODE	1924	USED FOR NODES	4735
NODE	2338	USED FOR NODES	4390
NODE	1626	USED FOR NODES	4152
NODE	1910	USED FOR NODES	4717
NODE	1619	USED FOR NODES	4142
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NODE	2700	USED FOR NODES	5028
NODE	7433	USED FOR NODES	9750
NODE	6549	USED FOR NODES	8874
NODE	7124	USED FOR NODES	9449
NODE	6787	USED FOR NODES	9122
NODE	6556	USED FOR NODES	8884
NODE	7131	USED FOR NODES	9459
NODE	7440	USED FOR NODES	9760
NODE	6794	USED FOR NODES	9130
NODE	6563	USED FOR NODES	8892
NODE	7447	USED FOR NODES	9768
NODE	7138	USED FOR NODES	9467
NODE	2346	USED FOR NODES	4397
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NODE	1918	USED FOR NODES	4726
NODE	1634	USED FOR NODES	4159
NODE	1925	USED FOR NODES	4734
NODE	2701	USED FOR NODES	5027
NODE	2339	USED FOR NODES	4389
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NODE	1627	USED FOR NODES	4151
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NODE	2694	USED FOR NODES	5017
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NODE	2702	USED FOR NODES	5026
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NODE	1628	USED FOR NODES	4150
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NODE	1919	USED FOR NODES	4725
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NODE	2341	USED FOR NODES	4387
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NODE	1636	USED FOR NODES	4157
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NODE	1914	USED FOR NODES	4713
NODE	2342	USED FOR NODES	4386
NODE	1637	USED FOR NODES	4156

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NODE 1630	USED FOR NODES	4148		
NODE 2697	USED FOR NODES	5014		
NODE 6551	USED FOR NODES	8872		
NODE 7126	USED FOR NODES	9447		
NODE 7133	USED FOR NODES	9457		
NODE 6796	USED FOR NODES	9128		
NODE 7435	USED FOR NODES	9748		
NODE 6789	USED FOR NODES	9120		
NODE 7442	USED FOR NODES	9758		
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NODE 7140	USED FOR NODES	9465		
NODE 6565	USED FOR NODES	8890		
NODE 7449	USED FOR NODES	9766		
NODE 1929	USED FOR NODES	4730		
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NODE 1624	USED FOR NODES	4137		
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NODE 1922	USED FOR NODES	4722		
NODE 1915	USED FOR NODES	4712		
NODE 2705	USED FOR NODES	5023		
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NODE 1631	USED FOR NODES	4147		
NODE 2350	USED FOR NODES	4393		
NODE 2712	USED FOR NODES	5031		
NODE 2344	USED FOR NODES	4384		
NODE 1632	USED FOR NODES	4146		
NODE 1923	USED FOR NODES	4721		
NODE 1625	USED FOR NODES	4136		
NODE 1916	USED FOR NODES	4711		
NODE 2706	USED FOR NODES	5022		
NODE 2699	USED FOR NODES	5012		
NODE 1639	USED FOR NODES	4154		
NODE 2713	USED FOR NODES	5030		
NODE 1930	USED FOR NODES	4729		
NODE 2351	USED FOR NODES	4392		
NODE 1868	USED FOR NODES	4710	7078	9446
NODE 1595	USED FOR NODES	4153	6521	8889
NODE 2653	USED FOR NODES	5021	7389	9757
NODE 117	USED FOR NODES	3315		
NODE 2314	USED FOR NODES	4391	6759	9127
NODE 1878	USED FOR NODES	4720	7088	9456
NODE 1886	USED FOR NODES	4728	7096	9464
NODE 116	USED FOR NODES	3299		
NODE 659	USED FOR NODES	3484		
NODE 588	USED FOR NODES	3380		
NODE 2306	USED FOR NODES	4383	6751	9119
NODE 2642	USED FOR NODES	5010	7378	9746
NODE 2661	USED FOR NODES	5029	7397	9765
NODE 491	USED FOR NODES	3929		
NODE 134	USED FOR NODES	3414		
NODE 1577	USED FOR NODES	4135	6503	8871
NODE 1587	USED FOR NODES	4145	6513	8881
NODE 543	USED FOR NODES	3935		
NODE 658	USED FOR NODES	3480		
NODE 135	USED FOR NODES	3430		
NODE 561	USED FOR NODES	4029		
NODE 544	USED FOR NODES	3939		
NODE 562	USED FOR NODES	4033		
NODE 640	USED FOR NODES	3386		
NODE 92	USED FOR NODES	3271		
NODE 641	USED FOR NODES	3390		
NODE 2654	USED FOR NODES	9810		
NODE 2644	USED FOR NODES	9803		
NODE 2315	USED FOR NODES	9164		
NODE 1588	USED FOR NODES	8926		
NODE 1578	USED FOR NODES	8919		
NODE 1887	USED FOR NODES	9508		

NODE	1879	USED FOR NODES	9501
NODE	2662	USED FOR NODES	9817
NODE	1869	USED FOR NODES	9494
NODE	2307	USED FOR NODES	9157
NODE	1596	USED FOR NODES	8933
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NODE	1579	USED FOR NODES	8918
NODE	1880	USED FOR NODES	9500
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NODE	1870	USED FOR NODES	9493
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NODE	2645	USED FOR NODES	9802
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NODE	2646	USED FOR NODES	9801
NODE	1590	USED FOR NODES	8924
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NODE	1881	USED FOR NODES	9499
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NODE	2317	USED FOR NODES	9162
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NODE	1580	USED FOR NODES	8917
NODE	1598	USED FOR NODES	8931
NODE	1871	USED FOR NODES	9492
NODE	2657	USED FOR NODES	9807
NODE	2665	USED FOR NODES	9814
NODE	2318	USED FOR NODES	9161
NODE	1591	USED FOR NODES	8923
NODE	1581	USED FOR NODES	8916
NODE	1872	USED FOR NODES	9491
NODE	1882	USED FOR NODES	9498
NODE	1599	USED FOR NODES	8930
NODE	1890	USED FOR NODES	9505
NODE	2310	USED FOR NODES	9154
NODE	2647	USED FOR NODES	9800
NODE	2319	USED FOR NODES	9160
NODE	2666	USED FOR NODES	9813
NODE	2311	USED FOR NODES	9153
NODE	2648	USED FOR NODES	9799
NODE	1582	USED FOR NODES	8915
NODE	1883	USED FOR NODES	9497
NODE	1592	USED FOR NODES	8922
NODE	2658	USED FOR NODES	9806
NODE	1873	USED FOR NODES	9490
NODE	1600	USED FOR NODES	8929
NODE	1891	USED FOR NODES	9504
NODE	2667	USED FOR NODES	9812
NODE	1884	USED FOR NODES	9496
NODE	2649	USED FOR NODES	9798
NODE	2312	USED FOR NODES	9152
NODE	2320	USED FOR NODES	9159
NODE	1892	USED FOR NODES	9503
NODE	1601	USED FOR NODES	8928
NODE	1593	USED FOR NODES	8921
NODE	1583	USED FOR NODES	8914
NODE	2659	USED FOR NODES	9805
NODE	1874	USED FOR NODES	9489
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NODE	1602	USED FOR NODES	8927
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NODE	2313	USED FOR NODES	9151
NODE	1885	USED FOR NODES	9495
NODE	1584	USED FOR NODES	8913
NODE	1875	USED FOR NODES	9488
NODE	1594	USED FOR NODES	8920
NODE	2321	USED FOR NODES	9158
NODE	2650	USED FOR NODES	9797

NODE	2660	USED FOR NODES	9804
NODE	1295	USED FOR NODES	8071
NODE	1450	USED FOR NODES	8640
NODE	1454	USED FOR NODES	8641
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NODE	1396	USED FOR NODES	8586
NODE	1586	USED FOR NODES	8898
NODE	1299	USED FOR NODES	8072
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NODE	1300	USED FOR NODES	8073
NODE	483	USED FOR NODES	8679
NODE	2651	USED FOR NODES	9781
NODE	1876	USED FOR NODES	9472
NODE	2643	USED FOR NODES	9773
NODE	580	USED FOR NODES	8130
NODE	1525	USED FOR NODES	8781
NODE	2652	USED FOR NODES	9782
NODE	75	USED FOR NODES	8067
NODE	1790	USED FOR NODES	9311
NODE	1798	USED FOR NODES	9312
NODE	1799	USED FOR NODES	9313
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NODE	1533	USED FOR NODES	8782
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NODE	1585	USED FOR NODES	8897
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NODE	1772	USED FOR NODES	9048
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NODE	1416	USED FOR NODES	8596
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NODE	2447	USED FOR NODES	9242
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NODE	1326	USED FOR NODES	8089
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NODE	1545	USED FOR NODES	8799
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NODE	1546	USED FOR NODES	8800
NODE	642	USED FOR NODES	8134
NODE	1313	USED FOR NODES	8085
NODE	2046	USED FOR NODES	9620
NODE	2047	USED FOR NODES	9621
NODE	1408	USED FOR NODES	8594
NODE	1409	USED FOR NODES	8595
NODE	1462	USED FOR NODES	8648
NODE	108	USED FOR NODES	8083
NODE	1463	USED FOR NODES	8649
NODE	2430	USED FOR NODES	9239
NODE	2588	USED FOR NODES	9694
NODE	2431	USED FOR NODES	9240
NODE	2830	USED FOR NODES	9930
NODE	1315	USED FOR NODES	8087
NODE	1756	USED FOR NODES	9046
NODE	1820	USED FOR NODES	9338
NODE	1822	USED FOR NODES	9340
NODE	2831	USED FOR NODES	9931

NODE 1755 USED FOR NODES 9045
 NODE 2589 USED FOR NODES 9702
 NODE 1314 USED FOR NODES 8086
 NODE 1821 USED FOR NODES 9339
 NODE 2530 USED FOR NODES 9397
 NODE 2195 USED FOR NODES 8750
 NODE 2627 USED FOR NODES 9713
 NODE 2483 USED FOR NODES 9278
 NODE 2891 USED FOR NODES 9977
 NODE 2098 USED FOR NODES 8189
 NODE 2289 USED FOR NODES 9084
 NODE 2573 USED FOR NODES 9659
 NODE 2159 USED FOR NODES 8714
 NODE 2253 USED FOR NODES 8838
 NODE 2572 USED FOR NODES 9658
 NODE 2158 USED FOR NODES 8713
 NODE 2626 USED FOR NODES 9712
 NODE 668 USED FOR NODES 8225
 NODE 2096 USED FOR NODES 8187
 NODE 2890 USED FOR NODES 9976
 NODE 571 USED FOR NODES 8774
 NODE 130 USED FOR NODES 8183
 NODE 2482 USED FOR NODES 9277
 NODE 2252 USED FOR NODES 8837
 NODE 2194 USED FOR NODES 8749
 NODE 2528 USED FOR NODES 9395
 NODE 2288 USED FOR NODES 9083
 NODE 2529 USED FOR NODES 9396
 NODE 2097 USED FOR NODES 8188
 NODE 2086 USED FOR NODES 8186
 NODE 2151 USED FOR NODES 8712
 NODE 2187 USED FOR NODES 8748
 NODE 2150 USED FOR NODES 8711
 NODE 2084 USED FOR NODES 8184
 NODE 2186 USED FOR NODES 8747
 NODE 2085 USED FOR NODES 8185
 NODE 2236 USED FOR NODES 8835
 NODE 2237 USED FOR NODES 8836
 NODE 2557 USED FOR NODES 9657
 NODE 2875 USED FOR NODES 9975
 NODE 2466 USED FOR NODES 9275
 NODE 2467 USED FOR NODES 9276
 NODE 2504 USED FOR NODES 9392
 NODE 563 USED FOR NODES 8773
 NODE 2505 USED FOR NODES 9393
 NODE 660 USED FOR NODES 8224
 NODE 2273 USED FOR NODES 9082
 NODE 2272 USED FOR NODES 9081
 NODE 2874 USED FOR NODES 9974
 NODE 126 USED FOR NODES 8182
 NODE 2610 USED FOR NODES 9710
 NODE 2611 USED FOR NODES 9711
 NODE 2506 USED FOR NODES 9394
 NODE 2556 USED FOR NODES 9656

*** WARNING *** CP= 62.470 TIME= 03:42:45
 Same node numbers associated with more than one solid model entity.
 Future mesh clearing operations could produce unexpected results.
 NUMMRG,KP could correct this problem.

MERGE COINCIDENT KEYPOINTS WITHIN TOLERANCE OF .10000E-03
 KEYPOINT 1 USED FOR KEYPOINT(S) 209 372 535
 KEYPOINT 11 USED FOR KEYPOINT(S) 541
 KEYPOINT 13 USED FOR KEYPOINT(S) 210
 KEYPOINT 14 USED FOR KEYPOINT(S) 551
 KEYPOINT 16 USED FOR KEYPOINT(S) 223
 KEYPOINT 17 USED FOR KEYPOINT(S) 560
 KEYPOINT 19 USED FOR KEYPOINT(S) 232
 KEYPOINT 20 USED FOR KEYPOINT(S) 212 375 538
 KEYPOINT 21 USED FOR KEYPOINT(S) 218 381 544

KEYPOINT	22 USED FOR KEYPOINT(S)	297	460	623
KEYPOINT	23 USED FOR KEYPOINT(S)	304	467	630
KEYPOINT	24 USED FOR KEYPOINT(S)	311	474	637
KEYPOINT	25 USED FOR KEYPOINT(S)	267	430	593
KEYPOINT	26 USED FOR KEYPOINT(S)	271	434	597
KEYPOINT	27 USED FOR KEYPOINT(S)	275	438	601
KEYPOINT	28 USED FOR KEYPOINT(S)	318	481	644
KEYPOINT	29 USED FOR KEYPOINT(S)	325	488	651
KEYPOINT	30 USED FOR KEYPOINT(S)	332	495	658
KEYPOINT	31 USED FOR KEYPOINT(S)	339	502	665
KEYPOINT	50 USED FOR KEYPOINT(S)	603		
KEYPOINT	51 USED FOR KEYPOINT(S)	274		
KEYPOINT	52 USED FOR KEYPOINT(S)	612		
KEYPOINT	53 USED FOR KEYPOINT(S)	285		
KEYPOINT	54 USED FOR KEYPOINT(S)	621		
KEYPOINT	55 USED FOR KEYPOINT(S)	294		
KEYPOINT	56 USED FOR KEYPOINT(S)	546		
KEYPOINT	57 USED FOR KEYPOINT(S)	217		
KEYPOINT	58 USED FOR KEYPOINT(S)	555		
KEYPOINT	59 USED FOR KEYPOINT(S)	228		
KEYPOINT	60 USED FOR KEYPOINT(S)	564		
KEYPOINT	61 USED FOR KEYPOINT(S)	237		
KEYPOINT	89 USED FOR KEYPOINT(S)	542		
KEYPOINT	94 USED FOR KEYPOINT(S)	211		
KEYPOINT	99 USED FOR KEYPOINT(S)	624		
KEYPOINT	103 USED FOR KEYPOINT(S)	296		
KEYPOINT	105 USED FOR KEYPOINT(S)	300		
KEYPOINT	107 USED FOR KEYPOINT(S)	552		
KEYPOINT	109 USED FOR KEYPOINT(S)	224		
KEYPOINT	110 USED FOR KEYPOINT(S)	625		
KEYPOINT	111 USED FOR KEYPOINT(S)	302		
KEYPOINT	115 USED FOR KEYPOINT(S)	627		
KEYPOINT	117 USED FOR KEYPOINT(S)	645		
KEYPOINT	119 USED FOR KEYPOINT(S)	561		
KEYPOINT	121 USED FOR KEYPOINT(S)	233		
KEYPOINT	122 USED FOR KEYPOINT(S)	631		
KEYPOINT	123 USED FOR KEYPOINT(S)	303		
KEYPOINT	127 USED FOR KEYPOINT(S)	307		
KEYPOINT	129 USED FOR KEYPOINT(S)	632		
KEYPOINT	131 USED FOR KEYPOINT(S)	309		
KEYPOINT	132 USED FOR KEYPOINT(S)	595		
KEYPOINT	133 USED FOR KEYPOINT(S)	634		
KEYPOINT	134 USED FOR KEYPOINT(S)	317		
KEYPOINT	136 USED FOR KEYPOINT(S)	638		
KEYPOINT	137 USED FOR KEYPOINT(S)	266		
KEYPOINT	138 USED FOR KEYPOINT(S)	310		
KEYPOINT	139 USED FOR KEYPOINT(S)	314		
KEYPOINT	140 USED FOR KEYPOINT(S)	599		
KEYPOINT	141 USED FOR KEYPOINT(S)	639		
KEYPOINT	142 USED FOR KEYPOINT(S)	316		
KEYPOINT	144 USED FOR KEYPOINT(S)	641		
KEYPOINT	145 USED FOR KEYPOINT(S)	270		
KEYPOINT	146 USED FOR KEYPOINT(S)	321		
KEYPOINT	147 USED FOR KEYPOINT(S)	646		
KEYPOINT	148 USED FOR KEYPOINT(S)	323		
KEYPOINT	149 USED FOR KEYPOINT(S)	648		
KEYPOINT	152 USED FOR KEYPOINT(S)	652		
KEYPOINT	153 USED FOR KEYPOINT(S)	324		
KEYPOINT	154 USED FOR KEYPOINT(S)	328		
KEYPOINT	155 USED FOR KEYPOINT(S)	653		
KEYPOINT	156 USED FOR KEYPOINT(S)	330		
KEYPOINT	158 USED FOR KEYPOINT(S)	606		
KEYPOINT	159 USED FOR KEYPOINT(S)	655		
KEYPOINT	160 USED FOR KEYPOINT(S)	279		
KEYPOINT	162 USED FOR KEYPOINT(S)	659		
KEYPOINT	164 USED FOR KEYPOINT(S)	609		
KEYPOINT	165 USED FOR KEYPOINT(S)	331		
KEYPOINT	166 USED FOR KEYPOINT(S)	282		
KEYPOINT	167 USED FOR KEYPOINT(S)	335		
KEYPOINT	168 USED FOR KEYPOINT(S)	660		

KEYPOINT	170 USED FOR KEYPOINT(S)	337
KEYPOINT	171 USED FOR KEYPOINT(S)	662
KEYPOINT	173 USED FOR KEYPOINT(S)	666
KEYPOINT	174 USED FOR KEYPOINT(S)	338
KEYPOINT	176 USED FOR KEYPOINT(S)	615
KEYPOINT	177 USED FOR KEYPOINT(S)	342
KEYPOINT	178 USED FOR KEYPOINT(S)	288
KEYPOINT	179 USED FOR KEYPOINT(S)	667
KEYPOINT	180 USED FOR KEYPOINT(S)	344
KEYPOINT	182 USED FOR KEYPOINT(S)	618
KEYPOINT	183 USED FOR KEYPOINT(S)	669
KEYPOINT	184 USED FOR KEYPOINT(S)	291
KEYPOINT	215 USED FOR KEYPOINT(S)	373
KEYPOINT	216 USED FOR KEYPOINT(S)	374
KEYPOINT	220 USED FOR KEYPOINT(S)	380
KEYPOINT	225 USED FOR KEYPOINT(S)	386
KEYPOINT	226 USED FOR KEYPOINT(S)	387
KEYPOINT	229 USED FOR KEYPOINT(S)	391
KEYPOINT	234 USED FOR KEYPOINT(S)	395
KEYPOINT	235 USED FOR KEYPOINT(S)	396
KEYPOINT	238 USED FOR KEYPOINT(S)	400
KEYPOINT	269 USED FOR KEYPOINT(S)	429
KEYPOINT	273 USED FOR KEYPOINT(S)	433
KEYPOINT	277 USED FOR KEYPOINT(S)	437
KEYPOINT	280 USED FOR KEYPOINT(S)	442
KEYPOINT	283 USED FOR KEYPOINT(S)	445
KEYPOINT	286 USED FOR KEYPOINT(S)	448
KEYPOINT	289 USED FOR KEYPOINT(S)	451
KEYPOINT	292 USED FOR KEYPOINT(S)	454
KEYPOINT	295 USED FOR KEYPOINT(S)	457
KEYPOINT	298 USED FOR KEYPOINT(S)	459
KEYPOINT	299 USED FOR KEYPOINT(S)	463
KEYPOINT	301 USED FOR KEYPOINT(S)	465
KEYPOINT	305 USED FOR KEYPOINT(S)	466
KEYPOINT	306 USED FOR KEYPOINT(S)	470
KEYPOINT	308 USED FOR KEYPOINT(S)	472
KEYPOINT	312 USED FOR KEYPOINT(S)	473
KEYPOINT	313 USED FOR KEYPOINT(S)	477
KEYPOINT	315 USED FOR KEYPOINT(S)	479
KEYPOINT	319 USED FOR KEYPOINT(S)	480
KEYPOINT	320 USED FOR KEYPOINT(S)	484
KEYPOINT	322 USED FOR KEYPOINT(S)	486
KEYPOINT	326 USED FOR KEYPOINT(S)	487
KEYPOINT	327 USED FOR KEYPOINT(S)	491
KEYPOINT	329 USED FOR KEYPOINT(S)	493
KEYPOINT	333 USED FOR KEYPOINT(S)	494
KEYPOINT	334 USED FOR KEYPOINT(S)	498
KEYPOINT	336 USED FOR KEYPOINT(S)	500
KEYPOINT	340 USED FOR KEYPOINT(S)	501
KEYPOINT	341 USED FOR KEYPOINT(S)	505
KEYPOINT	343 USED FOR KEYPOINT(S)	507
KEYPOINT	378 USED FOR KEYPOINT(S)	536
KEYPOINT	379 USED FOR KEYPOINT(S)	537
KEYPOINT	383 USED FOR KEYPOINT(S)	543
KEYPOINT	388 USED FOR KEYPOINT(S)	549
KEYPOINT	389 USED FOR KEYPOINT(S)	550
KEYPOINT	392 USED FOR KEYPOINT(S)	554
KEYPOINT	397 USED FOR KEYPOINT(S)	558
KEYPOINT	398 USED FOR KEYPOINT(S)	559
KEYPOINT	401 USED FOR KEYPOINT(S)	563
KEYPOINT	432 USED FOR KEYPOINT(S)	592
KEYPOINT	436 USED FOR KEYPOINT(S)	596
KEYPOINT	440 USED FOR KEYPOINT(S)	600
KEYPOINT	443 USED FOR KEYPOINT(S)	605
KEYPOINT	446 USED FOR KEYPOINT(S)	608
KEYPOINT	449 USED FOR KEYPOINT(S)	611
KEYPOINT	452 USED FOR KEYPOINT(S)	614
KEYPOINT	455 USED FOR KEYPOINT(S)	617
KEYPOINT	458 USED FOR KEYPOINT(S)	620
KEYPOINT	461 USED FOR KEYPOINT(S)	622

KEYPOINT	462 USED FOR KEYPOINT(S)	626	
KEYPOINT	464 USED FOR KEYPOINT(S)	628	
KEYPOINT	468 USED FOR KEYPOINT(S)	629	
KEYPOINT	469 USED FOR KEYPOINT(S)	633	
KEYPOINT	471 USED FOR KEYPOINT(S)	635	
KEYPOINT	475 USED FOR KEYPOINT(S)	636	
KEYPOINT	476 USED FOR KEYPOINT(S)	640	
KEYPOINT	478 USED FOR KEYPOINT(S)	642	
KEYPOINT	482 USED FOR KEYPOINT(S)	643	
KEYPOINT	483 USED FOR KEYPOINT(S)	647	
KEYPOINT	485 USED FOR KEYPOINT(S)	649	
KEYPOINT	489 USED FOR KEYPOINT(S)	650	
KEYPOINT	490 USED FOR KEYPOINT(S)	654	
KEYPOINT	492 USED FOR KEYPOINT(S)	656	
KEYPOINT	496 USED FOR KEYPOINT(S)	657	
KEYPOINT	497 USED FOR KEYPOINT(S)	661	
KEYPOINT	499 USED FOR KEYPOINT(S)	663	
KEYPOINT	503 USED FOR KEYPOINT(S)	664	
KEYPOINT	504 USED FOR KEYPOINT(S)	668	
KEYPOINT	506 USED FOR KEYPOINT(S)	670	
LINE	21 USED FOR LINE(S)	511	
LINE	22 USED FOR LINE(S)	1363	
LINE	25 USED FOR LINE(S)	1385	
LINE	27 USED FOR LINE(S)	549	
LINE	30 USED FOR LINE(S)	1406	
LINE	32 USED FOR LINE(S)	570	
LINE	35 USED FOR LINE(S)	514	931 1348
LINE	36 USED FOR LINE(S)	533	950 1367
LINE	37 USED FOR LINE(S)	746	1163 1580
LINE	38 USED FOR LINE(S)	765	1182 1599
LINE	39 USED FOR LINE(S)	781	1198 1615
LINE	40 USED FOR LINE(S)	662	1079 1496
LINE	41 USED FOR LINE(S)	674	1091 1508
LINE	42 USED FOR LINE(S)	686	1103 1520
LINE	43 USED FOR LINE(S)	797	1214 1631
LINE	44 USED FOR LINE(S)	816	1233 1650
LINE	45 USED FOR LINE(S)	832	1249 1666
LINE	46 USED FOR LINE(S)	848	1265 1682
LINE	74 USED FOR LINE(S)	1529	
LINE	75 USED FOR LINE(S)	685	
LINE	76 USED FOR LINE(S)	1552	
LINE	77 USED FOR LINE(S)	716	
LINE	78 USED FOR LINE(S)	1576	
LINE	79 USED FOR LINE(S)	740	
LINE	83 USED FOR LINE(S)	1376	
LINE	84 USED FOR LINE(S)	532	
LINE	85 USED FOR LINE(S)	1396	
LINE	86 USED FOR LINE(S)	560	
LINE	87 USED FOR LINE(S)	1417	
LINE	88 USED FOR LINE(S)	581	
LINE	158 USED FOR LINE(S)	1364	
LINE	160 USED FOR LINE(S)	1359	
LINE	172 USED FOR LINE(S)	512	
LINE	176 USED FOR LINE(S)	513	
LINE	180 USED FOR LINE(S)	1373	
LINE	192 USED FOR LINE(S)	531	
LINE	204 USED FOR LINE(S)	1386	
LINE	205 USED FOR LINE(S)	1387	
LINE	206 USED FOR LINE(S)	1584	
LINE	207 USED FOR LINE(S)	1635	
LINE	208 USED FOR LINE(S)	550	
LINE	209 USED FOR LINE(S)	547	
LINE	211 USED FOR LINE(S)	1582	
LINE	217 USED FOR LINE(S)	1395	
LINE	222 USED FOR LINE(S)	558	
LINE	224 USED FOR LINE(S)	744	
LINE	230 USED FOR LINE(S)	1407	
LINE	231 USED FOR LINE(S)	1408	
LINE	233 USED FOR LINE(S)	745	
LINE	234 USED FOR LINE(S)	571	

LINE	235 USED FOR LINE(S)	568
LINE	237 USED FOR LINE(S)	756
LINE	243 USED FOR LINE(S)	1416
LINE	245 USED FOR LINE(S)	754
LINE	248 USED FOR LINE(S)	579
LINE	250 USED FOR LINE(S)	1585
LINE	251 USED FOR LINE(S)	1586
LINE	257 USED FOR LINE(S)	762
LINE	258 USED FOR LINE(S)	760
LINE	263 USED FOR LINE(S)	1591
LINE	267 USED FOR LINE(S)	1592
LINE	269 USED FOR LINE(S)	1602
LINE	271 USED FOR LINE(S)	1600
LINE	278 USED FOR LINE(S)	763
LINE	282 USED FOR LINE(S)	764
LINE	283 USED FOR LINE(S)	773
LINE	287 USED FOR LINE(S)	771
LINE	289 USED FOR LINE(S)	1505
LINE	291 USED FOR LINE(S)	1502
LINE	293 USED FOR LINE(S)	1603
LINE	294 USED FOR LINE(S)	1604
LINE	295 USED FOR LINE(S)	778
LINE	300 USED FOR LINE(S)	776
LINE	303 USED FOR LINE(S)	660
LINE	305 USED FOR LINE(S)	1608
LINE	306 USED FOR LINE(S)	1609
LINE	307 USED FOR LINE(S)	661
LINE	308 USED FOR LINE(S)	1618
LINE	309 USED FOR LINE(S)	1517
LINE	310 USED FOR LINE(S)	1633
LINE	311 USED FOR LINE(S)	1514
LINE	313 USED FOR LINE(S)	1616
LINE	315 USED FOR LINE(S)	779
LINE	320 USED FOR LINE(S)	780
LINE	321 USED FOR LINE(S)	789
LINE	323 USED FOR LINE(S)	672
LINE	325 USED FOR LINE(S)	787
LINE	327 USED FOR LINE(S)	673
LINE	328 USED FOR LINE(S)	1619
LINE	329 USED FOR LINE(S)	1620
LINE	330 USED FOR LINE(S)	794
LINE	331 USED FOR LINE(S)	1526
LINE	333 USED FOR LINE(S)	792
LINE	335 USED FOR LINE(S)	1624
LINE	340 USED FOR LINE(S)	1625
LINE	343 USED FOR LINE(S)	684
LINE	345 USED FOR LINE(S)	795
LINE	346 USED FOR LINE(S)	796
LINE	347 USED FOR LINE(S)	807
LINE	348 USED FOR LINE(S)	805
LINE	350 USED FOR LINE(S)	1636
LINE	351 USED FOR LINE(S)	1637
LINE	355 USED FOR LINE(S)	1535
LINE	356 USED FOR LINE(S)	1536
LINE	357 USED FOR LINE(S)	813
LINE	358 USED FOR LINE(S)	811
LINE	359 USED FOR LINE(S)	700
LINE	360 USED FOR LINE(S)	698
LINE	363 USED FOR LINE(S)	1642
LINE	364 USED FOR LINE(S)	1643
LINE	368 USED FOR LINE(S)	1543
LINE	369 USED FOR LINE(S)	1544
LINE	370 USED FOR LINE(S)	1653
LINE	372 USED FOR LINE(S)	708
LINE	373 USED FOR LINE(S)	706
LINE	375 USED FOR LINE(S)	1651
LINE	377 USED FOR LINE(S)	814
LINE	381 USED FOR LINE(S)	1551
LINE	382 USED FOR LINE(S)	815
LINE	383 USED FOR LINE(S)	824

LINE	384 USED FOR LINE(S)	822
LINE	386 USED FOR LINE(S)	714
LINE	388 USED FOR LINE(S)	1654
LINE	389 USED FOR LINE(S)	1655
LINE	390 USED FOR LINE(S)	829
LINE	394 USED FOR LINE(S)	1559
LINE	395 USED FOR LINE(S)	1560
LINE	396 USED FOR LINE(S)	827
LINE	398 USED FOR LINE(S)	724
LINE	399 USED FOR LINE(S)	722
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LINE	402 USED FOR LINE(S)	1660
LINE	403 USED FOR LINE(S)	1669
LINE	407 USED FOR LINE(S)	1567
LINE	408 USED FOR LINE(S)	1568
LINE	410 USED FOR LINE(S)	1667
LINE	411 USED FOR LINE(S)	732
LINE	412 USED FOR LINE(S)	730
LINE	415 USED FOR LINE(S)	830
LINE	416 USED FOR LINE(S)	831
LINE	420 USED FOR LINE(S)	1575
LINE	421 USED FOR LINE(S)	840
LINE	422 USED FOR LINE(S)	838
LINE	424 USED FOR LINE(S)	1670
LINE	425 USED FOR LINE(S)	738
LINE	427 USED FOR LINE(S)	1671
LINE	428 USED FOR LINE(S)	845
LINE	429 USED FOR LINE(S)	843
LINE	431 USED FOR LINE(S)	1675
LINE	432 USED FOR LINE(S)	1676
LINE	433 USED FOR LINE(S)	1685
LINE	435 USED FOR LINE(S)	1683
LINE	437 USED FOR LINE(S)	846
LINE	438 USED FOR LINE(S)	847
LINE	439 USED FOR LINE(S)	856
LINE	440 USED FOR LINE(S)	854
LINE	442 USED FOR LINE(S)	1686
LINE	443 USED FOR LINE(S)	1687
LINE	444 USED FOR LINE(S)	861
LINE	445 USED FOR LINE(S)	859
LINE	447 USED FOR LINE(S)	1691
LINE	448 USED FOR LINE(S)	1692
LINE	525 USED FOR LINE(S)	929
LINE	529 USED FOR LINE(S)	928
LINE	530 USED FOR LINE(S)	930
LINE	539 USED FOR LINE(S)	948
LINE	542 USED FOR LINE(S)	949
LINE	551 USED FOR LINE(S)	966
LINE	552 USED FOR LINE(S)	964
LINE	553 USED FOR LINE(S)	967
LINE	561 USED FOR LINE(S)	975
LINE	562 USED FOR LINE(S)	977
LINE	572 USED FOR LINE(S)	987
LINE	573 USED FOR LINE(S)	985
LINE	574 USED FOR LINE(S)	988
LINE	582 USED FOR LINE(S)	996
LINE	583 USED FOR LINE(S)	998
LINE	668 USED FOR LINE(S)	1077
LINE	671 USED FOR LINE(S)	1078
LINE	680 USED FOR LINE(S)	1089
LINE	683 USED FOR LINE(S)	1090
LINE	692 USED FOR LINE(S)	1101
LINE	695 USED FOR LINE(S)	1102
LINE	701 USED FOR LINE(S)	1115
LINE	702 USED FOR LINE(S)	1117
LINE	709 USED FOR LINE(S)	1123
LINE	710 USED FOR LINE(S)	1125
LINE	717 USED FOR LINE(S)	1131
LINE	718 USED FOR LINE(S)	1133
LINE	725 USED FOR LINE(S)	1139

LINE	726 USED FOR LINE(S)	1141
LINE	733 USED FOR LINE(S)	1147
LINE	734 USED FOR LINE(S)	1149
LINE	741 USED FOR LINE(S)	1155
LINE	742 USED FOR LINE(S)	1157
LINE	748 USED FOR LINE(S)	1161
LINE	750 USED FOR LINE(S)	1162
LINE	751 USED FOR LINE(S)	1171
LINE	752 USED FOR LINE(S)	1173
LINE	757 USED FOR LINE(S)	1177
LINE	758 USED FOR LINE(S)	1179
LINE	766 USED FOR LINE(S)	1180
LINE	768 USED FOR LINE(S)	1181
LINE	769 USED FOR LINE(S)	1188
LINE	770 USED FOR LINE(S)	1190
LINE	774 USED FOR LINE(S)	1193
LINE	775 USED FOR LINE(S)	1195
LINE	782 USED FOR LINE(S)	1196
LINE	784 USED FOR LINE(S)	1197
LINE	785 USED FOR LINE(S)	1204
LINE	786 USED FOR LINE(S)	1206
LINE	790 USED FOR LINE(S)	1209
LINE	791 USED FOR LINE(S)	1211
LINE	799 USED FOR LINE(S)	1212
LINE	801 USED FOR LINE(S)	1213
LINE	802 USED FOR LINE(S)	1222
LINE	803 USED FOR LINE(S)	1224
LINE	808 USED FOR LINE(S)	1228
LINE	809 USED FOR LINE(S)	1230
LINE	817 USED FOR LINE(S)	1231
LINE	819 USED FOR LINE(S)	1232
LINE	820 USED FOR LINE(S)	1239
LINE	821 USED FOR LINE(S)	1241
LINE	825 USED FOR LINE(S)	1244
LINE	826 USED FOR LINE(S)	1246
LINE	833 USED FOR LINE(S)	1247
LINE	835 USED FOR LINE(S)	1248
LINE	836 USED FOR LINE(S)	1255
LINE	837 USED FOR LINE(S)	1257
LINE	841 USED FOR LINE(S)	1260
LINE	842 USED FOR LINE(S)	1262
LINE	849 USED FOR LINE(S)	1263
LINE	851 USED FOR LINE(S)	1264
LINE	852 USED FOR LINE(S)	1271
LINE	853 USED FOR LINE(S)	1273
LINE	857 USED FOR LINE(S)	1276
LINE	858 USED FOR LINE(S)	1278
LINE	942 USED FOR LINE(S)	1346
LINE	946 USED FOR LINE(S)	1345
LINE	947 USED FOR LINE(S)	1347
LINE	956 USED FOR LINE(S)	1365
LINE	959 USED FOR LINE(S)	1366
LINE	968 USED FOR LINE(S)	1383
LINE	969 USED FOR LINE(S)	1381
LINE	970 USED FOR LINE(S)	1384
LINE	978 USED FOR LINE(S)	1392
LINE	979 USED FOR LINE(S)	1394
LINE	989 USED FOR LINE(S)	1404
LINE	990 USED FOR LINE(S)	1402
LINE	991 USED FOR LINE(S)	1405
LINE	999 USED FOR LINE(S)	1413
LINE	1000 USED FOR LINE(S)	1415
LINE	1085 USED FOR LINE(S)	1494
LINE	1088 USED FOR LINE(S)	1495
LINE	1097 USED FOR LINE(S)	1506
LINE	1100 USED FOR LINE(S)	1507
LINE	1109 USED FOR LINE(S)	1518
LINE	1112 USED FOR LINE(S)	1519
LINE	1118 USED FOR LINE(S)	1532
LINE	1119 USED FOR LINE(S)	1534

LINE	1126	USED FOR LINE(S)	1540
LINE	1127	USED FOR LINE(S)	1542
LINE	1134	USED FOR LINE(S)	1548
LINE	1135	USED FOR LINE(S)	1550
LINE	1142	USED FOR LINE(S)	1556
LINE	1143	USED FOR LINE(S)	1558
LINE	1150	USED FOR LINE(S)	1564
LINE	1151	USED FOR LINE(S)	1566
LINE	1158	USED FOR LINE(S)	1572
LINE	1159	USED FOR LINE(S)	1574
LINE	1165	USED FOR LINE(S)	1578
LINE	1167	USED FOR LINE(S)	1579
LINE	1168	USED FOR LINE(S)	1588
LINE	1169	USED FOR LINE(S)	1590
LINE	1174	USED FOR LINE(S)	1594
LINE	1175	USED FOR LINE(S)	1596
LINE	1183	USED FOR LINE(S)	1597
LINE	1185	USED FOR LINE(S)	1598
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LINE	1187	USED FOR LINE(S)	1607
LINE	1191	USED FOR LINE(S)	1610
LINE	1192	USED FOR LINE(S)	1612
LINE	1199	USED FOR LINE(S)	1613
LINE	1201	USED FOR LINE(S)	1614
LINE	1202	USED FOR LINE(S)	1621
LINE	1203	USED FOR LINE(S)	1623
LINE	1207	USED FOR LINE(S)	1626
LINE	1208	USED FOR LINE(S)	1628
LINE	1216	USED FOR LINE(S)	1629
LINE	1218	USED FOR LINE(S)	1630
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LINE	1220	USED FOR LINE(S)	1641
LINE	1225	USED FOR LINE(S)	1645
LINE	1226	USED FOR LINE(S)	1647
LINE	1234	USED FOR LINE(S)	1648
LINE	1236	USED FOR LINE(S)	1649
LINE	1237	USED FOR LINE(S)	1656
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LINE	1242	USED FOR LINE(S)	1661
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LINE	1254	USED FOR LINE(S)	1674
LINE	1258	USED FOR LINE(S)	1677
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LINE	1266	USED FOR LINE(S)	1680
LINE	1268	USED FOR LINE(S)	1681
LINE	1269	USED FOR LINE(S)	1688
LINE	1270	USED FOR LINE(S)	1690
LINE	1274	USED FOR LINE(S)	1693
LINE	1275	USED FOR LINE(S)	1695
AREA	89	USED FOR AREA(S)	1148
AREA	102	USED FOR AREA(S)	423
AREA	105	USED FOR AREA(S)	1161
AREA	118	USED FOR AREA(S)	439
AREA	124	USED FOR AREA(S)	1168
AREA	127	USED FOR AREA(S)	453
AREA	133	USED FOR AREA(S)	1176
AREA	136	USED FOR AREA(S)	462
AREA	142	USED FOR AREA(S)	1184
AREA	145	USED FOR AREA(S)	469
AREA	151	USED FOR AREA(S)	1192
AREA	154	USED FOR AREA(S)	478
AREA	169	USED FOR AREA(S)	1347
AREA	178	USED FOR AREA(S)	633
AREA	185	USED FOR AREA(S)	640
AREA	194	USED FOR AREA(S)	1350
AREA	201	USED FOR AREA(S)	645
AREA	210	USED FOR AREA(S)	1355

AREA	217	USED	FOR	AREA(S)	1277
AREA	219	USED	FOR	AREA(S)	1362
AREA	228	USED	FOR	AREA(S)	648
AREA	230	USED	FOR	AREA(S)	555
AREA	233	USED	FOR	AREA(S)	1289
AREA	235	USED	FOR	AREA(S)	654
AREA	244	USED	FOR	AREA(S)	1364
AREA	246	USED	FOR	AREA(S)	567
AREA	249	USED	FOR	AREA(S)	1301
AREA	251	USED	FOR	AREA(S)	658
AREA	260	USED	FOR	AREA(S)	1368
AREA	262	USED	FOR	AREA(S)	579
AREA	265	USED	FOR	AREA(S)	1374
AREA	268	USED	FOR	AREA(S)	1307
AREA	271	USED	FOR	AREA(S)	593
AREA	274	USED	FOR	AREA(S)	660
AREA	277	USED	FOR	AREA(S)	1314
AREA	280	USED	FOR	AREA(S)	600
AREA	283	USED	FOR	AREA(S)	666
AREA	286	USED	FOR	AREA(S)	1321
AREA	289	USED	FOR	AREA(S)	607
AREA	292	USED	FOR	AREA(S)	1376
AREA	295	USED	FOR	AREA(S)	1328
AREA	298	USED	FOR	AREA(S)	614
AREA	301	USED	FOR	AREA(S)	670
AREA	304	USED	FOR	AREA(S)	1335
AREA	307	USED	FOR	AREA(S)	621
AREA	310	USED	FOR	AREA(S)	1380
AREA	313	USED	FOR	AREA(S)	1342
AREA	316	USED	FOR	AREA(S)	628
AREA	319	USED	FOR	AREA(S)	1386
AREA	321	USED	FOR	AREA(S)	672
AREA	323	USED	FOR	AREA(S)	679
AREA	325	USED	FOR	AREA(S)	1389
AREA	327	USED	FOR	AREA(S)	684
AREA	329	USED	FOR	AREA(S)	1394
AREA	331	USED	FOR	AREA(S)	1401
AREA	333	USED	FOR	AREA(S)	687
AREA	335	USED	FOR	AREA(S)	693
AREA	337	USED	FOR	AREA(S)	1403
AREA	339	USED	FOR	AREA(S)	697
AREA	341	USED	FOR	AREA(S)	1407
AREA	343	USED	FOR	AREA(S)	1413
AREA	345	USED	FOR	AREA(S)	699
AREA	347	USED	FOR	AREA(S)	705
AREA	349	USED	FOR	AREA(S)	1415
AREA	351	USED	FOR	AREA(S)	709
AREA	353	USED	FOR	AREA(S)	1419
AREA	355	USED	FOR	AREA(S)	1425
AREA	357	USED	FOR	AREA(S)	711
AREA	359	USED	FOR	AREA(S)	717
AREA	361	USED	FOR	AREA(S)	1427
AREA	363	USED	FOR	AREA(S)	721
AREA	365	USED	FOR	AREA(S)	1431
AREA	436	USED	FOR	AREA(S)	779
AREA	449	USED	FOR	AREA(S)	795
AREA	456	USED	FOR	AREA(S)	809
AREA	464	USED	FOR	AREA(S)	818
AREA	472	USED	FOR	AREA(S)	825
AREA	480	USED	FOR	AREA(S)	834
AREA	565	USED	FOR	AREA(S)	911
AREA	577	USED	FOR	AREA(S)	923
AREA	589	USED	FOR	AREA(S)	935
AREA	595	USED	FOR	AREA(S)	949
AREA	602	USED	FOR	AREA(S)	956
AREA	609	USED	FOR	AREA(S)	963
AREA	616	USED	FOR	AREA(S)	970
AREA	623	USED	FOR	AREA(S)	977
AREA	630	USED	FOR	AREA(S)	984
AREA	635	USED	FOR	AREA(S)	989

AREA 638 USED FOR AREA(S) 996
 AREA 643 USED FOR AREA(S) 1001
 AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)

XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)
 XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,

ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,32,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #2

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,32,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
 NSLA,S,1,
 ESURF,

Inner SS. Side of Can. #2

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
 ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
 CSYS,32,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0
 CSYS,0,
 NSLA,S,1,
 ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,33,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #3

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,33,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0

NSLA,S,1,
ESURF,

Inner SS. Side of Can. #3

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #4

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #4

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation - Between Can and IB
Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.200 TIME= 03:42:59
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360
KABS= 0. TOLERANCE= .000000E+00

```

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832
*****
Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,,346,
ASEL,U,AREA,,702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,
*****
Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140
KABS= 0. TOLERANCE= .000000E+00

```

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.150

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21h2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:43:31 NOV 03, 1995 CP= 107.280
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.710 TIME= 03:43:31
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5872.140

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 05:19:43 NOV 03, 1995 CP= 5872.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5872.760 TIME= 05:19:44
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7851.160

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH
/COM,

```
/AUX12,  
ESEL,S,TYPE,,6,  
NSLE,S,  
STEF,5.67E-8,  
GEOM,0,  
VTYPE,0,100,  
WRITE,glscangap,
```

```
ALL SELECT FOR ITEM=ELEM COMPONENT=  
IN RANGE 1 TO 10656 STEP 1
```

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

```
ALL SELECT FOR ITEM=NODE COMPONENT=  
IN RANGE 1 TO 10009 STEP 1
```

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:52:46 NOV 03, 1995 CP= 7851.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

```
ELEMENT TYPE SET TO 18  
SE,glscangap,  
SE,iobargap,
```

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

```
SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 6 TO 6 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 16 TO 16 STEP 1
```

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 26 TO 26 STEP 1
```

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

```
ALSO SELECT FOR ITEM=TYPE COMPONENT=  
IN RANGE 36 TO 36 STEP 1
```

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7853.980

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21h2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....
DONT MESH; Either Assume its VOID or its meshed earlier
This section used only if both rad. and He conducti
is used in the model.
He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,
VMESH,292,

VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:53:01 NOV 03, 1995 CP= 7863.540
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=

DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7873.330

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7873.340 TIME= 05:53:11
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1414001 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7875.690 TIME= 05:53:14
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:53:14 NOV 03, 1995 CP= 7875.690
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPE.TRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO.273.15
NEWTON-RAPHSON OPTION.PROGRAM CHOSEN

*** NOTE *** CP= 7877.130 TIME= 05:53:15
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7877.570 TIME= 05:53:16
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19821.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.47040E-12	IXX = .2730E+05	IXX = .2701E+05
YC = -.10514E-01	IYY = .2709E+05	IYY = .2680E+05
ZC = -.12014	IZZ = 9810.	IZZ = 9808.
	IXY = .8715E-08	IXY = .8813E-08
	IYZ = .4597E-10	IYZ = 25.04
	IZX = -.2955E-08	IZX = -.1835E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	129.199

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7916.450 TIME= 05:54:52
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	22.110	.003
11	320	SHELL57	.770	.002
18	2	MATRIX50	5.630	2.815

Time at end of element matrix formulation CP= 7916.45.

HT FLOW CONVERGENCE VALUE= 155.4 CRITERION= .1554

Estimated number of active DOF= 8639.
Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8989.2.
Equation solver maximum pivot= 45.7732646 at node 8097 TEMP.
Equation solver minimum pivot= 0.217830495 at node 3498 TEMP.
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.9
HT FLOW CONVERGENCE VALUE= 463.5 CRITERION= .9967E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.38
HT FLOW CONVERGENCE VALUE= 55.76 CRITERION= .9967E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.35
HT FLOW CONVERGENCE VALUE= 10.39 CRITERION= .9967E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.021
HT FLOW CONVERGENCE VALUE= .6971 CRITERION= .9967E-01
EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2148
HT FLOW CONVERGENCE VALUE= .1726 CRITERION= .9967E-01
EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1647E-01
HT FLOW CONVERGENCE VALUE= .1011E-01 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.370	.002
11	320	SHELL57	.390	.001
18	2	MATRIX50	8.700	4.350

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.370	.000
11	320	SHELL57	.040	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS

ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS

BUFFER SIZE USED= 4096
57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21h2.emat
5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21h2.esav
58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21h2.tri
.047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21h2.dsub
5.297 MB WRITTEN ON RESULTS FILE: glsh21h2.rth

Solve steady-state for initial conditions
with WP surface temperatures from repository
steady-state solution.
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=

IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1417563 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14565.060 TIME= 08:05:38
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14565.510 TIME= 08:05:38
The step data was checked and warning messages were found.
Please review output or errors file (glsh21h2.err) for these warning messages.

*** NOTE *** CP= 14565.510 TIME= 08:05:38
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:05:38 NOV 03, 1995 CP= 14565.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .1036E-01 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2993E-02
HT FLOW CONVERGENCE VALUE= .2305E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .20000E-05 TIME INC = .10000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21h2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP
Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,5,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07
TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1417563 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14856.920 TIME= 08:16:21
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14857.360 TIME= 08:16:22
The step data was checked and warning messages were found.
Please review output or errors file (glsh21h2.err) for these warning messages.

*** NOTE *** CP= 14857.360 TIME= 08:16:22
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:16:22 NOV 03, 1995 CP= 14857.360
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .2305E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2913E-03
HT FLOW CONVERGENCE VALUE= .1762E-03 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1

*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 8
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15132.190 TIME= 08:26:56
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:26:57 NOV 03, 1995 CP= 15132.630
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 139.7 CRITERION= .1698
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 20.29
HT FLOW CONVERGENCE VALUE= 22.89 CRITERION= .9659E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.240
HT FLOW CONVERGENCE VALUE= 3.099 CRITERION= .9659E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2479
HT FLOW CONVERGENCE VALUE= .1556 CRITERION= .9659E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4570E-01
HT FLOW CONVERGENCE VALUE= .3375E-01 CRITERION= .9659E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4

*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 12
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15996.060 TIME= 08:57:48
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:57:49 NOV 03, 1995 CP= 15996.520
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 72.34 CRITERION= .1184
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 8.903
HT FLOW CONVERGENCE VALUE= 9.393 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.741
HT FLOW CONVERGENCE VALUE= 1.246 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8798E-01
HT FLOW CONVERGENCE VALUE= .5669E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16655.400 TIME= 09:21:35
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:21:36 NOV 03, 1995 CP= 16655.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 52.93 CRITERION= .1054
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.072
HT FLOW CONVERGENCE VALUE= 6.086 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.120
HT FLOW CONVERGENCE VALUE= .7779 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5305E-01
HT FLOW CONVERGENCE VALUE= .3324E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17307.940 TIME= 09:44:45
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:44:46 NOV 03, 1995 CP= 17308.390
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 42.74 CRITERION= .9854E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.678
HT FLOW CONVERGENCE VALUE= 4.488 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8214
HT FLOW CONVERGENCE VALUE= .5534 CRITERION= .8883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3855E-01

HT FLOW CONVERGENCE VALUE= .2248E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17968.540 TIME= 10:08:24

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:08:24 NOV 03, 1995 CP= 17968.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.12 CRITERION= .9385E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.815
HT FLOW CONVERGENCE VALUE= 3.525 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6416
HT FLOW CONVERGENCE VALUE= .4201 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2966E-01
HT FLOW CONVERGENCE VALUE= .1633E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18616.860 TIME= 10:31:36

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:31:36 NOV 03, 1995 CP= 18617.300
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 31.37 CRITERION= .9026E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.220
HT FLOW CONVERGENCE VALUE= 2.875 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5210
HT FLOW CONVERGENCE VALUE= .3316 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2368E-01
HT FLOW CONVERGENCE VALUE= .1242E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 27
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19262.710 TIME= 10:54:29

This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:54:30 NOV 03, 1995 CP= 19263.150
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 27.77 CRITERION= .8731E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.782
HT FLOW CONVERGENCE VALUE= 2.375 CRITERION= .8280E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4350

HT FLOW CONVERGENCE VALUE= .2514 CRITERION= .8280E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1946E-01
HT FLOW CONVERGENCE VALUE= .1055E-01 CRITERION= .8280E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 30
*** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19908.870 TIME= 11:17:23
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:17:23 NOV 03, 1995 CP= 19909.310
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 24.68 CRITERION= .8476E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.421
HT FLOW CONVERGENCE VALUE= 1.972 CRITERION= .8110E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3672
HT FLOW CONVERGENCE VALUE= .2001 CRITERION= .8110E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1613E-01
HT FLOW CONVERGENCE VALUE= .8715E-02 CRITERION= .8110E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 33
*** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20586.390 TIME= 11:42:21
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:42:21 NOV 03, 1995 CP= 20586.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.16 CRITERION= .8255E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.135
HT FLOW CONVERGENCE VALUE= 1.687 CRITERION= .7954E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3147
HT FLOW CONVERGENCE VALUE= .1664 CRITERION= .7954E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1360E-01
HT FLOW CONVERGENCE VALUE= .7133E-02 CRITERION= .7954E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 36
*** TIME = .284019E+08 TIME INC = .315576E+07
Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08
TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1156.10879 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 82.3772234 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21276.870 TIME= 12:08:38
This load step will be a static (steady-state) step.

*** NOTE *** CP= 21277.300 TIME= 12:08:38
The step data was checked and warning messages were found.

Please review output or errors file (glsh21h2.err) for these warning messages.

*** NOTE *** CP= 21277.300 TIME= 12:08:38
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:08:38 NOV 03, 1995 CP= 21277.300
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 20.24 CRITERION= .8065E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.920
HT FLOW CONVERGENCE VALUE= 1.480 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2757
HT FLOW CONVERGENCE VALUE= .1425 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1169E-01
HT FLOW CONVERGENCE VALUE= .5945E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 39
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21982.410 TIME= 12:33:47
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:33:47 NOV 03, 1995 CP= 21982.860
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 132.6 CRITERION= .1489
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 12.41
HT FLOW CONVERGENCE VALUE= 5.807 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.398
HT FLOW CONVERGENCE VALUE= .6116 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4851E-01
HT FLOW CONVERGENCE VALUE= .2080E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 42
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22632.310 TIME= 12:56:43
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:56:43 NOV 03, 1995 CP= 22632.760
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 76.56 CRITERION= .9912E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.552
HT FLOW CONVERGENCE VALUE= 2.841 CRITERION= .6316E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6925
HT FLOW CONVERGENCE VALUE= .2753 CRITERION= .6316E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2143E-01
HT FLOW CONVERGENCE VALUE= .8193E-02 CRITERION= .6316E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23297.980 TIME= 13:20:08
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:20:09 NOV 03, 1995 CP= 23298.430
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 54.32 CRITERION= .8092E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.438
HT FLOW CONVERGENCE VALUE= 1.904 CRITERION= .6005E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4478
HT FLOW CONVERGENCE VALUE= .1657 CRITERION= .6005E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1241E-01
HT FLOW CONVERGENCE VALUE= .4463E-02 CRITERION= .6005E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23962.650 TIME= 13:43:43
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:43:43 NOV 03, 1995 CP= 23963.080
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.98 CRITERION= .7085E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.244
HT FLOW CONVERGENCE VALUE= 1.361 CRITERION= .5783E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3139
HT FLOW CONVERGENCE VALUE= .1105 CRITERION= .5783E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8142E-02
HT FLOW CONVERGENCE VALUE= .2786E-02 CRITERION= .5783E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 51

*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24634.060 TIME= 14:07:23
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:07:24 NOV 03, 1995 CP= 24634.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 32.62 CRITERION= .6483E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.523
HT FLOW CONVERGENCE VALUE= 1.022 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2347
HT FLOW CONVERGENCE VALUE= .7707E-01 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5881E-02
HT FLOW CONVERGENCE VALUE= .1964E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25305.320 TIME= 14:31:02
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:31:03 NOV 03, 1995 CP= 25305.760
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 26.07 CRITERION= .6040E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.980
HT FLOW CONVERGENCE VALUE= .7466 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1770
HT FLOW CONVERGENCE VALUE= .5472E-01 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4368E-02
HT FLOW CONVERGENCE VALUE= .1425E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 57
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25962.230 TIME= 14:54:05
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 14:54:05 NOV 03, 1995 CP= 25962.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.05 CRITERION= .5750E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.651
HT FLOW CONVERGENCE VALUE= .5960 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1424
HT FLOW CONVERGENCE VALUE= .4280E-01 CRITERION= .5312E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 59

*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26425.540 TIME= 15:10:42
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:10:42 NOV 03, 1995 CP= 26425.980
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.55 CRITERION= .5381E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.075
HT FLOW CONVERGENCE VALUE= .3698 CRITERION= .5182E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8715E-01
HT FLOW CONVERGENCE VALUE= .2631E-01 CRITERION= .5182E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 61
*** TIME = .284018E+09 TIME INC = .315576E+08
NSUBST,10,40,10,ON
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=

IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 116.985663 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26895.500 TIME= 15:27:26
This load step will be a static (steady-state) step.

*** NOTE *** CP= 26895.940 TIME= 15:27:27
The step data was checked and warning messages were found.
Please review output or errors file (glsh21h2.err) for these warning
messages.

*** NOTE *** CP= 26895.950 TIME= 15:27:27
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:27:27 NOV 03, 1995 CP= 26895.950
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 22
TIME AT END OF THE LOAD STEP.31558E+09
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN

FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 10.10 CRITERION= .5156E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7384
HT FLOW CONVERGENCE VALUE= .2483 CRITERION= .5058E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5670E-01
HT FLOW CONVERGENCE VALUE= .1722E-01 CRITERION= .5058E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 63
*** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27365.020 TIME= 15:44:32
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 15:44:32 NOV 03, 1995 CP= 27365.470
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.84 CRITERION= .4508E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.547
HT FLOW CONVERGENCE VALUE= 1.010 CRITERION= .4021E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1527
HT FLOW CONVERGENCE VALUE= .3435E-01 CRITERION= .4021E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 65
*** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27844.890 TIME= 16:01:41
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:01:42 NOV 03, 1995 CP= 27845.340
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 40.96 CRITERION= .5142E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -8.995
HT FLOW CONVERGENCE VALUE= .9701 CRITERION= .3214E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1353
HT FLOW CONVERGENCE VALUE= .2057E-01 CRITERION= .3214E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 67
*** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28323.760 TIME= 16:18:50
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:18:51 NOV 03, 1995 CP= 28324.210
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 57.10 CRITERION= .6233E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -9.067
HT FLOW CONVERGENCE VALUE= .9958 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1708
HT FLOW CONVERGENCE VALUE= .2263E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 69
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28803.840 TIME= 16:35:59
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:36:00 NOV 03, 1995 CP= 28804.290
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 53.06 CRITERION= .5677E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -8.012
HT FLOW CONVERGENCE VALUE= .7518 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1404
HT FLOW CONVERGENCE VALUE= .1554E-01 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 71
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29279.890 TIME= 16:53:24
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 16:53:24 NOV 03, 1995 CP= 29280.350
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 44.07 CRITERION= .4701E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.697
HT FLOW CONVERGENCE VALUE= .5287 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1030
HT FLOW CONVERGENCE VALUE= .9443E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 73
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29766.520 TIME= 17:11:55
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:11:55 NOV 03, 1995 CP= 29766.960
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 36.29 CRITERION= .3867E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.572
HT FLOW CONVERGENCE VALUE= .3698 CRITERION= .1373E-01

EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7445E-01
HT FLOW CONVERGENCE VALUE= .5666E-02 CRITERION= .1373E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 75
*** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30240.830 TIME= 17:29:00
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:29:00 NOV 03, 1995 CP= 30241.270
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 34.03 CRITERION= .3577E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.954
HT FLOW CONVERGENCE VALUE= .2876 CRITERION= .1128E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6175E-01
HT FLOW CONVERGENCE VALUE= .3953E-02 CRITERION= .1128E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 77
*** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30719.740 TIME= 17:46:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 17:46:10 NOV 03, 1995 CP= 30720.200
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 26.47 CRITERION= .2801E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.976
HT FLOW CONVERGENCE VALUE= .2339 CRITERION= .9340E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4205E-01
HT FLOW CONVERGENCE VALUE= .2255E-02 CRITERION= .9340E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 79
*** TIME = .284018E+10 TIME INC = .315576E+09
NSUBST,10,60,15,ON

Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION
115.610895 .000000000E+00 .000000000E+00 .000000000E+00

1

ALL SELECT FOR ITEM=VOLU COMPONENT=

IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 93.6672402 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31199.750 TIME= 18:03:19
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31200.200 TIME= 18:03:19
The step data was checked and warning messages were found.
Please review output or errors file (glsh21h2.err) for these warning
messages.

*** NOTE *** CP= 31200.200 TIME= 18:03:19

Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:03:19 NOV 03, 1995 CP= 31200.210
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
TIME AT END OF THE LOAD STEP.31558E+10
AUTOMATIC TIME STEPPING. ON
INITIAL NUMBER OF SUBSTEPS. 0
MAXIMUM NUMBER OF SUBSTEPS. 0
MINIMUM NUMBER OF SUBSTEPS. 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS. NO
TRANSIENT (INERTIA) EFFECTS. OFF
TERMINATE ANALYSIS IF NOT CONVERGED. YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS. NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 21.12 CRITERION= .2246E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.223
HT FLOW CONVERGENCE VALUE= .1624 CRITERION= .7808E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2971E-01
HT FLOW CONVERGENCE VALUE= .1345E-02 CRITERION= .7808E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 81
*** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31669.860 TIME= 18:20:04
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:20:05 NOV 03, 1995 CP= 31670.310
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 102.4 CRITERION= .1023
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -14.01
HT FLOW CONVERGENCE VALUE= .4032 CRITERION= .2424E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9465E-01
HT FLOW CONVERGENCE VALUE= .1570E-02 CRITERION= .2424E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 83
*** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32131.180 TIME= 18:36:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:36:41 NOV 03, 1995 CP= 32131.620

FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 39.62 CRITERION= .3965E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.619
HT FLOW CONVERGENCE VALUE= .4801E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9090E-02
HT FLOW CONVERGENCE VALUE= .1018E-03 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 85
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32596.230 TIME= 18:53:20
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 18:53:21 NOV 03, 1995 CP= 32596.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.25 CRITERION= .2129E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.460
HT FLOW CONVERGENCE VALUE= .3006E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6137E-02
HT FLOW CONVERGENCE VALUE= .5674E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 87
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33055.970 TIME= 19:09:55
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:09:55 NOV 03, 1995 CP= 33056.410
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.27 CRITERION= .1530E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.803
HT FLOW CONVERGENCE VALUE= .1875E-01 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3873E-02
HT FLOW CONVERGENCE VALUE= .2954E-04 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 89
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33520.610 TIME= 19:26:34
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:26:34 NOV 03, 1995 CP= 33521.050
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.80 CRITERION= .1482E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.732
HT FLOW CONVERGENCE VALUE= .1516E-01 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3190E-02
HT FLOW CONVERGENCE VALUE= .2019E-04 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 91
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33985.390 TIME= 19:43:13
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:43:14 NOV 03, 1995 CP= 33985.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 12.58 CRITERION= .1260E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.486
HT FLOW CONVERGENCE VALUE= .1077E-01 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2292E-02
HT FLOW CONVERGENCE VALUE= .1200E-04 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 93
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34450.070 TIME= 19:59:52
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 19:59:52 NOV 03, 1995 CP= 34450.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.98 CRITERION= .1099E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.303
HT FLOW CONVERGENCE VALUE= .7846E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1686E-02
HT FLOW CONVERGENCE VALUE= .7310E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 95
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34910.280 TIME= 20:16:26
This load step will be a static (steady-state) step.

1
***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:16:26 NOV 03, 1995 CP= 34910.730
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.638 CRITERION= .9650E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.148
HT FLOW CONVERGENCE VALUE= .5747E-02 CRITERION= .4900E-03

EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1247E-02
HT FLOW CONVERGENCE VALUE= .4478E-05 CRITERION= .4900E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 97
*** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35375.120 TIME= 20:33:05
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:33:05 NOV 03, 1995 CP= 35375.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 8.215 CRITERION= .8225E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9835
HT FLOW CONVERGENCE VALUE= .4090E-02 CRITERION= .4042E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8944E-03
HT FLOW CONVERGENCE VALUE= .2660E-05 CRITERION= .4042E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 99
*** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 35832.630

Create element contour plots of solution results

Sort through solution results for time of max temp.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:49:34 NOV 03, 1995 CP= 35832.630
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME
2 NSOL 7655 TEMP peakgls 71.31 .3156E+11 156.2 .2525E+09

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= 252460832.

***** ROUTINE COMPLETED ***** CP = 35832.950

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 20:49:37 NOV 03, 1995 CP= 35832.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM

27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .000000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .25246E+09

SET COMMAND GOT LOAD STEP= 20 SUBSTEP= 1 CUMULATIVE ITERATION= 59
TIME/FREQUENCY= .25246E+09

TITLE=
DHLW WP at Time of Peak Temp. (8.000001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (8.000001 years)

*** WARNING *** CP= 35872.870 TIME= 20:50:31
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35872.900 TIME= 20:50:31
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 51
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.

- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 115.51 BY .33372 TO 157.89

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 35921.360 TIME= 20:51:25
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35921.390 TIME= 20:51:25
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 63
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 115.51 BY .33372 TO 157.89

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 35969.160 TIME= 20:52:20
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35969.190 TIME= 20:52:20
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 115.51 BY .33372 TO 157.89

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 35988.670 TIME= 20:52:42
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35988.700 TIME= 20:52:42
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 81
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 115.51 BY .33372 TO 157.89

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 36036.470 TIME= 20:53:38
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 36036.500 TIME= 20:53:38
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 36044.870

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:47 NOV 03, 1995 CP= 36044.870
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

 Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
 VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
 VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
 VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
 VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
 VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
 VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
 VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
 VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
 VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7952 TEMP	t94i045	71.31	.3156E+11	152.0	.2840E+09
3 NSOL	7726 TEMP	t94o045	71.31	.3156E+11	152.1	.2840E+09
4 NSOL	7730 TEMP	h94i045	71.34	.3156E+11	157.6	.2525E+09
5 NSOL	7654 TEMP	c94i045	71.32	.3156E+11	156.5	.2525E+09
6 NSOL	7686 TEMP	h94o045	71.25	.3156E+11	148.6	.2840E+09
7 NSOL	7667 TEMP	s94i045	71.14	.3156E+11	134.8	.3156E+09
8 NSOL	7929 TEMP	s94o045	71.13	.3156E+11	134.7	.3156E+09
9 NSOL	8013 TEMP	i94i045	57.06	31.56	125.2	.3156E+09
10 NSOL	8030 TEMP	i94o045	56.72	31.56	125.0	.3156E+09
11 NSOL	8145 TEMP	o94o045	56.36	31.56	124.8	.3156E+09

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:52 NOV 03, 1995 CP= 36047.090
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.269	125.331	134.845	131.732	115.725	87.7896
.20000E-05	125.266	125.328	134.843	131.729	115.723	87.7871

31.558	125.266	125.328	134.843	131.729	115.723	87.7870
.31558E+07	133.898	133.959	143.446	140.701	125.449	98.6058
.63116E+07	137.044	137.103	146.412	143.851	129.143	103.171
.94673E+07	138.905	138.963	148.074	145.645	131.404	106.203
.12623E+08	140.176	140.232	149.147	146.824	132.996	108.489
.15779E+08	141.112	141.167	149.893	147.661	134.203	110.325
.18935E+08	141.835	141.889	150.437	148.282	135.161	111.859
.22090E+08	142.413	142.466	150.845	148.758	135.946	113.173
.25246E+08	142.889	142.941	151.164	149.137	136.606	114.315
.28402E+08	143.281	143.332	151.409	149.436	137.162	115.316
.31558E+08	143.622	143.672	151.613	149.689	137.652	116.217
.63115E+08	145.952	145.996	153.004	151.399	140.954	122.287
.94673E+08	147.533	147.574	154.097	152.655	143.035	125.803
.12623E+09	148.942	148.981	155.213	153.876	144.762	128.409
.15779E+09	150.062	150.099	156.125	154.862	146.109	130.381
.18935E+09	150.927	150.963	156.820	155.615	147.150	131.924
.22090E+09	151.533	151.569	157.276	156.117	147.899	133.105
.25246E+09	151.987	152.022	157.595	156.476	148.477	134.069
.28402E+09	152.037	152.071	157.509	156.421	148.623	134.571
.31558E+09	151.858	151.891	157.198	156.136	148.524	134.809
.63115E+09	146.427	146.453	150.617	149.726	143.636	132.701
.94673E+09	138.522	138.542	141.798	141.020	136.096	127.311
.12623E+10	130.355	130.372	132.923	132.242	128.241	121.150
.15779E+10	123.038	123.051	125.062	124.472	121.212	115.467
.18935E+10	116.863	116.873	118.472	117.965	115.296	110.618
.22090E+10	111.685	111.694	112.975	112.542	110.349	106.520
.25246E+10	107.038	107.045	108.082	107.711	105.896	102.739
.28402E+10	103.292	103.298	104.146	103.829	102.316	99.6940
.31558E+10	100.243	100.248	100.950	100.678	99.4073	97.2098
.63115E+10	86.6376	86.6390	86.8467	86.7528	86.3496	85.6599
.94673E+10	82.0974	82.0984	82.2359	82.1704	81.8971	81.4311
.12623E+11	79.6716	79.6724	79.7815	79.7281	79.5083	79.1344
.15779E+11	77.8928	77.8934	77.9822	77.9379	77.7573	77.4505
.18935E+11	76.1800	76.1805	76.2529	76.2161	76.0673	75.8150
.22090E+11	74.7097	74.7101	74.7694	74.7388	74.6162	74.4084
.25246E+11	73.4191	73.4194	73.4679	73.4425	73.3414	73.1702
.28402E+11	72.2812	72.2815	72.3213	72.3002	72.2167	72.0756
.31558E+11	71.3057	71.3059	71.3386	71.3211	71.2521	71.1356

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:52 NOV 03, 1995 CP= 36047.100
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP	8013 TEMP	8030 TEMP	8145 TEMP
	s94o045	1941045	194o045	o94o045
.10000E-05	87.6169	57.0602	56.7226	56.3617
.20000E-05	87.6144	57.0592	56.7216	56.3606
31.558	87.6143	57.0589	56.7214	56.3604
.31558E+07	98.4417	72.0724	71.7468	71.3968
.63116E+07	103.013	78.6349	78.3194	77.9796
.94673E+07	106.050	83.0915	82.7849	82.4544
.12623E+08	108.340	86.5125	86.2141	85.8921
.15779E+08	110.181	89.2975	89.0066	88.6925
.18935E+08	111.719	91.6459	91.3618	91.0550
.22090E+08	113.037	93.6747	93.3969	93.0968
.25246E+08	114.181	95.4422	95.1707	94.8767
.28402E+08	115.185	97.0010	96.7352	96.4469
.31558E+08	116.089	98.4059	98.1454	97.8623
.63115E+08	122.176	107.654	107.429	107.184
.94673E+08	125.701	112.722	112.515	112.291
.12623E+09	128.312	116.274	116.078	115.866
.15779E+09	130.289	118.907	118.719	118.516
.18935E+09	131.835	120.961	120.779	120.583

.22090E+09	133.018	122.560	122.383	122.193
.25246E+09	133.984	123.886	123.714	123.529
.28402E+09	134.489	124.687	124.520	124.340
.31558E+09	134.728	125.187	125.024	124.848
.63115E+09	132.637	124.971	124.841	124.701
.94673E+09	127.259	120.882	120.777	120.665
.12623E+10	121.108	115.742	115.657	115.566
.15779E+10	115.433	110.912	110.843	110.769
.18935E+10	110.590	106.781	106.725	106.664
.22090E+10	106.497	103.288	103.242	103.192
.25246E+10	102.720	100.001	99.9631	99.9219
.28402E+10	99.6780	97.3691	97.3374	97.3032
.31558E+10	97.1964	95.2260	95.1995	95.1709
.63115E+10	85.6556	84.9807	84.9724	84.9635
.94673E+10	81.4282	80.9565	80.9509	80.9449
.12623E+11	79.1320	78.7463	78.7418	78.7370
.15779E+11	77.4486	77.1277	77.1240	77.1201
.18935E+11	75.8134	75.5459	75.5428	75.5396
.22090E+11	74.4071	74.1843	74.1818	74.1791
.25246E+11	73.1692	72.9837	72.9816	72.9794
.28402E+11	72.0747	71.9203	71.9187	71.9168
.31558E+11	71.1349	71.0064	71.0050	71.0035

 * Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 36047.310 TIME= 20:53:52
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045
 VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045
 VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045
 VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045
 VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045
 VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045
 VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045
 VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7947 TEMP	t04i045	71.30	.3156E+11	151.7	.2840E+09
3	NSOL	7718 TEMP	t04o045	71.30	.3156E+11	151.7	.2840E+09
4	NSOL	7720 TEMP	h04i045	71.33	.3156E+11	157.4	.2525E+09
5	NSOL	7642 TEMP	c04i045	71.31	.3156E+11	156.1	.2525E+09
6	NSOL	7679 TEMP	h04o045	71.25	.3156E+11	148.3	.2840E+09
7	NSOL	7662 TEMP	s04i045	71.13	.3156E+11	134.4	.3156E+09
8	NSOL	7927 TEMP	s04o045	71.13	.3156E+11	134.3	.3156E+09
9	NSOL	8008 TEMP	i04i045	55.99	31.56	125.0	.3156E+09
10	NSOL	8027 TEMP	i04o045	55.65	31.56	124.8	.3156E+09
11	NSOL	8142 TEMP	o04o045	55.29	31.56	124.6	.3156E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:54 NOV 03, 1995 CP= 36049.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.176	124.242	133.853	130.435	114.518	86.3213
.20000E-05	124.174	124.240	133.851	130.433	114.516	86.3190
31.558	124.174	124.240	133.851	130.433	114.516	86.3189
.31558E+07	132.984	133.049	142.661	139.638	124.469	97.3684
.63116E+07	136.207	136.271	145.714	142.890	128.262	102.039
.94673E+07	138.121	138.183	147.432	144.753	130.590	105.143
.12623E+08	139.432	139.493	148.548	145.986	132.233	107.486
.15779E+08	140.401	140.461	149.329	146.865	133.482	109.370
.18935E+08	141.153	141.211	149.901	147.523	134.475	110.944
.22090E+08	141.755	141.812	150.334	148.030	135.290	112.293
.25246E+08	142.252	142.308	150.674	148.437	135.975	113.465
.28402E+08	142.663	142.718	150.937	148.760	136.554	114.493
.31558E+08	143.021	143.075	151.157	149.034	137.064	115.418
.63115E+08	145.459	145.506	152.649	150.877	140.491	121.639
.94673E+08	147.092	147.136	153.790	152.197	142.631	125.227
.12623E+09	148.534	148.576	154.936	153.457	144.395	127.877
.15779E+09	149.677	149.718	155.869	154.470	145.767	129.880
.18935E+09	150.560	150.600	156.580	155.244	146.827	131.447
.22090E+09	151.181	151.219	157.048	155.763	147.591	132.646
.25246E+09	151.648	151.685	157.377	156.136	148.183	133.627
.28402E+09	151.707	151.743	157.298	156.092	148.337	134.143
.31558E+09	151.536	151.572	156.993	155.816	148.247	134.392
.63115E+09	146.159	146.187	150.443	149.462	143.408	132.364
.94673E+09	138.288	138.311	141.638	140.789	135.896	127.026
.12623E+10	130.151	130.168	132.776	132.038	128.064	120.907
.15779E+10	122.859	122.873	124.928	124.292	121.055	115.259
.18935E+10	116.707	116.718	118.352	117.808	115.160	110.441
.22090E+10	111.551	111.560	112.870	112.406	110.231	106.369
.25246E+10	106.921	106.929	107.988	107.593	105.793	102.610
.28402E+10	103.191	103.197	104.064	103.726	102.227	99.5836
.31558E+10	100.156	100.161	100.878	100.589	99.3296	97.1149
.63115E+10	86.6057	86.6072	86.8195	86.7203	86.3210	85.6263
.94673E+10	82.0747	82.0757	82.2162	82.1472	81.8765	81.4073
.12623E+11	79.6528	79.6536	79.7651	79.7089	79.4913	79.1148
.15779E+11	77.8770	77.8777	77.9684	77.9218	77.7430	77.4342
.18935E+11	76.1667	76.1673	76.2413	76.2026	76.0553	75.8013
.22090E+11	74.6986	74.6991	74.7596	74.7274	74.6061	74.3970
.25246E+11	73.4098	73.4102	73.4597	73.4330	73.3330	73.1607
.28402E+11	72.2735	72.2738	72.3144	72.2922	72.2097	72.0676
.31558E+11	71.2992	71.2994	71.3329	71.3144	71.2462	71.1289

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:54 NOV 03, 1995 CP= 36049.260
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	86.1522	55.9912	55.6464	55.2932
.20000E-05	86.1499	55.9902	55.6454	55.2923
31.558	86.1498	55.9900	55.6452	55.2921
.31558E+07	97.2074	71.2469	70.9148	70.5716
.63116E+07	101.884	77.9094	77.5879	77.2545
.94673E+07	104.994	82.4316	82.1193	81.7949

.12623E+08	107.341	85.9019	85.5981	85.2818
.15779E+08	109.229	88.7263	88.4301	88.1215
.18935E+08	110.806	91.1072	90.8180	90.5165
.22090E+08	112.159	93.1636	92.8809	92.5858
.25246E+08	113.334	94.9548	94.6784	94.3893
.28402E+08	114.364	96.5339	96.2634	95.9799
.31558E+08	115.292	97.9568	97.6917	97.4133
.63115E+08	121.530	107.310	107.081	106.841
.94673E+08	125.127	112.425	112.215	111.994
.12623E+09	127.782	116.005	115.806	115.597
.15779E+09	129.789	118.657	118.466	118.265
.18935E+09	131.359	120.725	120.540	120.347
.22090E+09	132.561	122.335	122.155	121.968
.25246E+09	133.544	123.670	123.496	123.314
.28402E+09	134.062	124.479	124.310	124.132
.31558E+09	134.313	124.985	124.819	124.646
.63115E+09	132.301	124.811	124.679	124.541
.94673E+09	126.975	120.748	120.641	120.530
.12623E+10	120.865	115.627	115.541	115.451
.15779E+10	115.226	110.813	110.743	110.670
.18935E+10	110.414	106.697	106.640	106.580
.22090E+10	106.347	103.216	103.169	103.120
.25246E+10	102.591	99.9397	99.9010	99.8605
.28402E+10	99.5679	97.3164	97.2842	97.2505
.31558E+10	97.1018	95.1807	95.1537	95.1255
.63115E+10	85.6221	84.9645	84.9560	84.9473
.94673E+10	81.4045	80.9449	80.9392	80.9333
.12623E+11	79.1125	78.7368	78.7322	78.7275
.15779E+11	77.4323	77.1197	77.1160	77.1121
.18935E+11	75.7998	75.5392	75.5361	75.5329
.22090E+11	74.3957	74.1786	74.1761	74.1735
.25246E+11	73.1596	72.9790	72.9769	72.9747
.28402E+11	72.0668	71.9164	71.9147	71.9129
.31558E+11	71.1282	71.0031	71.0017	71.0002

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36049.470 TIME= 20:53:55
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	63 TEMP	t01i135	71.30	.3156E+11	151.7	.2840E+09
3	NSOL	20 TEMP	t01o135	71.30	.3156E+11	151.7	.2840E+09

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4 NSOL 22 TEMP h01i135 71.33 .3156E+11 157.4 .2525E+09
5 NSOL 1 TEMP c01i135 71.31 .3156E+11 156.1 .2525E+09
6 NSOL 11 TEMP h01o135 71.25 .3156E+11 148.3 .2840E+09
7 NSOL 6 TEMP s01i135 71.13 .3156E+11 134.4 .3156E+09
8 NSOL 58 TEMP s01o135 71.13 .3156E+11 134.3 .3156E+09
9 NSOL 84 TEMP i01i135 55.90 31.56 125.0 .3156E+09
10 NSOL 106 TEMP i01o135 55.56 31.56 124.8 .3156E+09
11 NSOL 124 TEMP o01o135 55.21 31.56 124.6 .3156E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:53:57 NOV 03, 1995 CP= 36051.400
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.169	124.235	133.833	130.403	114.475	86.2664
.20000E-05	124.167	124.233	133.830	130.401	114.472	86.2641
31.558	124.167	124.233	133.830	130.401	114.472	86.2641
.31558E+07	132.978	133.043	142.642	139.608	124.429	97.3170
.63116E+07	136.201	136.265	145.696	142.861	128.223	101.990
.94673E+07	138.115	138.177	147.415	144.726	130.552	105.096
.12623E+08	139.427	139.487	148.531	145.959	132.197	107.441
.15779E+08	140.396	140.456	149.313	146.839	133.447	109.326
.18935E+08	141.148	141.206	149.885	147.497	134.441	110.901
.22090E+08	141.750	141.807	150.318	148.006	135.256	112.251
.25246E+08	142.248	142.304	150.659	148.413	135.942	113.424
.28402E+08	142.659	142.714	150.922	148.736	136.522	114.453
.31558E+08	143.017	143.071	151.143	149.011	137.033	115.379
.63115E+08	145.455	145.502	152.637	150.857	140.465	121.605
.94673E+08	147.089	147.133	153.779	152.179	142.607	125.197
.12623E+09	148.531	148.573	154.926	153.440	144.372	127.849
.15779E+09	149.674	149.715	155.859	154.454	145.745	129.853
.18935E+09	150.557	150.597	156.570	155.229	146.806	131.421
.22090E+09	151.178	151.216	157.039	155.748	147.571	132.621
.25246E+09	151.645	151.682	157.368	156.122	148.163	133.602
.28402E+09	151.704	151.741	157.290	156.078	148.318	134.119
.31558E+09	151.533	151.569	156.985	155.802	148.228	134.368
.63115E+09	146.157	146.185	150.436	149.451	143.393	132.345
.94673E+09	138.287	138.309	141.632	140.780	135.884	127.011
.12623E+10	130.149	130.167	132.771	132.030	128.054	120.894
.15779E+10	122.858	122.872	124.924	124.286	121.047	115.249
.18935E+10	116.706	116.717	118.349	117.803	115.153	110.432
.22090E+10	111.550	111.559	112.867	112.402	110.225	106.362
.25246E+10	106.920	106.928	107.986	107.589	105.788	102.604
.28402E+10	103.190	103.196	104.062	103.723	102.223	99.5784
.31558E+10	100.155	100.160	100.877	100.586	99.3260	97.1105
.63115E+10	86.6054	86.6069	86.8190	86.7194	86.3198	85.6248
.94673E+10	82.0745	82.0755	82.2158	82.1466	81.8757	81.4063
.12623E+11	79.6527	79.6535	79.7648	79.7084	79.4907	79.1140
.15779E+11	77.8769	77.8775	77.9682	77.9214	77.7425	77.4335
.18935E+11	76.1666	76.1672	76.2411	76.2022	76.0549	75.8007
.22090E+11	74.6985	74.6990	74.7594	74.7272	74.6057	74.3965
.25246E+11	73.4097	73.4101	73.4596	73.4328	73.3327	73.1603
.28402E+11	72.2734	72.2737	72.3143	72.2921	72.2094	72.0673
.31558E+11	71.2991	71.2994	71.3327	71.3143	71.2460	71.1287

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:53:57 NOV 03, 1995 CP= 36051.410
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP	84 TEMP	106 TEMP	124 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	86.0972	55.9057	55.5607	55.2064
.20000E-05	86.0949	55.9047	55.5597	55.2054
.31558E+07	86.0949	55.9045	55.5595	55.2052
.63116E+07	97.1560	71.1715	70.8392	70.4950
.12623E+08	101.835	77.8393	77.5175	77.1831
.15779E+08	104.946	82.3653	82.0528	81.7273
.18935E+08	107.295	85.8387	85.5346	85.2174
.22090E+08	109.184	88.6657	88.3693	88.0597
.25246E+08	110.763	91.0489	90.7595	90.4570
.28402E+08	112.117	93.1072	92.8243	92.5283
.31558E+08	113.293	94.9002	94.6236	94.3336
.63115E+08	114.324	96.4809	96.2102	95.9258
.94673E+08	115.253	97.9052	97.6399	97.3606
.12623E+09	121.496	107.268	107.039	106.797
.15779E+09	125.097	112.387	112.176	111.955
.18935E+09	127.754	115.969	115.770	115.561
.22090E+09	129.762	118.623	118.432	118.231
.25246E+09	131.333	120.693	120.508	120.314
.28402E+09	132.536	122.304	122.124	121.936
.31558E+09	133.519	123.640	123.466	123.283
.63115E+09	134.038	124.450	124.281	124.102
.94673E+09	134.290	124.957	124.791	124.617
.12623E+10	132.282	124.788	124.656	124.518
.15779E+10	126.960	120.729	120.623	120.511
.18935E+10	120.853	115.612	115.525	115.435
.22090E+10	115.215	110.801	110.731	110.657
.25246E+10	110.405	106.687	106.630	106.570
.28402E+10	106.339	103.208	103.161	103.111
.31558E+10	102.585	99.9324	99.8937	99.8530
.63115E+10	99.5627	97.3102	97.2780	97.2442
.94673E+10	97.0974	95.1755	95.1484	95.1202
.12623E+11	85.6207	84.9628	84.9543	84.9455
.15779E+11	81.4035	80.9437	80.9380	80.9321
.18935E+11	79.1117	78.7358	78.7312	78.7265
.22090E+11	77.4316	77.1189	77.1152	77.1113
.25246E+11	75.7992	75.5385	75.5354	75.5322
.28402E+11	74.3952	74.1781	74.1756	74.1729
.31558E+11	73.1593	72.9785	72.9764	72.9743
	72.0664	71.9160	71.9143	71.9125
	71.1280	71.0028	71.0014	70.9999

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 36051.620 TIME= 20:53:57
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045

VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045

VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045

VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045

VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045

VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	7951 TEMP	tb4i045	71.17	.3156E+11	140.4	.3156E+09
3 NSOL	7722 TEMP	tb4o045	71.17	.3156E+11	140.4	.3156E+09
4 NSOL	7724 TEMP	hb4i045	71.15	.3156E+11	137.4	.3156E+09
5 NSOL	7650 TEMP	cb4i045	71.13	.3156E+11	135.3	.3156E+09
6 NSOL	7682 TEMP	hb4o045	71.11	.3156E+11	133.0	.3156E+09
7 NSOL	7666 TEMP	sb4i045	71.08	.3156E+11	130.2	.3156E+09
8 NSOL	7928 TEMP	sb4o045	71.08	.3156E+11	130.1	.3156E+09
9 NSOL	8012 TEMP	ib4i045	53.13	31.56	123.8	.6312E+09
10 NSOL	8029 TEMP	ib4o045	52.85	31.56	123.7	.6312E+09
11 NSOL	8144 TEMP	ob4o045	52.56	31.56	123.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:59 NOV 03, 1995 CP= 36053.550
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	98.4838	98.4056	92.2130	87.4364	81.8180	75.3218
.20000E-05	98.4808	98.4026	92.2102	87.4339	81.8158	75.3197
31.558	98.4807	98.4025	92.2101	87.4338	81.8156	75.3196
.31558E+07	109.133	109.057	103.112	98.6467	93.4200	87.3480
.63116E+07	113.438	113.364	107.620	103.353	98.3690	92.5669
.94673E+07	116.214	116.141	110.574	106.466	101.675	96.0927
.12623E+08	118.256	118.185	112.777	108.806	104.180	98.7864
.15779E+08	119.865	119.796	114.531	110.681	106.200	100.973
.18935E+08	121.186	121.119	115.986	112.244	107.892	102.814
.22090E+08	122.303	122.237	117.224	113.581	109.346	104.402
.25246E+08	123.262	123.197	118.295	114.740	110.609	105.786
.28402E+08	124.093	124.030	119.228	115.754	111.719	107.006
.31558E+08	124.837	124.775	120.067	116.666	112.719	108.108
.63115E+08	129.828	129.774	125.692	122.785	119.418	115.476
.94673E+08	132.783	132.733	128.973	126.318	123.247	119.647
.12623E+09	135.045	134.997	131.435	128.935	126.046	122.656
.15779E+09	136.773	136.726	133.305	130.914	128.155	124.913
.18935E+09	138.118	138.073	134.763	132.459	129.802	126.678
.22090E+09	139.126	139.083	135.870	133.639	131.068	128.042
.25246E+09	139.937	139.895	136.767	134.601	132.105	129.167
.28402E+09	140.294	140.253	137.204	135.095	132.666	129.806
.31558E+09	140.394	140.353	137.379	135.322	132.953	130.164
.63115E+09	137.131	137.099	134.735	133.088	131.188	128.959
.94673E+09	130.838	130.813	128.918	127.575	126.024	124.211
.12623E+10	123.967	123.946	122.420	121.319	120.043	118.558
.15779E+10	117.723	117.707	116.473	115.568	114.516	113.297
.18935E+10	112.435	112.422	111.419	110.673	109.805	108.801
.22090E+10	107.992	107.981	107.162	106.546	105.826	104.996
.25246E+10	103.940	103.931	103.258	102.745	102.145	101.455
.28402E+10	100.682	100.675	100.117	99.6876	99.1848	98.6076
.31558E+10	98.0316	98.0256	97.5584	97.1967	96.7724	96.2860
.63115E+10	85.9069	85.9051	85.7598	85.6434	85.5059	85.3493
.94673E+10	81.5949	81.5937	81.4959	81.4166	81.3227	81.2158
.12623E+11	79.2645	79.2635	79.1852	79.1212	79.0454	78.9592

.15779E+11	77.5564	77.5556	77.4915	77.4388	77.3763	77.3053
.18935E+11	75.9014	75.9008	75.8481	75.8046	75.7529	75.6943
.22090E+11	74.4791	74.4785	74.4352	74.3993	74.3566	74.3082
.25246E+11	73.2281	73.2277	73.1920	73.1624	73.1271	73.0871
.28402E+11	72.1230	72.1227	72.0933	72.0688	72.0396	72.0065
.31558E+11	71.1746	71.1743	71.1500	71.1298	71.1056	71.0783

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:53:59 NOV 03, 1995 CP= 36053.560
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP	8012 TEMP	8029 TEMP	8144 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	75.2508	53.1284	52.8524	52.5643
.20000E-05	75.2487	53.1276	52.8515	52.5635
31.558	75.2486	53.1274	52.8513	52.5633
.31558E+07	87.2819	68.4761	68.2093	67.9323
.63116E+07	92.5038	75.2371	74.9784	74.7104
.94673E+07	96.0322	79.8478	79.5963	79.3362
.12623E+08	98.7281	83.3983	83.1534	82.9004
.15779E+08	100.917	86.2954	86.0566	85.8101
.18935E+08	102.759	88.7427	88.5094	88.2689
.22090E+08	104.348	90.8599	90.6317	90.3967
.25246E+08	105.734	92.7067	92.4832	92.2532
.28402E+08	106.956	94.3368	94.1180	93.8926
.31558E+08	108.058	95.8067	95.5922	95.3711
.63115E+08	115.434	105.483	105.298	105.107
.94673E+08	119.608	110.766	110.595	110.421
.12623E+09	122.620	114.449	114.287	114.123
.15779E+09	124.878	117.174	117.019	116.861
.18935E+09	126.645	119.299	119.149	118.997
.22090E+09	128.010	120.957	120.812	120.664
.25246E+09	129.136	122.334	122.193	122.050
.28402E+09	129.775	123.181	123.043	122.904
.31558E+09	130.134	123.719	123.585	123.449
.63115E+09	128.935	123.802	123.695	123.586
.94673E+09	124.191	119.926	119.839	119.752
.12623E+10	118.542	114.952	114.882	114.811
.15779E+10	113.284	110.258	110.201	110.143
.18935E+10	108.790	106.239	106.192	106.145
.22090E+10	104.987	102.837	102.799	102.760
.25246E+10	101.447	99.6238	99.5925	99.5604
.28402E+10	98.6014	97.0524	97.0264	96.9997
.31558E+10	96.2807	94.9585	94.9367	94.9144
.63115E+10	85.3476	84.8935	84.8867	84.8797
.94673E+10	81.2147	80.8967	80.8921	80.8874
.12623E+11	78.9582	78.6980	78.6943	78.6905
.15779E+11	77.3045	77.0879	77.0848	77.0817
.18935E+11	75.6937	75.5129	75.5104	75.5078
.22090E+11	74.3077	74.1570	74.1549	74.1528
.25246E+11	73.0866	72.9611	72.9594	72.9577
.28402E+11	72.0062	71.9017	71.9003	71.8989
.31558E+11	71.0780	70.9909	70.9898	70.9886

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36053.770 TIME= 20:53:59
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135
 VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	1033 TEMP	t01i135	71.17	.3156E+11	140.4	.3156E+09
3 NSOL	733 TEMP	t01o135	71.17	.3156E+11	140.3	.3156E+09
4 NSOL	735 TEMP	h01i135	71.15	.3156E+11	137.4	.3156E+09
5 NSOL	679 TEMP	c01i135	71.13	.3156E+11	135.3	.3156E+09
6 NSOL	704 TEMP	h01o135	71.11	.3156E+11	132.9	.3156E+09
7 NSOL	691 TEMP	s01i135	71.08	.3156E+11	130.1	.3156E+09
8 NSOL	1018 TEMP	s01o135	71.08	.3156E+11	130.1	.3156E+09
9 NSOL	1292 TEMP	i01i135	53.05	31.56	123.8	.6312E+09
10 NSOL	1307 TEMP	i01o135	52.77	31.56	123.7	.6312E+09
11 NSOL	2078 TEMP	o01o135	52.48	31.56	123.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:01 NOV 03, 1995 CP= 36055.710
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	98.4711	98.3927	92.1882	87.4014	81.7738	75.2684
.20000E-05	98.4681	98.3897	92.1855	87.3989	81.7715	75.2664
31.558	98.4679	98.3895	92.1854	87.3988	81.7714	75.2662
.31558E+07	109.122	109.045	103.089	98.6143	93.3790	87.2983
.63116E+07	113.427	113.353	107.598	103.322	98.3300	92.5196
.94673E+07	116.203	116.131	110.553	106.436	101.637	96.0473
.12623E+08	118.246	118.175	112.756	108.777	104.144	98.7427
.15779E+08	119.856	119.787	114.512	110.654	106.165	100.931
.18935E+08	121.177	121.110	115.967	112.217	107.858	102.773
.22090E+08	122.294	122.228	117.206	113.555	109.313	104.362
.25246E+08	123.253	123.189	118.277	114.714	110.577	105.748
.28402E+08	124.085	124.022	119.211	115.729	111.688	106.969
.31558E+08	124.829	124.767	120.049	116.642	112.689	108.071
.63115E+08	129.821	129.767	125.677	122.764	119.392	115.445
.94673E+08	132.777	132.726	128.960	126.299	123.224	119.619
.12623E+09	135.040	134.992	131.423	128.917	126.024	122.629
.15779E+09	136.767	136.721	133.293	130.897	128.134	124.887
.18935E+09	138.112	138.068	134.752	132.443	129.782	126.654
.22090E+09	139.121	139.078	135.858	133.623	131.048	128.019
.25246E+09	139.932	139.890	136.756	134.585	132.086	129.144
.28402E+09	140.289	140.248	137.194	135.081	132.647	129.783

.31558E+09	140.389	140.349	137.369	135.308	132.935	130.142
.63115E+09	137.127	137.095	134.727	133.076	131.174	128.941
.94673E+09	130.835	130.810	128.911	127.566	126.012	124.196
.12623E+10	123.964	123.944	122.414	121.311	120.033	118.546
.15779E+10	117.720	117.704	116.468	115.561	114.508	113.288
.18935E+10	112.433	112.420	111.415	110.668	109.798	108.793
.22090E+10	107.990	107.980	107.159	106.541	105.820	104.990
.25246E+10	103.939	103.930	103.255	102.741	102.140	101.449
.28402E+10	100.681	100.674	100.115	99.6844	99.1808	98.6028
.31558E+10	98.0306	98.0246	97.5564	97.1940	96.7690	96.2819
.63115E+10	85.9065	85.9047	85.7591	85.6425	85.5048	85.3479
.94673E+10	81.5947	81.5935	81.4955	81.4160	81.3219	81.2149
.12623E+11	79.2643	79.2633	79.1848	79.1207	79.0447	78.9584
.15779E+11	77.5563	77.5555	77.4912	77.4384	77.3758	77.3047
.18935E+11	75.9013	75.9006	75.8478	75.8043	75.7525	75.6938
.22090E+11	74.4790	74.4784	74.4350	74.3990	74.3563	74.3078
.25246E+11	73.2280	73.2276	73.1918	73.1621	73.1268	73.0867
.28402E+11	72.1230	72.1226	72.0932	72.0686	72.0394	72.0063
.31558E+11	71.1745	71.1742	71.1499	71.1296	71.1054	71.0780

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:01 NOV 03, 1995 CP= 36055.720
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	75.1973	53.0481	52.7720	52.4836
.20000E-05	75.1952	53.0473	52.7712	52.4828
31.558	75.1951	53.0471	52.7709	52.4826
.31558E+07	87.2321	68.4051	68.1382	67.8609
.63116E+07	92.4565	75.1709	74.9121	74.6439
.94673E+07	95.9867	79.7851	79.5335	79.2732
.12623E+08	98.6843	83.3385	83.0935	82.8404
.15779E+08	100.874	86.2381	85.9992	85.7526
.18935E+08	102.718	88.6875	88.4541	88.2135
.22090E+08	104.309	90.8066	90.5783	90.3432
.25246E+08	105.696	92.6550	92.4314	92.2013
.28402E+08	106.918	94.2867	94.0677	93.8422
.31558E+08	108.021	95.7579	95.5433	95.3221
.63115E+08	115.402	105.443	105.257	105.067
.94673E+08	119.580	110.730	110.559	110.385
.12623E+09	122.593	114.415	114.254	114.089
.15779E+09	124.853	117.142	116.987	116.829
.18935E+09	126.620	119.269	119.119	118.967
.22090E+09	127.986	120.928	120.782	120.635
.25246E+09	129.113	122.306	122.165	122.021
.28402E+09	129.753	123.153	123.015	122.876
.31558E+09	130.112	123.693	123.558	123.423
.63115E+09	128.917	123.780	123.673	123.565
.94673E+09	124.177	119.908	119.822	119.735
.12623E+10	118.530	114.937	114.868	114.797
.15779E+10	113.275	110.246	110.189	110.131
.18935E+10	108.782	106.229	106.183	106.135
.22090E+10	104.981	102.829	102.791	102.752
.25246E+10	101.441	99.6169	99.5856	99.5535
.28402E+10	98.5966	97.0467	97.0206	96.9939
.31558E+10	96.2767	94.9536	94.9318	94.9094
.63115E+10	85.3462	84.8919	84.8850	84.8781
.94673E+10	81.2137	80.8956	80.8910	80.8863
.12623E+11	78.9575	78.6971	78.6934	78.6896
.15779E+11	77.3039	77.0871	77.0841	77.0810
.18935E+11	75.6932	75.5123	75.5098	75.5072
.22090E+11	74.3073	74.1565	74.1544	74.1523

.25246E+11	73.0863	72.9607	72.9590	72.9573
.28402E+11	72.0059	71.9013	71.8999	71.8985
.31558E+11	71.0777	70.9907	70.9895	70.9883

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 36055.930 TIME= 20:54:01
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	8470 TEMP	tt4i045	71.18	.3156E+11	141.5	.3156E+09
3	NSOL	8270 TEMP	tt4o045	71.18	.3156E+11	141.5	.3156E+09
4	NSOL	8272 TEMP	ht4i045	71.25	.3156E+11	150.2	.2840E+09
5	NSOL	8234 TEMP	ct4i045	71.25	.3156E+11	150.5	.2840E+09
6	NSOL	8251 TEMP	ht4o045	71.18	.3156E+11	143.0	.3156E+09
7	NSOL	8242 TEMP	st4i045	67.29	31.56	127.9	.3156E+09
8	NSOL	8460 TEMP	st4o045	67.18	31.56	127.9	.3156E+09
9	NSOL	8556 TEMP	it4i045	47.46	31.56	122.7	.6312E+09
10	NSOL	8566 TEMP	it4o045	47.25	31.56	122.6	.6312E+09
11	NSOL	8691 TEMP	ot4o045	47.02	31.56	122.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:03 NOV 03, 1995 CP= 36057.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	99.9059	99.9521	116.578	115.997	99.6907	67.2895
.20000E-05	99.9035	99.9497	116.576	115.995	99.6890	67.2881
31.558	99.9034	99.9496	116.576	115.995	99.6889	67.2880
.31558E+07	110.769	110.814	126.964	126.655	111.274	80.5564
.63116E+07	115.113	115.156	130.861	130.668	115.904	86.3509
.94673E+07	117.890	117.932	133.222	133.101	118.849	90.2794
.12623E+08	119.921	119.963	134.870	134.801	120.996	93.2904
.15779E+08	121.514	121.554	136.108	136.080	122.673	95.7393

.18935E+08	122.816	122.856	137.084	137.087	124.038	97.8031
.22090E+08	123.912	123.951	137.876	137.906	125.183	99.5855
.25246E+08	124.851	124.889	138.537	138.588	126.159	101.139
.28402E+08	125.662	125.699	139.091	139.160	127.000	102.508
.31558E+08	126.386	126.423	139.576	139.661	127.748	103.744
.63115E+08	131.232	131.265	142.803	142.975	132.708	111.950
.94673E+08	134.101	134.131	144.826	145.036	135.611	116.520
.12623E+09	136.308	136.336	146.517	146.752	137.843	119.771
.15779E+09	137.994	138.021	147.836	148.087	139.544	122.195
.18935E+09	139.305	139.332	148.850	149.113	140.862	124.090
.22090E+09	140.284	140.310	149.572	149.842	141.838	125.559
.25246E+09	141.067	141.092	150.124	150.398	142.614	126.773
.28402E+09	141.399	141.423	150.236	150.509	142.925	127.486
.31558E+09	141.474	141.498	150.102	150.372	142.972	127.908
.63115E+09	138.004	138.023	144.866	145.065	139.158	127.151
.94673E+09	131.545	131.561	137.024	137.146	132.373	122.705
.12623E+10	124.539	124.552	128.930	128.995	125.116	117.287
.15779E+10	118.186	118.196	121.721	121.748	118.585	112.223
.18935E+10	112.811	112.819	115.674	115.679	113.088	107.893
.22090E+10	108.298	108.304	110.631	110.623	108.493	104.229
.25246E+10	104.190	104.196	106.107	106.091	104.326	100.803
.28402E+10	100.889	100.894	102.476	102.457	100.986	98.0533
.31558E+10	98.2037	98.2075	99.5305	99.5106	98.2740	95.8122
.63115E+10	85.9583	85.9595	86.3706	86.3587	85.9650	85.1855
.94673E+10	81.6287	81.6295	81.9064	81.8969	81.6294	81.1009
.12623E+11	79.2911	79.2917	79.5135	79.5053	79.2900	78.8650
.15779E+11	77.5779	77.5784	77.7602	77.7531	77.5761	77.2268
.18935E+11	75.9188	75.9192	76.0686	76.0625	75.9165	75.6288
.22090E+11	74.4932	74.4935	74.6164	74.6111	74.4908	74.2535
.25246E+11	73.2396	73.2399	73.3410	73.3365	73.2372	73.0415
.28402E+11	72.1324	72.1326	72.2159	72.2122	72.1301	71.9686
.31558E+11	71.1822	71.1824	71.2511	71.2479	71.1801	71.0466

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:03 NOV 03, 1995 CP= 36057.870
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1789	47.4579	47.2462	47.0193
.20000E-05	67.1776	47.4574	47.2457	47.0188
31.558	67.1775	47.4572	47.2456	47.0186
.31558E+07	80.4526	63.8644	63.6610	63.4419
.63116E+07	86.2513	71.0866	70.8899	70.6775
.94673E+07	90.1834	76.0111	75.8202	75.6138
.12623E+08	93.1975	79.8033	79.6176	79.4167
.15779E+08	95.6491	82.8969	82.7160	82.5201
.18935E+08	97.7154	85.5091	85.3325	85.1413
.22090E+08	99.5000	87.7681	87.5955	87.4085
.25246E+08	101.055	89.7372	89.5682	89.3851
.28402E+08	102.427	91.4749	91.3093	91.1298
.31558E+08	103.664	93.0407	92.8783	92.7021
.63115E+08	111.882	103.296	103.156	103.003
.94673E+08	116.457	108.843	108.714	108.574
.12623E+09	119.712	112.683	112.561	112.429
.15779E+09	122.139	115.516	115.399	115.273
.18935E+09	124.035	117.724	117.611	117.489
.22090E+09	125.506	119.449	119.339	119.221
.25246E+09	126.722	120.883	120.776	120.661
.28402E+09	127.436	121.776	121.672	121.560
.31558E+09	127.859	122.355	122.254	122.145
.63115E+09	127.113	122.721	122.641	122.554
.94673E+09	122.673	119.034	118.970	118.900

.12623E+10	117.261	114.206	114.153	114.096
.15779E+10	112.202	109.632	109.589	109.543
.18935E+10	107.875	105.713	105.678	105.640
.22090E+10	104.215	102.395	102.367	102.335
.25246E+10	100.791	99.2503	99.2267	99.2010
.28402E+10	98.0435	96.7356	96.7159	96.6946
.31558E+10	95.8039	94.6884	94.6719	94.6540
.63115E+10	85.1828	84.8011	84.7960	84.7904
.94673E+10	81.0991	80.8321	80.8286	80.8248
.12623E+11	78.8635	78.6451	78.6423	78.6392
.15779E+11	77.2256	77.0438	77.0415	77.0390
.18935E+11	75.6278	75.4761	75.4742	75.4722
.22090E+11	74.2527	74.1264	74.1248	74.1231
.25246E+11	73.0408	72.9356	72.9343	72.9330
.28402E+11	71.9680	71.8804	71.8794	71.8782
.31558E+11	71.0462	70.9733	70.9724	70.9714

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 36058.080 TIME= 20:54:03
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135
 VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	1206 TEMP	t01i135	71.18	.3156E+11	141.5	.3156E+09
3	NSOL	885 TEMP	t01o135	71.18	.3156E+11	141.5	.3156E+09
4	NSOL	887 TEMP	h01i135	71.25	.3156E+11	150.2	.2840E+09
5	NSOL	849 TEMP	c01i135	71.25	.3156E+11	150.5	.2840E+09
6	NSOL	866 TEMP	h01o135	71.18	.3156E+11	143.0	.3156E+09
7	NSOL	857 TEMP	s01i135	67.23	31.56	127.9	.3156E+09
8	NSOL	1196 TEMP	s01o135	67.12	31.56	127.8	.3156E+09
9	NSOL	1394 TEMP	i01i135	47.38	31.56	122.7	.6312E+09
10	NSOL	1404 TEMP	i01o135	47.16	31.56	122.6	.6312E+09
11	NSOL	2146 TEMP	o01o135	46.94	31.56	122.5	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:05 NOV 03, 1995 CP= 36060.020
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.9006	99.9467	116.559	115.966	99.6488	67.2362
.20000E-05	99.8982	99.9443	116.557	115.964	99.6471	67.2348
31.558	99.8981	99.9442	116.557	115.964	99.6470	67.2347
.31558E+07	110.765	110.810	126.947	126.627	111.235	80.5075
.63116E+07	115.108	115.152	130.845	130.641	115.867	86.3045
.94673E+07	117.886	117.928	133.206	133.075	118.814	90.2350
.12623E+08	119.918	119.959	134.855	134.776	120.963	93.2477
.15779E+08	121.510	121.551	136.094	136.056	122.640	95.6981
.18935E+08	122.812	122.852	137.070	137.064	124.006	97.7632
.22090E+08	123.908	123.947	137.862	137.883	125.152	99.5467
.25246E+08	124.847	124.885	138.524	138.567	126.129	101.101
.28402E+08	125.659	125.696	139.078	139.139	126.971	102.472
.31558E+08	126.383	126.419	139.563	139.640	127.720	103.708
.63115E+08	131.230	131.262	142.792	142.958	132.684	111.920
.94673E+08	134.099	134.129	144.816	145.020	135.589	116.493
.12623E+09	136.306	136.334	146.508	146.737	137.823	119.745
.15779E+09	137.992	138.019	147.827	148.073	139.525	122.171
.18935E+09	139.303	139.330	148.842	149.100	140.843	124.066
.22090E+09	140.282	140.308	149.564	149.829	141.820	125.536
.25246E+09	141.065	141.091	150.116	150.385	142.597	126.752
.28402E+09	141.397	141.422	150.228	150.497	142.908	127.465
.31558E+09	141.472	141.496	150.095	150.360	142.956	127.887
.63115E+09	138.003	138.022	144.860	145.055	139.145	127.135
.94673E+09	131.544	131.560	137.019	137.138	132.362	122.691
.12623E+10	124.538	124.551	128.926	128.988	125.106	117.276
.15779E+10	118.185	118.195	121.717	121.742	118.577	112.213
.18935E+10	112.810	112.818	115.672	115.675	113.082	107.885
.22090E+10	108.297	108.304	110.629	110.619	108.487	104.223
.25246E+10	104.190	104.195	106.105	106.088	104.322	100.798
.28402E+10	100.889	100.893	102.474	102.454	100.982	98.0488
.31558E+10	98.2033	98.2071	99.5291	99.5082	98.2709	95.8084
.63115E+10	85.9581	85.9593	86.3702	86.3579	85.9639	85.1842
.94673E+10	81.6286	81.6294	81.9060	81.8963	81.6287	81.1000
.12623E+11	79.2910	79.2916	79.5132	79.5049	79.2895	78.8643
.15779E+11	77.5778	77.5784	77.7600	77.7527	77.5756	77.2262
.18935E+11	75.9187	75.9192	76.0684	76.0622	75.9161	75.6283
.22090E+11	74.4931	74.4935	74.6162	74.6109	74.4904	74.2531
.25246E+11	73.2395	73.2398	73.3409	73.3363	73.2369	73.0412
.28402E+11	72.1323	72.1326	72.2158	72.2120	72.1299	71.9683
.31558E+11	71.1822	71.1824	71.2511	71.2478	71.1799	71.0464

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:05 NOV 03, 1995 CP= 36060.030
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.1256	47.3772	47.1651	46.9363
.20000E-05	67.1242	47.3767	47.1646	46.9358
31.558	67.1241	47.3766	47.1645	46.9357
.31558E+07	80.4036	63.7934	63.5896	63.3687
.63116E+07	86.2048	71.0206	70.8234	70.6093
.94673E+07	90.1389	75.9487	75.7573	75.5494
.12623E+08	93.1547	79.7438	79.5577	79.3552
.15779E+08	95.6078	82.8399	82.6585	82.4612
.18935E+08	97.6755	85.4543	85.2773	85.0845
.22090E+08	99.4612	87.7151	87.5422	87.3537
.25246E+08	101.018	89.6858	89.5165	89.3320

.28402E+08	102.390	91.4251	91.2591	91.0782
.31558E+08	103.628	92.9922	92.8294	92.6519
.63115E+08	111.851	103.256	103.116	102.961
.94673E+08	116.430	108.807	108.678	108.537
.12623E+09	119.686	112.650	112.528	112.395
.15779E+09	122.115	115.484	115.368	115.240
.18935E+09	124.012	117.694	117.581	117.458
.22090E+09	125.483	119.420	119.310	119.191
.25246E+09	126.700	120.855	120.748	120.632
.28402E+09	127.414	121.749	121.645	121.532
.31558E+09	127.838	122.329	122.228	122.118
.63115E+09	127.096	122.700	122.620	122.532
.94673E+09	122.660	119.017	118.952	118.882
.12623E+10	117.250	114.191	114.139	114.082
.15779E+10	112.192	109.620	109.577	109.531
.18935E+10	107.868	105.703	105.668	105.630
.22090E+10	104.209	102.387	102.358	102.327
.25246E+10	100.786	99.2435	99.2198	99.1939
.28402E+10	98.0390	96.7299	96.7101	96.6887
.31558E+10	95.8001	94.6836	94.6670	94.6490
.63115E+10	85.1816	84.7996	84.7944	84.7887
.94673E+10	81.0982	80.8310	80.8275	80.8237
.12623E+11	78.8628	78.6442	78.6414	78.6383
.15779E+11	77.2250	77.0431	77.0408	77.0383
.18935E+11	75.6273	75.4755	75.4736	75.4716
.22090E+11	74.2523	74.1258	74.1243	74.1226
.25246E+11	73.0405	72.9352	72.9339	72.9325
.28402E+11	71.9678	71.8801	71.8790	71.8779
.31558E+11	71.0460	70.9730	70.9721	70.9712

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 36060.240 TIME= 20:54:05
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135
 VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135
 VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135
 VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135
 VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135
 VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135
 VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135
 VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135
 VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135
 VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135
 VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135
 VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135
 VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135
 VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2751 TEMP	ot1o135	32.44	.1000E-05	119.2	.6312E+09
3 NSOL	2714 TEMP	ot1i135	32.48	.1000E-05	119.2	.6312E+09
4 NSOL	1968 TEMP	it1o135	44.59	31.56	122.3	.6312E+09
5 NSOL	1931 TEMP	it1i135	44.61	31.56	122.3	.6312E+09
6 NSOL	1088 TEMP	st1o135	46.39	31.56	122.3	.6312E+09
7 NSOL	1082 TEMP	st1i135	46.41	31.56	122.4	.6312E+09
8 NSOL	849 TEMP	ht1i135	71.25	.3156E+11	150.5	.2840E+09
9 NSOL	853 TEMP	gt1i135	71.28	.3156E+11	153.3	.2840E+09
10 NSOL	1 TEMP	c01i135	71.31	.3156E+11	156.1	.2525E+09
11 NSOL	683 TEMP	gb1i135	71.32	.3156E+11	156.5	.2525E+09
12 NSOL	684 TEMP	gb1h135	71.31	.3156E+11	156.2	.2525E+09
13 NSOL	679 TEMP	sb1i135	71.13	.3156E+11	135.3	.3156E+09
14 NSOL	962 TEMP	sb1o135	71.13	.3156E+11	135.2	.3156E+09
15 NSOL	1640 TEMP	ib1i135	57.84	31.56	125.9	.3156E+09
16 NSOL	1677 TEMP	ib1o135	57.19	31.56	125.5	.3156E+09
17 NSOL	2751 TEMP	ob1o135	32.44	.1000E-05	119.2	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:09 NOV 03, 1995 CP= 36063.380
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.4372	32.4759	44.5913	44.6064	46.3934	46.4143
.20000E-05	32.4373	32.4761	44.5910	44.6060	46.3929	46.4139
31.558	32.4373	32.4760	44.5909	44.6059	46.3927	46.4137
.31558E+07	50.9248	50.9581	61.6404	61.6521	62.7883	62.8067
.63116E+07	59.1574	59.1881	69.1318	69.1420	70.0414	70.0584
.94673E+07	64.8080	64.8368	74.2344	74.2436	74.9998	75.0159
.12623E+08	69.1796	69.2069	78.1607	78.1692	78.8245	78.8398
.15779E+08	72.7568	72.7828	81.3616	81.3694	81.9485	81.9632
.18935E+08	75.7838	75.8087	84.0626	84.0699	84.5888	84.6030
.22090E+08	78.4055	78.4295	86.3969	86.4038	86.8738	86.8874
.25246E+08	80.6917	80.7149	88.4303	88.4368	88.8666	88.8798
.28402E+08	82.7115	82.7339	90.2239	90.2301	90.6262	90.6390
.31558E+08	84.5309	84.5527	91.8391	91.8450	92.2123	92.2247
.63115E+08	96.3655	96.3832	102.381	102.385	102.599	102.610
.94673E+08	102.677	102.693	108.061	108.064	108.218	108.228
.12623E+09	106.979	106.994	111.980	111.983	112.103	112.112
.15779E+09	110.132	110.145	114.867	114.870	114.968	114.976
.18935E+09	112.586	112.600	117.115	117.118	117.200	117.208
.22090E+09	114.512	114.525	118.872	118.874	118.945	118.952
.25246E+09	116.119	116.131	120.332	120.335	120.396	120.404
.28402E+09	117.159	117.170	121.246	121.248	121.304	121.311
.31558E+09	117.867	117.879	121.842	121.844	121.896	121.903
.63115E+09	119.167	119.176	122.307	122.309	122.350	122.355
.94673E+09	116.126	116.133	118.678	118.679	118.723	118.727
.12623E+10	111.796	111.802	113.893	113.894	113.942	113.946
.15779E+10	107.629	107.634	109.358	109.360	109.409	109.412
.18935E+10	104.046	104.050	105.476	105.477	105.526	105.528
.22090E+10	101.005	101.008	102.191	102.192	102.238	102.240
.25246E+10	98.0837	98.0866	99.0741	99.0749	99.1173	99.1190
.28402E+10	95.7529	95.7554	96.5838	96.5845	96.6231	96.6246
.31558E+10	93.8556	93.8577	94.5575	94.5581	94.5929	94.5941
.63115E+10	84.5248	84.5254	84.7540	84.7542	84.7694	84.7698
.94673E+10	80.6410	80.6415	80.7985	80.7986	80.8103	80.8106
.12623E+11	78.4898	78.4901	78.6173	78.6175	78.6275	78.6277

.15779E+11	76.9152	76.9155	77.0206	77.0207	77.0293	77.0295
.18935E+11	75.3693	75.3696	75.4566	75.4567	75.4642	75.4643
.22090E+11	74.0377	74.0379	74.1100	74.1101	74.1165	74.1166
.25246E+11	72.8621	72.8623	72.9220	72.9220	72.9274	72.9275
.28402E+11	71.8194	71.8196	71.8690	71.8691	71.8737	71.8738
.31558E+11	70.9226	70.9227	70.9637	70.9638	70.9677	70.9677

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:09 NOV 03, 1995 CP= 36063.390
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	115.966	123.215	130.403	131.699	130.095	87.4014
.20000E-05	115.964	123.213	130.401	131.697	130.093	87.3989
31.558	115.964	123.213	130.401	131.697	130.092	87.3988
.31558E+07	126.627	133.151	139.608	140.671	139.390	98.6143
.63116E+07	130.641	136.783	142.861	143.822	142.682	103.322
.94673E+07	133.075	138.931	144.726	145.617	144.572	106.436
.12623E+08	134.776	140.396	145.959	146.798	145.824	108.777
.15779E+08	136.056	141.475	146.839	147.634	146.718	110.654
.18935E+08	137.064	142.307	147.497	148.256	147.388	112.217
.22090E+08	137.883	142.970	148.006	148.733	147.906	113.555
.25246E+08	138.567	143.514	148.413	149.113	148.321	114.714
.28402E+08	139.139	143.961	148.736	149.413	148.651	115.729
.31558E+08	139.640	144.348	149.011	149.666	148.932	116.642
.63115E+08	142.958	146.925	150.857	151.379	150.818	122.764
.94673E+08	145.020	148.615	152.179	152.637	152.163	126.299
.12623E+09	146.737	150.103	153.440	153.859	153.441	128.917
.15779E+09	148.073	151.277	154.454	154.845	154.467	130.897
.18935E+09	149.100	152.177	155.229	155.599	155.250	132.443
.22090E+09	149.829	152.800	155.748	156.102	155.776	133.623
.25246E+09	150.385	153.265	156.122	156.462	156.155	134.585
.28402E+09	150.497	153.298	156.078	156.407	156.111	135.081
.31558E+09	150.360	153.091	155.802	156.122	155.834	135.308
.63115E+09	145.055	147.259	149.451	149.715	149.450	133.076
.94673E+09	137.138	138.962	140.780	141.011	140.743	127.566
.12623E+10	128.988	130.510	132.030	132.235	131.970	121.311
.15779E+10	121.742	123.013	124.286	124.466	124.214	115.561
.18935E+10	115.675	116.737	117.803	117.960	117.728	110.668
.22090E+10	110.619	111.508	112.402	112.538	112.330	106.541
.25246E+10	106.088	106.836	107.589	107.707	107.521	102.741
.28402E+10	102.454	103.086	103.723	103.825	103.661	99.6844
.31558E+10	99.5082	100.045	100.586	100.675	100.531	97.1940
.63115E+10	86.3579	86.5373	86.7194	86.7519	86.6968	85.6425
.94673E+10	81.8963	82.0205	82.1466	82.1698	82.1302	81.4160
.12623E+11	79.5049	79.6058	79.7084	79.7276	79.6948	79.1207
.15779E+11	77.7527	77.8363	77.9214	77.9375	77.9099	77.4384
.18935E+11	76.0622	76.1316	76.2022	76.2158	76.1925	75.8043
.22090E+11	74.6109	74.6685	74.7272	74.7385	74.7190	74.3990
.25246E+11	73.3363	73.3841	73.4328	73.4423	73.4260	73.1621
.28402E+11	72.2120	72.2516	72.2921	72.3000	72.2864	72.0686
.31558E+11	71.2478	71.2807	71.3143	71.3209	71.3095	71.1296

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:09 NOV 03, 1995 CP= 36063.400
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	87.1103	57.8460	57.1881	32.4372
.20000E-05	87.1078	57.8450	57.1871	32.4373
31.558	87.1077	57.8448	57.1868	32.4373
.31558E+07	98.3354	72.9919	72.3544	50.9248
.63116E+07	103.053	79.5903	78.9716	59.1574
.94673E+07	106.175	84.0592	83.4576	64.8080
.12623E+08	108.524	87.4828	86.8968	69.1796
.15779E+08	110.407	90.2654	89.6938	72.7568
.18935E+08	111.977	92.6085	92.0501	75.7838
.22090E+08	113.320	94.6298	94.0842	78.4055
.25246E+08	114.485	96.3889	95.8555	80.6917
.28402E+08	115.504	97.9386	97.4163	82.7115
.31558E+08	116.422	99.3345	98.8225	84.5309
.63115E+08	122.573	108.503	108.059	96.3655
.94673E+08	126.123	113.525	113.116	102.677
.12623E+09	128.750	117.049	116.662	106.979
.15779E+09	130.736	119.662	119.290	110.132
.18935E+09	132.288	121.699	121.340	112.586
.22090E+09	133.472	123.281	122.932	114.512
.25246E+09	134.439	124.593	124.253	116.119
.28402E+09	134.937	125.378	125.047	117.159
.31558E+09	135.168	125.861	125.539	117.867
.63115E+09	132.965	125.497	125.240	119.167
.94673E+09	127.476	121.286	121.079	116.126
.12623E+10	121.238	116.050	115.884	111.796
.15779E+10	115.502	111.148	111.013	107.629
.18935E+10	110.620	106.963	106.854	104.046
.22090E+10	106.502	103.430	103.341	101.005
.25246E+10	102.708	100.113	100.039	98.0837
.28402E+10	99.6575	97.4578	97.3966	95.7529
.31558E+10	97.1714	95.2975	95.2463	93.8556
.63115E+10	85.6354	84.9988	84.9829	84.5248
.94673E+10	81.4112	80.9676	80.9569	80.6410
.12623E+11	79.1169	78.7547	78.7462	78.4898
.15779E+11	77.4352	77.1344	77.1273	76.9152
.18935E+11	75.8017	75.5511	75.5453	75.3693
.22090E+11	74.3969	74.1884	74.1836	74.0377
.25246E+11	73.1604	72.9870	72.9831	72.8621
.28402E+11	72.0672	71.9230	71.9197	71.8194
.31558E+11	71.1284	71.0085	71.0059	70.9226

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 36063.610 TIME= 20:54:09
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045

VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045
 VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9855 TEMP	ot4o045	32.46	.1000E-05	119.2	.6312E+09
3 NSOL	9818 TEMP	ot4i045	32.49	.1000E-05	119.2	.6312E+09
4 NSOL	9546 TEMP	it4o045	44.61	31.56	122.3	.6312E+09
5 NSOL	9509 TEMP	it4i045	44.62	31.56	122.3	.6312E+09
6 NSOL	8352 TEMP	st4o045	46.41	31.56	122.4	.6312E+09
7 NSOL	8346 TEMP	st4i045	46.43	31.56	122.4	.6312E+09
8 NSOL	8234 TEMP	ht4i045	71.25	.3156E+11	150.5	.2840E+09
9 NSOL	8238 TEMP	gt4i045	71.28	.3156E+11	153.3	.2840E+09
10 NSOL	7642 TEMP	c04i045	71.31	.3156E+11	156.1	.2525E+09
11 NSOL	7654 TEMP	gb4i045	71.32	.3156E+11	156.5	.2525E+09
12 NSOL	7655 TEMP	gb4h045	71.31	.3156E+11	156.2	.2525E+09
13 NSOL	7650 TEMP	sb4i045	71.13	.3156E+11	135.3	.3156E+09
14 NSOL	7871 TEMP	sb4o045	71.13	.3156E+11	135.2	.3156E+09
15 NSOL	8934 TEMP	ib4i045	57.89	31.56	125.9	.3156E+09
16 NSOL	8971 TEMP	ib4o045	57.24	31.56	125.6	.3156E+09
17 NSOL	9855 TEMP	ob4o045	32.46	.1000E-05	119.2	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:12 NOV 03, 1995 CP= 36066.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.4550	32.4933	44.6094	44.6244	46.4130	46.4340
.20000E-05	32.4552	32.4935	44.6091	44.6241	46.4125	46.4335
31.558	32.4551	32.4934	44.6089	44.6240	46.4124	46.4334
.31558E+07	50.9392	50.9722	61.6557	61.6674	62.8050	62.8234
.63116E+07	59.1703	59.2007	69.1458	69.1560	70.0566	70.0737
.94673E+07	64.8198	64.8484	74.2474	74.2566	75.0140	75.0302
.12623E+08	69.1906	69.2176	78.1730	78.1815	78.8379	78.8533
.15779E+08	72.7672	72.7930	81.3733	81.3811	81.9613	81.9760
.18935E+08	75.7936	75.8183	84.0738	84.0811	84.6011	84.6152
.22090E+08	78.4148	78.4386	86.4077	86.4145	86.8856	86.8992
.25246E+08	80.7007	80.7237	88.4407	88.4472	88.8779	88.8912
.28402E+08	82.7201	82.7424	90.2340	90.2401	90.6372	90.6500
.31558E+08	84.5392	84.5608	91.8489	91.8548	92.2229	92.2354
.63115E+08	96.3720	96.3895	102.388	102.393	102.608	102.618
.94673E+08	102.683	102.699	108.068	108.071	108.226	108.235
.12623E+09	106.984	106.999	111.987	111.990	112.110	112.119
.15779E+09	110.137	110.150	114.873	114.876	114.974	114.982
.18935E+09	112.591	112.604	117.121	117.124	117.207	117.214

.22090E+09	114.517	114.529	118.877	118.880	118.951	118.959
.25246E+09	116.123	116.135	120.338	120.340	120.402	120.409
.28402E+09	117.163	117.174	121.251	121.253	121.310	121.317
.31558E+09	117.871	117.882	121.847	121.849	121.901	121.908
.63115E+09	119.170	119.179	122.311	122.313	122.354	122.359
.94673E+09	116.129	116.136	118.681	118.682	118.727	118.731
.12623E+10	111.798	111.804	113.895	113.897	113.945	113.949
.15779E+10	107.631	107.636	109.361	109.362	109.412	109.415
.18935E+10	104.047	104.051	105.478	105.479	105.528	105.530
.22090E+10	101.006	101.009	102.193	102.194	102.239	102.241
.25246E+10	98.0847	98.0876	99.0754	99.0762	99.1187	99.1205
.28402E+10	95.7539	95.7563	96.5850	96.5856	96.6244	96.6258
.31558E+10	93.8564	93.8584	94.5585	94.5590	94.5939	94.5952
.63115E+10	84.5250	84.5257	84.7543	84.7545	84.7698	84.7702
.94673E+10	80.6412	80.6417	80.7987	80.7989	80.8106	80.8108
.12623E+11	78.4899	78.4903	78.6175	78.6176	78.6277	78.6279
.15779E+11	76.9153	76.9156	77.0207	77.0208	77.0295	77.0297
.18935E+11	75.3694	75.3697	75.4568	75.4569	75.4643	75.4644
.22090E+11	74.0378	74.0380	74.1101	74.1102	74.1166	74.1167
.25246E+11	72.8622	72.8623	72.9221	72.9221	72.9275	72.9276
.28402E+11	71.8195	71.8196	71.8691	71.8691	71.8738	71.8738
.31558E+11	70.9227	70.9228	70.9638	70.9638	70.9677	70.9678

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:12 NOV 03, 1995 CP= 36066.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.997	123.247	130.435	131.732	130.127	87.4364
.20000E-05	115.995	123.245	130.433	131.729	130.125	87.4339
31.558	115.995	123.244	130.433	131.729	130.125	87.4338
.31558E+07	126.655	133.180	139.638	140.701	139.420	98.6467
.63116E+07	130.668	136.811	142.890	143.851	142.711	103.353
.94673E+07	133.101	138.957	144.753	145.645	144.599	106.466
.12623E+08	134.801	140.422	145.986	146.824	145.850	108.806
.15779E+08	136.080	141.500	146.865	147.661	146.744	110.681
.18935E+08	137.087	142.331	147.523	148.282	147.413	112.244
.22090E+08	137.906	142.993	148.030	148.758	147.930	113.581
.25246E+08	138.588	143.537	148.437	149.137	148.345	114.740
.28402E+08	139.160	143.983	148.760	149.436	148.674	115.754
.31558E+08	139.661	144.370	149.034	149.689	148.955	116.666
.63115E+08	142.975	146.944	150.877	151.399	150.837	122.785
.94673E+08	145.036	148.632	152.197	152.655	152.181	126.318
.12623E+09	146.752	150.119	153.457	153.876	153.457	128.935
.15779E+09	148.087	151.292	154.470	154.862	154.483	130.914
.18935E+09	149.113	152.191	155.244	155.615	155.265	132.459
.22090E+09	149.842	152.814	155.763	156.117	155.791	133.639
.25246E+09	150.398	153.279	156.136	156.476	156.169	134.601
.28402E+09	150.509	153.312	156.092	156.421	156.125	135.095
.31558E+09	150.372	153.104	155.816	156.136	155.848	135.322
.63115E+09	145.065	147.269	149.462	149.726	149.461	133.088
.94673E+09	137.146	138.970	140.789	141.020	140.752	127.575
.12623E+10	128.995	130.517	132.038	132.242	131.977	121.319
.15779E+10	121.748	123.019	124.292	124.472	124.220	115.568
.18935E+10	115.679	116.742	117.808	117.965	117.733	110.673
.22090E+10	110.623	111.512	112.406	112.542	112.334	106.546
.25246E+10	106.091	106.839	107.593	107.711	107.525	102.745
.28402E+10	102.457	103.089	103.726	103.829	103.664	99.6876
.31558E+10	99.5106	100.047	100.589	100.678	100.534	97.1967
.63115E+10	86.3587	86.5382	86.7203	86.7528	86.6977	85.6434
.94673E+10	81.8969	82.0210	82.1472	82.1704	82.1308	81.4166

.12623E+11	79.5053	79.6062	79.7089	79.7281	79.6953	79.1212
.15779E+11	77.7531	77.8367	77.9218	77.9379	77.9103	77.4388
.18935E+11	76.0625	76.1319	76.2026	76.2161	76.1929	75.8046
.22090E+11	74.6111	74.6687	74.7274	74.7388	74.7193	74.3993
.25246E+11	73.3365	73.3843	73.4330	73.4425	73.4262	73.1624
.28402E+11	72.2122	72.2518	72.2922	72.3002	72.2865	72.0688
.31558E+11	71.2479	71.2808	71.3144	71.3211	71.3097	71.1298

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:12 NOV 03, 1995 CP= 36066.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	87.1452	57.8953	57.2375	32.4550
.20000E-05	87.1427	57.8943	57.2365	32.4552
31.558	87.1426	57.8940	57.2363	32.4551
.31558E+07	98.3679	73.0359	72.3986	50.9392
.63116E+07	103.084	79.6315	79.0130	59.1703
.94673E+07	106.205	84.0984	83.4969	64.8198
.12623E+08	108.553	87.5203	86.9345	69.1906
.15779E+08	110.435	90.3014	89.7300	72.7672
.18935E+08	112.004	92.6432	92.0850	75.7936
.22090E+08	113.346	94.6633	94.1180	78.4148
.25246E+08	114.510	96.4215	95.8882	80.7007
.28402E+08	115.529	97.9703	97.4482	82.7201
.31558E+08	116.446	99.3653	98.8535	84.5392
.63115E+08	122.593	108.528	108.085	96.3720
.94673E+08	126.141	113.548	113.139	102.683
.12623E+09	128.767	117.071	116.684	106.984
.15779E+09	130.753	119.683	119.311	110.137
.18935E+09	132.304	121.719	121.359	112.591
.22090E+09	133.488	123.300	122.951	114.517
.25246E+09	134.454	124.611	124.271	116.123
.28402E+09	134.952	125.396	125.065	117.163
.31558E+09	135.183	125.878	125.556	117.871
.63115E+09	132.976	125.510	125.254	119.170
.94673E+09	127.486	121.297	121.091	116.129
.12623E+10	121.246	116.059	115.893	111.798
.15779E+10	115.509	111.155	111.021	107.631
.18935E+10	110.626	106.970	106.860	104.047
.22090E+10	106.506	103.435	103.346	101.006
.25246E+10	102.712	100.117	100.044	98.0847
.28402E+10	99.6607	97.4614	97.4003	95.7539
.31558E+10	97.1742	95.3006	95.2494	93.8564
.63115E+10	85.6363	84.9998	84.9839	84.5250
.94673E+10	81.4118	80.9683	80.9576	80.6412
.12623E+11	79.1174	78.7553	78.7467	78.4899
.15779E+11	77.4357	77.1348	77.1278	76.9153
.18935E+11	75.8020	75.5515	75.5457	75.3694
.22090E+11	74.3972	74.1887	74.1840	74.0378
.25246E+11	73.1606	72.9872	72.9833	72.8622
.28402E+11	72.0674	71.9232	71.9200	71.8195
.31558E+11	71.1286	71.0087	71.0060	70.9227

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 36066.980 TIME= 20:54:12
 NSOL command erases all previously stored or calculated data

unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise
 VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise
 VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise
 VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise
 VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise
 VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise
 VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise
 VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise
 VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise
 VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise
 VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise
 VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise
 VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise
 VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise
 VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2763 TEMP	ot1oise	31.60	.1000E-05	119.0	.6312E+09
3 NSOL	2726 TEMP	ot1iise	31.63	.1000E-05	119.0	.6312E+09
4 NSOL	1980 TEMP	it1oise	50.29	31.56	124.0	.6312E+09
5 NSOL	1943 TEMP	it1iise	50.34	31.56	124.0	.6312E+09
6 NSOL	1281 TEMP	st1oise	56.93	31.56	125.9	.3156E+09
7 NSOL	1247 TEMP	st1iise	57.44	31.56	126.1	.3156E+09
8 NSOL	1206 TEMP	ht1iise	71.18	.3156E+11	141.5	.3156E+09
9 NSOL	1207 TEMP	gt1iise	71.26	.3156E+11	148.3	.2840E+09
10 NSOL	63 TEMP	c01iise	71.30	.3156E+11	151.7	.2840E+09
11 NSOL	1034 TEMP	gb1iise	71.31	.3156E+11	152.0	.2840E+09
12 NSOL	1035 TEMP	gb1hise	71.27	.3156E+11	148.4	.2840E+09
13 NSOL	1033 TEMP	sb1iise	71.17	.3156E+11	140.4	.3156E+09
14 NSOL	1071 TEMP	sb1oise	71.17	.3156E+11	140.0	.3156E+09
15 NSOL	1652 TEMP	ib1iise	61.23	31.56	127.4	.3156E+09
16 NSOL	1689 TEMP	ib1oise	60.47	31.56	127.1	.3156E+09
17 NSOL	2763 TEMP	ob1oise	31.60	.1000E-05	119.0	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:15 NOV 03, 1995 CP= 36070.110
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	31.6032	31.6314	50.2877	50.3363	56.9347	57.4391
.20000E-05	31.6033	31.6316	50.2871	50.3357	56.9337	57.4380

31.558	31.6033	31.6316	50.2870	50.3355	56.9335	57.4378
.31558E+07	50.2228	50.2465	66.7985	66.8430	72.3612	72.8395
.63116E+07	58.5177	58.5392	73.9914	74.0335	79.0806	79.5413
.94673E+07	64.2124	64.2324	78.8654	78.9056	83.6265	84.0722
.12623E+08	68.6186	68.6374	82.6013	82.6400	87.1059	87.5383
.15779E+08	72.2245	72.2423	85.6383	85.6757	89.9322	90.3526
.18935E+08	75.2758	75.2928	88.1955	88.2316	92.3100	92.7195
.22090E+08	77.9186	77.9349	90.4015	90.4366	94.3602	94.7597
.25246E+08	80.2233	80.2389	92.3210	92.3551	96.1434	96.5337
.28402E+08	82.2592	82.2743	94.0118	94.0450	97.7132	98.0950
.31558E+08	84.0931	84.1077	95.5324	95.5647	99.1260	99.5001
.63115E+08	96.0164	96.0280	105.464	105.491	108.395	108.718
.94673E+08	102.370	102.380	110.846	110.870	113.461	113.758
.12623E+09	106.696	106.706	114.585	114.608	117.011	117.292
.15779E+09	109.866	109.875	117.346	117.368	119.641	119.910
.18935E+09	112.334	112.342	119.496	119.517	121.690	121.950
.22090E+09	114.271	114.279	121.170	121.191	123.280	123.533
.25246E+09	115.886	115.894	122.559	122.579	124.598	124.844
.28402E+09	116.934	116.941	123.409	123.428	125.387	125.627
.31558E+09	117.649	117.656	123.947	123.966	125.872	126.105
.63115E+09	118.995	119.001	123.971	123.986	125.499	125.684
.94673E+09	115.985	115.990	120.021	120.033	121.270	121.419
.12623E+10	111.679	111.682	114.987	114.996	116.021	116.140
.15779E+10	107.531	107.535	110.253	110.261	111.112	111.208
.18935E+10	103.964	103.967	106.210	106.217	106.925	107.004
.22090E+10	100.936	100.939	102.796	102.801	103.392	103.456
.25246E+10	98.0263	98.0282	99.5761	99.5805	100.077	100.130
.28402E+10	95.7045	95.7061	97.0030	97.0067	97.4252	97.4690
.31558E+10	93.8145	93.8158	94.9103	94.9134	95.2684	95.3051
.63115E+10	84.5109	84.5114	84.8669	84.8679	84.9867	84.9981
.94673E+10	80.6314	80.6317	80.8754	80.8761	80.9586	80.9663
.12623E+11	78.4819	78.4822	78.6794	78.6800	78.7472	78.7534
.15779E+11	76.9087	76.9089	77.0717	77.0722	77.1280	77.1330
.18935E+11	75.3639	75.3641	75.4989	75.4992	75.5456	75.5498
.22090E+11	74.0332	74.0334	74.1449	74.1452	74.1838	74.1872
.25246E+11	72.8583	72.8585	72.9508	72.9510	72.9831	72.9859
.28402E+11	71.8163	71.8164	71.8928	71.8930	71.9197	71.9220
.31558E+11	70.9200	70.9201	70.9834	70.9836	71.0058	71.0077

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:15 NOV 03, 1995 CP= 36070.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP ht1iise	1207 TEMP gt1iise	63 TEMP c01iise	1034 TEMP gb1iise	1035 TEMP gb1hiise	1033 TEMP sb1iise
.10000E-05	99.9006	116.310	124.169	125.262	117.373	98.4711
.20000E-05	99.8982	116.308	124.167	125.259	117.370	98.4681
31.558	99.8981	116.308	124.167	125.259	117.370	98.4679
.31558E+07	110.765	125.785	132.978	133.892	126.519	109.122
.63116E+07	115.108	129.369	136.201	137.038	129.975	113.427
.94673E+07	117.886	131.560	138.115	138.900	132.088	116.203
.12623E+08	119.918	133.103	139.427	140.170	133.574	118.246
.15779E+08	121.510	134.272	140.396	141.107	134.700	119.856
.18935E+08	122.812	135.200	141.148	141.830	135.592	121.177
.22090E+08	123.908	135.960	141.750	142.408	136.324	122.294
.25246E+08	124.847	136.600	142.248	142.885	136.938	123.253
.28402E+08	125.659	137.139	142.659	143.277	137.456	124.085
.31558E+08	126.383	137.615	143.017	143.618	137.913	124.829
.63115E+08	131.230	140.827	145.455	145.948	141.017	129.821
.94673E+08	134.099	142.859	147.089	147.530	143.001	132.777
.12623E+09	136.306	144.548	148.531	148.939	144.661	135.040
.15779E+09	137.992	145.867	149.674	150.059	145.961	136.767

.18935E+09	139.303	146.888	150.557	150.924	146.969	138.112
.22090E+09	140.282	147.624	151.178	151.530	147.695	139.121
.25246E+09	141.065	148.193	151.645	151.985	148.256	139.932
.28402E+09	141.397	148.341	151.704	152.035	148.398	140.289
.31558E+09	141.472	148.249	151.533	151.856	148.304	140.389
.63115E+09	138.003	143.489	146.157	146.425	143.539	137.127
.94673E+09	131.544	136.076	138.287	138.520	136.135	130.835
.12623E+10	124.538	128.306	130.149	130.354	128.374	123.964
.15779E+10	118.185	121.320	122.858	123.037	121.392	117.720
.18935E+10	112.810	115.422	116.706	116.862	115.493	112.433
.22090E+10	108.297	110.477	111.550	111.684	110.544	107.990
.25246E+10	104.190	106.018	106.920	107.037	106.082	103.939
.28402E+10	100.889	102.429	103.190	103.291	102.487	100.681
.31558E+10	98.2033	99.5095	100.155	100.243	99.5618	98.0306
.63115E+10	85.9581	86.3905	86.6054	86.6373	86.4134	85.9065
.94673E+10	81.6286	81.9263	82.0745	82.0973	81.9436	81.5947
.12623E+11	79.2910	79.5324	79.6527	79.6715	79.5471	79.2643
.15779E+11	77.5778	77.7774	77.8769	77.8926	77.7900	77.5563
.18935E+11	75.9187	76.0841	76.1666	76.1799	76.0950	75.9013
.22090E+11	74.4931	74.6302	74.6985	74.7096	74.6394	74.4790
.25246E+11	73.2395	73.3530	73.4097	73.4190	73.3609	73.2280
.28402E+11	72.1323	72.2264	72.2734	72.2812	72.2331	72.1230
.31558E+11	71.1822	71.2602	71.2991	71.3056	71.2658	71.1745

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:15 NOV 03, 1995 CP= 36070.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP sbloise	1652 TEMP ibliise	1689 TEMP ibloise	2763 TEMP obloise
.10000E-05	97.7839	61.2344	60.4744	31.6032
.20000E-05	97.7809	61.2332	60.4733	31.6033
31.558	97.7808	61.2329	60.4730	31.6033
.31558E+07	108.456	76.2645	75.5187	50.2228
.63116E+07	112.781	82.7555	82.0283	58.5177
.94673E+07	115.575	87.1279	86.4185	64.2124
.12623E+08	117.634	90.4634	89.7711	68.6186
.15779E+08	119.259	93.1656	92.4892	72.2245
.18935E+08	120.595	95.4339	94.7734	75.2758
.22090E+08	121.724	97.3862	96.7408	77.9186
.25246E+08	122.696	99.0831	98.4515	80.2233
.28402E+08	123.538	100.576	99.9567	82.2592
.31558E+08	124.292	101.918	101.310	84.0931
.63115E+08	129.353	110.717	110.188	96.0164
.94673E+08	132.343	115.553	115.064	102.370
.12623E+09	134.627	118.966	118.501	106.696
.15779E+09	136.370	121.499	121.052	109.866
.18935E+09	137.728	123.473	123.040	112.334
.22090E+09	138.747	125.001	124.581	114.271
.25246E+09	139.568	126.264	125.855	115.886
.28402E+09	139.934	127.005	126.607	116.934
.31558E+09	140.042	127.447	127.058	117.649
.63115E+09	136.852	126.746	126.438	118.995
.94673E+09	130.615	122.279	122.034	115.985
.12623E+10	123.788	116.845	116.649	111.679
.15779E+10	117.579	111.786	111.629	107.531
.18935E+10	112.319	107.480	107.353	103.964
.22090E+10	107.897	103.850	103.747	100.936
.25246E+10	103.862	100.458	100.373	98.0263
.28402E+10	100.618	97.7422	97.6725	95.7045
.31558E+10	97.9778	95.5346	95.4764	93.8145
.63115E+10	85.8903	85.0712	85.0534	84.5109
.94673E+10	81.5838	81.0160	81.0041	80.6314

.12623E+11	79.2556	78.7934	78.7839	78.4819
.15779E+11	77.5491	77.1660	77.1582	76.9087
.18935E+11	75.8954	75.5770	75.5706	75.3639
.22090E+11	74.4741	74.2096	74.2044	74.0332
.25246E+11	73.2240	73.0044	73.0002	72.8583
.28402E+11	72.1197	71.9373	71.9338	71.8163
.31558E+11	71.1718	71.0203	71.0174	70.9200

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 36070.340 TIME= 20:54:16
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1hose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
 VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2	NSOL	2682 TEMP	ot1oose	34.54	.1000E-05	119.6	.6312E+09
3	NSOL	2673 TEMP	ot1oose	34.63	31.56	119.7	.6312E+09
4	NSOL	1899 TEMP	it1oose	36.16	31.56	120.1	.6312E+09
5	NSOL	1794 TEMP	it1oose	36.12	31.56	120.1	.6312E+09
6	NSOL	1276 TEMP	st1oose	43.11	31.56	121.4	.6312E+09
7	NSOL	1233 TEMP	st1oose	43.14	31.56	121.4	.6312E+09
8	NSOL	1196 TEMP	ht1oose	67.12	31.56	127.8	.3156E+09
9	NSOL	1197 TEMP	gt1oose	71.11	.3156E+11	132.7	.3156E+09
10	NSOL	58 TEMP	c01oose	71.13	.3156E+11	134.3	.3156E+09
11	NSOL	1019 TEMP	gb1oose	71.13	.3156E+11	134.7	.3156E+09
12	NSOL	1020 TEMP	gb1hose	71.12	.3156E+11	133.5	.3156E+09
13	NSOL	1018 TEMP	sb1oose	71.08	.3156E+11	130.1	.3156E+09
14	NSOL	1066 TEMP	sb1oose	71.08	.3156E+11	130.0	.3156E+09
15	NSOL	1529 TEMP	ib1oose	52.93	31.56	123.7	.6312E+09
16	NSOL	1608 TEMP	ib1oose	52.73	31.56	123.7	.6312E+09
17	NSOL	2682 TEMP	ob1oose	34.54	.1000E-05	119.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:19 NOV 03, 1995 CP= 36073.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP otlouse	2673 TEMP otlouse	1899 TEMP itlouse	1794 TEMP itlouse	1276 TEMP stlouse	1233 TEMP stlouse
.10000E-05	34.5359	34.6250	36.1624	36.1214	43.1133	43.1427
.20000E-05	34.5360	34.6251	36.1624	36.1214	43.1130	43.1424
31.558	34.5359	34.6250	36.1623	36.1213	43.1128	43.1422
.31558E+07	52.7248	52.8045	54.1703	54.1357	59.8173	59.8409
.63116E+07	60.8128	60.8874	62.1641	62.1328	67.2449	67.2659
.94673E+07	66.3595	66.4304	67.6408	67.6117	72.3357	72.3549
.12623E+08	70.6483	70.7162	71.8724	71.8452	76.2709	76.2888
.15779E+08	74.1567	74.2219	75.3322	75.3064	79.4901	79.5069
.18935E+08	77.1247	77.1877	78.2580	78.2335	82.2140	82.2299
.22090E+08	79.6950	79.7559	80.7909	80.7675	84.5736	84.5887
.25246E+08	81.9363	81.9955	82.9993	82.9769	86.6326	86.6470
.28402E+08	83.9162	83.9737	84.9496	84.9281	88.4519	88.4657
.31558E+08	85.6997	85.7558	86.7064	86.6857	90.0920	90.1053
.63115E+08	97.3132	97.3601	98.1506	98.1345	100.831	100.842
.94673E+08	103.519	103.562	104.272	104.258	106.624	106.633
.12623E+09	107.757	107.796	108.457	108.445	110.614	110.622
.15779E+09	110.864	110.902	111.529	111.517	113.552	113.559
.18935E+09	113.285	113.320	113.921	113.910	115.842	115.849
.22090E+09	115.183	115.217	115.796	115.785	117.635	117.641
.25246E+09	116.765	116.799	117.358	117.348	119.128	119.134
.28402E+09	117.785	117.817	118.360	118.351	120.072	120.078
.31558E+09	118.475	118.507	119.035	119.026	120.697	120.702
.63115E+09	119.647	119.672	120.090	120.082	121.402	121.407
.94673E+09	116.518	116.538	116.877	116.871	117.958	117.961
.12623E+10	112.120	112.136	112.414	112.409	113.318	113.321
.15779E+10	107.898	107.912	108.141	108.136	108.898	108.901
.18935E+10	104.270	104.281	104.470	104.466	105.105	105.108
.22090E+10	101.191	101.201	101.357	101.354	101.891	101.893
.25246E+10	98.2400	98.2477	98.3783	98.3757	98.8291	98.8311
.28402E+10	95.8845	95.8910	96.0003	95.9981	96.3823	96.3841
.31558E+10	93.9670	93.9725	94.0647	94.0628	94.3901	94.3916
.63115E+10	84.5617	84.5635	84.5934	84.5928	84.7043	84.7048
.94673E+10	80.6666	80.6678	80.6883	80.6879	80.7659	80.7662
.12623E+11	78.5105	78.5115	78.5281	78.5278	78.5916	78.5919
.15779E+11	76.9324	76.9332	76.9469	76.9466	76.9997	77.0000
.18935E+11	75.3836	75.3843	75.3956	75.3954	75.4397	75.4399
.22090E+11	74.0496	74.0501	74.0595	74.0593	74.0963	74.0964
.25246E+11	72.8719	72.8724	72.8802	72.8800	72.9107	72.9109
.28402E+11	71.8276	71.8280	71.8344	71.8342	71.8599	71.8600
.31558E+11	70.9294	70.9297	70.9350	70.9349	70.9562	70.9564

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:19 NOV 03, 1995 CP= 36073.490
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP htlouse	1197 TEMP gtlouse	58 TEMP c0louse	1019 TEMP gblouse	1020 TEMP gbhose	1018 TEMP sblouse
.10000E-05	67.1256	81.4707	86.0972	87.5606	84.4196	75.1973

.20000E-05	67.1242	81.4688	86.0949	87.5581	84.4173	75.1952
31.558	67.1241	81.4687	86.0949	87.5581	84.4172	75.1951
.31558E+07	80.4036	93.0940	97.1560	98.3890	95.5332	87.2321
.63116E+07	86.2048	98.0531	101.835	102.963	100.264	92.4565
.94673E+07	90.1389	101.366	104.946	106.002	103.421	95.9867
.12623E+08	93.1547	103.878	107.295	108.294	105.812	98.6843
.15779E+08	95.6078	105.904	109.184	110.136	107.740	100.874
.18935E+08	97.6755	107.601	110.763	111.674	109.353	102.718
.22090E+08	99.4612	109.060	112.117	112.994	110.740	104.309
.25246E+08	101.018	110.328	113.293	114.139	111.945	105.696
.28402E+08	102.390	111.442	114.324	115.144	113.004	106.918
.31558E+08	103.628	112.446	115.253	116.049	113.959	108.021
.63115E+08	111.851	119.169	121.496	122.141	120.378	115.402
.94673E+08	116.430	123.007	125.097	125.670	124.073	119.580
.12623E+09	119.686	125.810	127.754	128.283	126.789	122.593
.15779E+09	122.115	127.921	129.762	130.261	128.840	124.853
.18935E+09	124.012	129.571	131.333	131.808	130.445	126.620
.22090E+09	125.483	130.839	132.536	132.992	131.676	127.986
.25246E+09	126.700	131.879	133.519	133.959	132.684	129.113
.28402E+09	127.414	132.445	134.038	134.464	133.225	129.753
.31558E+09	127.838	132.737	134.290	134.704	133.495	130.112
.63115E+09	127.096	131.028	132.282	132.618	131.639	128.917
.94673E+09	122.660	125.912	126.960	127.243	126.427	124.177
.12623E+10	117.250	119.968	120.853	121.094	120.409	118.530
.15779E+10	112.192	114.468	115.215	115.422	114.845	113.275
.18935E+10	107.868	109.774	110.405	110.581	110.096	108.782
.22090E+10	104.209	105.807	106.339	106.489	106.081	104.981
.25246E+10	100.786	102.134	102.585	102.714	102.369	101.441
.28402E+10	98.0390	99.1790	99.5627	99.6727	99.3804	98.5966
.31558E+10	95.8001	96.7697	97.0974	97.1919	96.9429	96.2767
.63115E+10	85.1816	85.5082	85.6207	85.6541	85.5697	85.3462
.94673E+10	81.0982	81.3249	81.4035	81.4272	81.3686	81.2137
.12623E+11	78.8628	79.0475	79.1117	79.1312	79.0835	78.9575
.15779E+11	77.2250	77.3782	77.4316	77.4479	77.4083	77.3039
.18935E+11	75.6273	75.7547	75.7992	75.8128	75.7799	75.6932
.22090E+11	74.2523	74.3582	74.3952	74.4066	74.3793	74.3073
.25246E+11	73.0405	73.1284	73.1593	73.1688	73.1461	73.0863
.28402E+11	71.9678	72.0408	72.0664	72.0744	72.0555	72.0059
.31558E+11	71.0460	71.1066	71.1280	71.1346	71.1189	71.0777

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:19 NOV 03, 1995 CP= 36073.500
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP	1529 TEMP	1608 TEMP	2682 TEMP
	sb1oose	ib1iose	ib1oose	ob1oose
.10000E-05	75.0601	52.9356	52.7321	34.5359
.20000E-05	75.0580	52.9348	52.7313	34.5360
31.558	75.0579	52.9346	52.7311	34.5359
.31558E+07	87.1014	68.2967	68.0997	52.7248
.63116E+07	92.3304	75.0655	74.8740	60.8128
.94673E+07	95.8648	79.6821	79.4957	66.3595
.12623E+08	98.5661	83.2377	83.0559	70.6483
.15779E+08	100.759	86.1394	85.9618	74.1567
.18935E+08	102.606	88.5907	88.4170	77.1247
.22090E+08	104.199	90.7115	90.5415	79.6950
.25246E+08	105.589	92.5616	92.3949	81.9363
.28402E+08	106.813	94.1949	94.0315	83.9162
.31558E+08	107.919	95.6677	95.5074	85.6997
.63115E+08	115.314	105.364	105.225	97.3132
.94673E+08	119.499	110.657	110.529	103.519
.12623E+09	122.516	114.347	114.225	107.757
.15779E+09	124.779	117.076	116.959	110.864

.18935E+09	126.549	119.205	119.092	113.285
.22090E+09	127.918	120.866	120.756	115.183
.25246E+09	129.046	122.246	122.139	116.765
.28402E+09	129.688	123.095	122.991	117.785
.31558E+09	130.049	123.636	123.534	118.475
.63115E+09	128.867	123.734	123.653	119.647
.94673E+09	124.136	119.870	119.805	116.518
.12623E+10	118.497	114.906	114.853	112.120
.15779E+10	113.247	110.219	110.177	107.898
.18935E+10	108.760	106.207	106.172	104.270
.22090E+10	104.962	102.810	102.781	101.191
.25246E+10	101.426	99.6016	99.5778	98.2400
.28402E+10	98.5839	97.0338	97.0140	95.8845
.31558E+10	96.2660	94.9428	94.9261	93.9670
.63115E+10	85.3429	84.8884	84.8832	84.5617
.94673E+10	81.2114	80.8932	80.8897	80.6666
.12623E+11	78.9556	78.6951	78.6923	78.5105
.15779E+11	77.3024	77.0855	77.0832	76.9324
.18935E+11	75.6919	75.5110	75.5090	75.3836
.22090E+11	74.3062	74.1554	74.1538	74.0496
.25246E+11	73.0854	72.9598	72.9585	72.8719
.28402E+11	72.0052	71.9006	71.8995	71.8276
.31558E+11	71.0771	70.9900	70.9892	70.9294

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 36073.710 TIME= 20:54:19
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise
 VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise
 VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise
 VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise
 VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise
 VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise
 VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise
 VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise
 VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise
 VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise
 VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise
 VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise
 VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise
 VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise
 VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9867 TEMP	ot4oise	31.61	.1000E-05	119.0	.6312E+09

3	NSOL	9830	TEMP	ot4iise	31.64	.1000E-05	119.0	.6312E+09
4	NSOL	9558	TEMP	it4oise	50.29	31.56	124.0	.6312E+09
5	NSOL	9521	TEMP	it4iise	50.34	31.56	124.0	.6312E+09
6	NSOL	8545	TEMP	st4oise	56.94	31.56	125.9	.3156E+09
7	NSOL	8511	TEMP	st4iise	57.44	31.56	126.1	.3156E+09
8	NSOL	8470	TEMP	ht4iise	71.18	.3156E+11	141.5	.3156E+09
9	NSOL	8471	TEMP	gt4iise	71.26	.3156E+11	148.3	.2840E+09
10	NSOL	7947	TEMP	c04iise	71.30	.3156E+11	151.7	.2840E+09
11	NSOL	7952	TEMP	gb4iise	71.31	.3156E+11	152.0	.2840E+09
12	NSOL	7953	TEMP	gb4hise	71.27	.3156E+11	148.4	.2840E+09
13	NSOL	7951	TEMP	sb4iise	71.17	.3156E+11	140.4	.3156E+09
14	NSOL	7996	TEMP	sb4oise	71.17	.3156E+11	140.0	.3156E+09
15	NSOL	8946	TEMP	ib4iise	61.25	31.56	127.5	.3156E+09
16	NSOL	8983	TEMP	ib4oise	60.49	31.56	127.1	.3156E+09
17	NSOL	9867	TEMP	ob4oise	31.61	.1000E-05	119.0	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:22 NOV 03, 1995 CP= 36076.840
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.6082	31.6363	50.2931	50.3416	56.9420	57.4461
.20000E-05	31.6084	31.6365	50.2925	50.3410	56.9410	57.4451
31.558	31.6084	31.6364	50.2923	50.3409	56.9408	57.4449
.31558E+07	50.2268	50.2503	66.8030	66.8475	72.3670	72.8452
.63116E+07	58.5213	58.5427	73.9956	74.0376	79.0859	79.5464
.94673E+07	64.2157	64.2355	78.8693	78.9095	83.6314	84.0769
.12623E+08	68.6217	68.6404	82.6050	82.6436	87.1104	87.5426
.15779E+08	72.2274	72.2451	85.6418	85.6791	89.9364	90.3566
.18935E+08	75.2785	75.2954	88.1988	88.2349	92.3141	92.7234
.22090E+08	77.9212	77.9374	90.4048	90.4398	94.3640	94.7634
.25246E+08	80.2257	80.2413	92.3241	92.3582	96.1471	96.5373
.28402E+08	82.2616	82.2766	94.0148	94.0480	97.7167	98.0984
.31558E+08	84.0954	84.1099	95.5353	95.5676	99.1294	99.5034
.63115E+08	96.0181	96.0296	105.466	105.493	108.398	108.720
.94673E+08	102.371	102.381	110.848	110.872	113.464	113.760
.12623E+09	106.698	106.707	114.587	114.610	117.013	117.294
.15779E+09	109.867	109.876	117.348	117.370	119.643	119.912
.18935E+09	112.335	112.344	119.498	119.519	121.691	121.952
.22090E+09	114.272	114.280	121.172	121.192	123.282	123.535
.25246E+09	115.887	115.895	122.561	122.581	124.600	124.845
.28402E+09	116.935	116.942	123.410	123.430	125.389	125.628
.31558E+09	117.650	117.657	123.949	123.968	125.873	126.107
.63115E+09	118.996	119.002	123.973	123.987	125.500	125.686
.94673E+09	115.986	115.991	120.022	120.034	121.272	121.420
.12623E+10	111.679	111.683	114.987	114.997	116.022	116.141
.15779E+10	107.532	107.535	110.253	110.261	111.113	111.209
.18935E+10	103.965	103.967	106.211	106.217	106.926	107.004
.22090E+10	100.937	100.939	102.796	102.802	103.393	103.457
.25246E+10	98.0266	98.0285	99.5765	99.5809	100.077	100.130
.28402E+10	95.7048	95.7064	97.0033	97.0070	97.4256	97.4693
.31558E+10	93.8147	93.8160	94.9106	94.9137	95.2687	95.3054
.63115E+10	84.5110	84.5115	84.8670	84.8680	84.9868	84.9983
.94673E+10	80.6315	80.6318	80.8755	80.8762	80.9587	80.9664
.12623E+11	78.4820	78.4822	78.6795	78.6800	78.7473	78.7535
.15779E+11	76.9087	76.9089	77.0718	77.0722	77.1280	77.1331
.18935E+11	75.3640	75.3641	75.4989	75.4993	75.5457	75.5499
.22090E+11	74.0333	74.0334	74.1449	74.1452	74.1838	74.1873
.25246E+11	72.8584	72.8585	72.9508	72.9510	72.9831	72.9860
.28402E+11	71.8163	71.8164	71.8929	71.8931	71.9197	71.9221
.31558E+11	70.9200	70.9201	70.9835	70.9836	71.0058	71.0077

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:22 NOV 03, 1995 CP= 36076.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.9059	116.317	124.176	125.269	117.380	98.4838
.20000E-05	99.9035	116.315	124.174	125.266	117.377	98.4808
31.558	99.9034	116.315	124.174	125.266	117.377	98.4807
.31558E+07	110.769	125.791	132.984	133.898	126.525	109.133
.63116E+07	115.113	129.375	136.207	137.044	129.981	113.438
.94673E+07	117.890	131.566	138.121	138.905	132.094	116.214
.12623E+08	119.921	133.108	139.432	140.176	133.580	118.256
.15779E+08	121.514	134.277	140.401	141.112	134.705	119.865
.18935E+08	122.816	135.205	141.153	141.835	135.598	121.186
.22090E+08	123.912	135.965	141.755	142.413	136.328	122.303
.25246E+08	124.851	136.604	142.252	142.889	136.943	123.262
.28402E+08	125.662	137.143	142.663	143.281	137.461	124.093
.31558E+08	126.386	137.619	143.021	143.622	137.918	124.837
.63115E+08	131.232	140.831	145.459	145.952	141.020	129.828
.94673E+08	134.101	147.862	147.092	147.533	143.004	132.783
.12623E+09	136.308	144.551	148.534	148.942	144.665	135.045
.15779E+09	137.994	145.870	149.677	150.062	145.964	136.773
.18935E+09	139.305	146.891	150.560	150.927	146.971	138.118
.22090E+09	140.284	147.627	151.181	151.533	147.698	139.126
.25246E+09	141.067	148.196	151.648	151.987	148.258	139.937
.28402E+09	141.399	148.343	151.707	152.037	148.401	140.294
.31558E+09	141.474	148.252	151.536	151.858	148.306	140.394
.63115E+09	138.004	143.491	146.159	146.427	143.541	137.131
.94673E+09	131.545	136.078	138.288	138.522	136.137	130.838
.12623E+10	124.539	128.308	130.151	130.355	128.375	123.967
.15779E+10	118.186	121.322	122.859	123.038	121.393	117.723
.18935E+10	112.811	115.423	116.707	116.863	115.494	112.435
.22090E+10	108.298	110.478	111.551	111.685	110.545	107.992
.25246E+10	104.190	106.019	106.921	107.038	106.083	103.940
.28402E+10	100.889	102.430	103.191	103.292	102.488	100.682
.31558E+10	98.2037	99.5101	100.156	100.243	99.5625	98.0316
.63115E+10	85.9583	86.3907	86.6057	86.6376	86.4136	85.9069
.94673E+10	81.6287	81.9265	82.0747	82.0974	81.9438	81.5949
.12623E+11	79.2911	79.5325	79.6528	79.6716	79.5473	79.2645
.15779E+11	77.5779	77.7775	77.8770	77.8928	77.7902	77.5564
.18935E+11	75.9188	76.0842	76.1667	76.1800	76.0951	75.9014
.22090E+11	74.4932	74.6302	74.6986	74.7097	74.6395	74.4791
.25246E+11	73.2396	73.3531	73.4098	73.4191	73.3610	73.2281
.28402E+11	72.1324	72.2265	72.2735	72.2812	72.2331	72.1230
.31558E+11	71.1822	71.2602	71.2992	71.3057	71.2658	71.1746

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:22 NOV 03, 1995 CP= 36076.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.7969	61.2470	60.4871	31.6082

.20000E-05	97.7939	61.2459	60.4859	31.6084
31.558	97.7938	61.2456	60.4856	31.6084
.31558E+07	108.467	76.2755	75.5297	50.2268
.63116E+07	112.792	82.7658	82.0385	58.5213
.94673E+07	115.585	87.1375	86.4281	64.2157
.12623E+08	117.644	90.4726	89.7802	68.6217
.15779E+08	119.269	93.1744	92.4980	72.2274
.18935E+08	120.604	95.4423	94.7818	75.2785
.22090E+08	121.733	97.3943	96.7489	77.9212
.25246E+08	122.704	99.0910	98.4593	80.2257
.28402E+08	123.547	100.583	99.9643	82.2616
.31558E+08	124.301	101.925	101.318	84.0954
.63115E+08	129.360	110.723	110.194	96.0181
.94673E+08	132.349	115.559	115.070	102.371
.12623E+09	134.633	118.970	118.506	106.698
.15779E+09	136.376	121.504	121.057	109.867
.18935E+09	137.733	123.477	123.045	112.335
.22090E+09	138.753	125.005	124.585	114.272
.25246E+09	139.573	126.268	125.859	115.887
.28402E+09	139.939	127.009	126.611	116.935
.31558E+09	140.047	127.451	127.062	117.650
.63115E+09	136.856	126.749	126.441	118.996
.94673E+09	130.619	122.282	122.037	115.986
.12623E+10	123.791	116.847	116.651	111.679
.15779E+10	117.581	111.788	111.631	107.532
.18935E+10	112.321	107.482	107.355	103.965
.22090E+10	107.899	103.852	103.749	100.937
.25246E+10	103.864	100.459	100.374	98.0266
.28402E+10	100.619	97.7431	97.6734	95.7048
.31558E+10	97.9788	95.5353	95.4771	93.8147
.63115E+10	85.8906	85.0714	85.0537	84.5110
.94673E+10	81.5840	81.0162	81.0043	80.6315
.12623E+11	79.2558	78.7935	78.7841	78.4820
.15779E+11	77.5493	77.1661	77.1583	76.9087
.18935E+11	75.8956	75.5771	75.5707	75.3640
.22090E+11	74.4743	74.2097	74.2045	74.0333
.25246E+11	73.2241	73.0045	73.0002	72.8584
.28402E+11	72.1198	71.9374	71.9339	71.8163
.31558E+11	71.1719	71.0204	71.0175	70.9200

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 36077.070 TIME= 20:54:22
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose

VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose

VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose

VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose
 VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose
 VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose
 VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose
 VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9786 TEMP	ot4oose	34.57	.1000E-05	119.7	.6312E+09
3 NSOL	9777 TEMP	ot4iose	34.66	31.56	119.7	.6312E+09
4 NSOL	9477 TEMP	it4oose	36.19	31.56	120.1	.6312E+09
5 NSOL	9318 TEMP	it4iose	36.15	31.56	120.1	.6312E+09
6 NSOL	8540 TEMP	st4oose	43.15	31.56	121.4	.6312E+09
7 NSOL	8497 TEMP	st4iose	43.18	31.56	121.4	.6312E+09
8 NSOL	8460 TEMP	ht4iose	67.18	31.56	127.9	.3156E+09
9 NSOL	8461 TEMP	gt4iose	71.11	.3156E+11	132.8	.3156E+09
10 NSOL	7927 TEMP	c04iose	71.13	.3156E+11	134.3	.3156E+09
11 NSOL	7929 TEMP	gb4iose	71.13	.3156E+11	134.7	.3156E+09
12 NSOL	7930 TEMP	gb4hose	71.12	.3156E+11	133.5	.3156E+09
13 NSOL	7928 TEMP	sb4iose	71.08	.3156E+11	130.1	.3156E+09
14 NSOL	7991 TEMP	sb4oose	71.08	.3156E+11	130.1	.3156E+09
15 NSOL	8787 TEMP	ib4iose	53.01	31.56	123.8	.6312E+09
16 NSOL	8902 TEMP	ib4oose	52.81	31.56	123.7	.6312E+09
17 NSOL	9786 TEMP	ob4oose	34.57	.1000E-05	119.7	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:25 NOV 03, 1995 CP= 36080.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.5676	34.6554	36.1936	36.1527	43.1474	43.1773
.20000E-05	34.5676	34.6555	36.1936	36.1528	43.1470	43.1769
31.558	34.5676	34.6554	36.1935	36.1527	43.1469	43.1768
.31558E+07	52.7511	52.8296	54.1960	54.1616	59.8468	59.8709
.63116E+07	60.8365	60.9102	62.1875	62.1562	67.2722	67.2936
.94673E+07	66.3815	66.4515	67.6624	67.6335	72.3614	72.3811
.12623E+08	70.6691	70.7360	71.8928	71.8656	76.2953	76.3136
.15779E+08	74.1763	74.2407	75.3514	75.3258	79.5134	79.5306
.18935E+08	77.1434	77.2055	78.2763	78.2520	82.2364	82.2527
.22090E+08	79.7129	79.7730	80.8084	80.7852	84.5951	84.6106
.25246E+08	81.9535	82.0119	83.0162	82.9939	86.6535	86.6682
.28402E+08	83.9328	83.9896	84.9659	84.9445	88.4720	88.4862
.31558E+08	85.7158	85.7712	86.7222	86.7015	90.1116	90.1253
.63115E+08	97.3260	97.3723	98.1632	98.1471	100.847	100.858
.94673E+08	103.531	103.573	104.283	104.269	106.639	106.648
.12623E+09	107.767	107.806	108.467	108.455	110.628	110.636
.15779E+09	110.874	110.911	111.538	111.527	113.565	113.572
.18935E+09	113.294	113.329	113.930	113.919	115.854	115.861
.22090E+09	115.192	115.226	115.804	115.794	117.646	117.653
.25246E+09	116.774	116.807	117.367	117.357	119.139	119.145
.28402E+09	117.793	117.825	118.368	118.359	120.083	120.089
.31558E+09	118.483	118.515	119.043	119.034	120.707	120.713
.63115E+09	119.653	119.678	120.096	120.089	121.410	121.415
.94673E+09	116.523	116.543	116.882	116.876	117.964	117.968

.12623E+10	112.124	112.140	112.419	112.414	113.323	113.327
.15779E+10	107.902	107.915	108.144	108.140	108.902	108.906
.18935E+10	104.273	104.284	104.473	104.469	105.109	105.112
.22090E+10	101.194	101.203	101.360	101.357	101.894	101.896
.25246E+10	98.2421	98.2498	98.3804	98.3777	98.8318	98.8339
.28402E+10	95.8863	95.8927	96.0021	95.9998	96.3846	96.3864
.31558E+10	93.9685	93.9739	94.0662	94.0643	94.3920	94.3936
.63115E+10	84.5622	84.5640	84.5939	84.5933	84.7049	84.7055
.94673E+10	80.6669	80.6681	80.6887	80.6882	80.7663	80.7667
.12623E+11	78.5108	78.5118	78.5284	78.5280	78.5920	78.5923
.15779E+11	76.9326	76.9334	76.9472	76.9468	77.0000	77.0003
.18935E+11	75.3838	75.3845	75.3958	75.3956	75.4400	75.4402
.22090E+11	74.0498	74.0503	74.0597	74.0595	74.0965	74.0967
.25246E+11	72.8721	72.8725	72.8803	72.8801	72.9109	72.9111
.28402E+11	71.8277	71.8281	71.8345	71.8344	71.8600	71.8601
.31558E+11	70.9295	70.9298	70.9351	70.9350	70.9564	70.9565

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:25 NOV 03, 1995 CP= 36080.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1789	81.5239	86.1522	87.6169	84.4753	75.2508
.20000E-05	67.1776	81.5219	86.1499	87.6144	84.4729	75.2487
31.558	67.1775	81.5218	86.1498	87.6143	84.4728	75.2486
.31558E+07	80.4526	93.1436	97.2074	98.4417	95.5852	87.2819
.63116E+07	86.2513	98.1005	101.884	103.013	100.313	92.5038
.94673E+07	90.1834	101.412	104.994	106.050	103.469	96.0322
.12623E+08	93.1975	103.922	107.341	108.340	105.858	98.7281
.15779E+08	95.6491	105.946	109.229	110.181	107.784	100.917
.18935E+08	97.7154	107.642	110.806	111.719	109.397	102.759
.22090E+08	99.5000	109.100	112.159	113.037	110.782	104.348
.25246E+08	101.055	110.367	113.334	114.181	111.986	105.734
.28402E+08	102.427	111.480	114.364	115.185	113.044	106.956
.31558E+08	103.664	112.483	115.292	116.089	113.998	108.058
.63115E+08	111.882	119.201	121.530	122.176	120.411	115.434
.94673E+08	116.457	123.036	125.127	125.701	124.103	119.608
.12623E+09	119.712	125.837	127.782	128.312	126.818	122.620
.15779E+09	122.139	127.947	129.789	130.289	128.868	124.878
.18935E+09	124.035	129.596	131.359	131.835	130.471	126.645
.22090E+09	125.506	130.863	132.561	133.018	131.701	128.010
.25246E+09	126.722	131.903	133.544	133.984	132.709	129.136
.28402E+09	127.436	132.468	134.062	134.489	133.249	129.775
.31558E+09	127.859	132.759	134.313	134.728	133.519	130.134
.63115E+09	127.113	131.046	132.301	132.637	131.658	128.935
.94673E+09	122.673	125.927	126.975	127.259	126.443	124.191
.12623E+10	117.261	119.981	120.865	121.108	120.422	118.542
.15779E+10	112.202	114.478	115.226	115.433	114.856	113.284
.18935E+10	107.875	109.783	110.414	110.590	110.105	108.790
.22090E+10	104.215	105.814	106.347	106.497	106.089	104.987
.25246E+10	100.791	102.140	102.591	102.720	102.375	101.447
.28402E+10	98.0435	99.1839	99.5679	99.6780	99.3856	98.6014
.31558E+10	95.8039	96.7739	97.1018	97.1964	96.9473	96.2807
.63115E+10	85.1828	85.5096	85.6221	85.6556	85.5712	85.3476
.94673E+10	81.0991	81.3259	81.4045	81.4282	81.3696	81.2147
.12623E+11	78.8635	79.0483	79.1125	79.1320	79.0843	78.9582
.15779E+11	77.2256	77.3788	77.4323	77.4486	77.4090	77.3045
.18935E+11	75.6278	75.7552	75.7998	75.8134	75.7804	75.6937
.22090E+11	74.2527	74.3586	74.3957	74.4071	74.3797	74.3077
.25246E+11	73.0408	73.1288	73.1596	73.1692	73.1464	73.0866
.28402E+11	71.9680	72.0411	72.0668	72.0747	72.0558	72.0062

1 .31558E+11 71.0462 71.1069 71.1282 71.1349 71.1192 71.0780

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:25 NOV 03, 1995 CP= 36080.230
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	75.1134	53.0135	52.8102	34.5676
.20000E-05	75.1113	53.0127	52.8094	34.5676
31.558	75.1112	53.0125	52.8092	34.5676
.31558E+07	87.1509	68.3658	68.1689	52.7511
.63116E+07	92.3775	75.1299	74.9387	60.8365
.94673E+07	95.9101	79.7432	79.5569	66.3815
.12623E+08	98.6097	83.2960	83.1144	70.6691
.15779E+08	100.802	86.1953	86.0179	74.1763
.18935E+08	102.647	88.6445	88.4711	77.1434
.22090E+08	104.239	90.7635	90.5938	79.7129
.25246E+08	105.628	92.6120	92.4455	81.9535
.28402E+08	106.851	94.2439	94.0807	83.9328
.31558E+08	107.956	95.7153	95.5553	85.7158
.63115E+08	115.345	105.404	105.265	97.3260
.94673E+08	119.527	110.693	110.565	103.531
.12623E+09	122.543	114.379	114.258	107.767
.15779E+09	124.805	117.107	116.991	110.874
.18935E+09	126.574	119.235	119.122	113.294
.22090E+09	127.941	120.894	120.785	115.192
.25246E+09	129.069	122.274	122.167	116.774
.28402E+09	129.710	123.121	123.018	117.793
.31558E+09	130.070	123.662	123.561	118.483
.63115E+09	128.884	123.755	123.674	119.653
.94673E+09	124.150	119.887	119.822	116.523
.12623E+10	118.509	114.920	114.867	112.124
.15779E+10	113.257	110.231	110.188	107.902
.18935E+10	108.768	106.217	106.182	104.273
.22090E+10	104.969	102.818	102.790	101.194
.25246E+10	101.432	99.6083	99.5845	98.2421
.28402E+10	98.5887	97.0395	97.0197	95.8863
.31558E+10	96.2700	94.9476	94.9309	93.9685
.63115E+10	85.3442	84.8900	84.8847	84.5622
.94673E+10	81.2124	80.8943	80.8908	80.6669
.12623E+11	78.9564	78.6960	78.6932	78.5108
.15779E+11	77.3030	77.0862	77.0839	76.9326
.18935E+11	75.6924	75.5116	75.5096	75.3838
.22090E+11	74.3066	74.1559	74.1543	74.0498
.25246E+11	73.0858	72.9602	72.9589	72.8721
.28402E+11	72.0055	71.9009	71.8999	71.8277
.31558E+11	71.0774	70.9903	70.9894	70.9295

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 36080.440 TIME= 20:54:26
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose
 VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2874 TEMP	otwoose	35.02	31.56	119.8	.6312E+09
3	NSOL	2610 TEMP	otwoose	35.39	31.56	119.9	.6312E+09
4	NSOL	2556 TEMP	itwoose	35.76	31.56	120.0	.6312E+09
5	NSOL	2504 TEMP	itwiose	36.07	31.56	120.1	.6312E+09
6	NSOL	563 TEMP	stwoose	39.06	31.56	120.8	.6312E+09
7	NSOL	2186 TEMP	stwiose	39.34	31.56	120.9	.6312E+09
8	NSOL	2150 TEMP	htwiose	48.44	31.56	123.1	.6312E+09
9	NSOL	2151 TEMP	gtwiose	53.61	31.56	124.4	.3156E+09
10	NSOL	126 TEMP	c0wiose	57.02	31.56	125.5	.3156E+09
11	NSOL	2085 TEMP	gbwiose	58.12	31.56	125.7	.3156E+09
12	NSOL	2086 TEMP	gbwoose	56.24	31.56	125.0	.3156E+09
13	NSOL	2084 TEMP	sbwiose	53.18	31.56	123.9	.6312E+09
14	NSOL	660 TEMP	sbwoose	53.05	31.56	123.8	.6312E+09
15	NSOL	2236 TEMP	ibwiose	52.84	31.56	123.7	.6312E+09
16	NSOL	2272 TEMP	ibwoose	52.67	31.56	123.7	.6312E+09
17	NSOL	2874 TEMP	obwoose	35.02	31.56	119.8	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:29 NOV 03, 1995 CP= 36083.570
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwoose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	35.0226	35.3920	35.7579	36.0736	39.0645	39.3443
.20000E-05	35.0226	35.3921	35.7579	36.0736	39.0644	39.3442
31.558	35.0226	35.3920	35.7579	36.0735	39.0643	39.3441
.31558E+07	53.1659	53.4964	53.8226	54.1031	56.6987	56.9425
.63116E+07	61.2281	61.5382	61.8435	62.1058	64.5071	64.7330
.94673E+07	66.7550	67.0497	67.3395	67.5882	69.8487	70.0616
.12623E+08	71.0274	71.3094	71.5864	71.8241	73.9716	74.1741
.15779E+08	74.5215	74.7927	75.0589	75.2872	77.3401	77.5338

.18935E+08	77.4771	77.7388	77.9956	78.2156	80.1872	80.3734
.22090E+08	80.0362	80.2895	80.5380	80.7508	82.6510	82.8305
.25246E+08	82.2677	82.5136	82.7547	82.9611	84.7987	84.9724
.28402E+08	84.2386	84.4779	84.7124	84.9131	86.6949	86.8635
.31558E+08	86.0141	86.2473	86.4758	86.6713	88.4030	88.5669
.63115E+08	97.5756	97.7706	97.9611	98.1237	99.5412	99.6759
.94673E+08	103.756	103.932	104.103	104.249	105.513	105.634
.12623E+09	107.977	108.141	108.300	108.436	109.608	109.720
.15779E+09	111.073	111.229	111.380	111.509	112.617	112.723
.18935E+09	113.485	113.634	113.779	113.902	114.961	115.062
.22090E+09	115.376	115.519	115.659	115.778	116.796	116.893
.25246E+09	116.952	117.091	117.226	117.341	118.325	118.418
.28402E+09	117.966	118.101	118.232	118.344	119.297	119.388
.31558E+09	118.652	118.783	118.911	119.019	119.946	120.035
.63115E+09	119.786	119.890	119.991	120.077	120.810	120.880
.94673E+09	116.630	116.715	116.796	116.866	117.464	117.521
.12623E+10	112.212	112.281	112.348	112.405	112.899	112.946
.15779E+10	107.974	108.030	108.086	108.133	108.541	108.580
.18935E+10	104.332	104.379	104.424	104.463	104.802	104.834
.22090E+10	101.243	101.281	101.319	101.351	101.633	101.660
.25246E+10	98.2828	98.3150	98.3464	98.3733	98.6092	98.6317
.28402E+10	95.9203	95.9472	95.9735	95.9960	96.1944	96.2133
.31558E+10	93.9972	94.0198	94.0420	94.0610	94.2289	94.2449
.63115E+10	84.5714	84.5787	84.5859	84.5921	84.6474	84.6527
.94673E+10	80.6732	80.6782	80.6831	80.6873	80.7255	80.7291
.12623E+11	78.5159	78.5199	78.5239	78.5273	78.5583	78.5612
.15779E+11	76.9368	76.9401	76.9434	76.9462	76.9719	76.9743
.18935E+11	75.3873	75.3900	75.3927	75.3951	75.4163	75.4184
.22090E+11	74.0526	74.0549	74.0571	74.0591	74.0767	74.0784
.25246E+11	72.8744	72.8763	72.8782	72.8798	72.8944	72.8958
.28402E+11	71.8296	71.8312	71.8327	71.8341	71.8462	71.8473
.31558E+11	70.9311	70.9324	70.9337	70.9348	70.9448	70.9458

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:29 NOV 03, 1995 CP= 36083.580
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.4408	53.6073	57.0234	58.1167	56.2411	53.1763
.20000E-05	48.4402	53.6064	57.0224	58.1156	56.2401	53.1755
31.558	48.4401	53.6062	57.0222	58.1153	56.2399	53.1752
.31558E+07	64.8245	69.3121	72.2539	73.1033	71.3620	68.5598
.63116E+07	72.0182	76.1718	78.8855	79.6343	77.9805	75.3315
.94673E+07	76.9158	80.8279	83.3787	84.0613	82.4775	79.9475
.12623E+08	80.6827	84.4012	86.8221	87.4548	85.9309	83.5008
.15779E+08	83.7531	87.3091	89.6216	90.2146	88.7430	86.3995
.18935E+08	86.3439	89.7600	91.9796	92.5396	91.1146	88.8475
.22090E+08	88.5830	91.8764	94.0148	94.5468	93.1637	90.9649
.25246E+08	90.5338	93.7199	95.7870	96.2950	94.9494	92.8116
.28402E+08	92.2548	95.3449	97.3486	97.8358	96.5243	94.4417
.31558E+08	93.8051	96.8086	98.7552	99.2241	97.9436	95.9113
.63115E+08	103.954	106.410	107.996	108.356	107.283	105.583
.94673E+08	109.445	111.638	113.053	113.365	112.395	110.862
.12623E+09	113.251	115.286	116.598	116.882	115.975	114.543
.15779E+09	116.060	117.985	119.225	119.490	118.627	117.266
.18935E+09	118.249	120.089	121.274	121.524	120.696	119.390
.22090E+09	119.958	121.727	122.866	123.105	122.306	121.046
.25246E+09	121.377	123.087	124.187	124.416	123.642	122.422
.28402E+09	122.257	123.915	124.983	125.203	124.452	123.266
.31558E+09	122.825	124.437	125.475	125.689	124.957	123.803
.63115E+09	123.090	124.370	125.195	125.365	124.783	123.865

.94673E+09	119.328	120.375	121.051	121.194	120.720	119.971
.12623E+10	114.441	115.307	115.868	115.990	115.600	114.984
.15779E+10	109.820	110.540	111.006	111.109	110.788	110.281
.18935E+10	105.866	106.463	106.852	106.940	106.675	106.255
.22090E+10	102.519	103.017	103.341	103.416	103.197	102.848
.25246E+10	99.3517	99.7693	100.041	100.106	99.9225	99.6320
.28402E+10	96.8191	97.1705	97.3996	97.4547	97.3015	97.0582
.31558E+10	94.7579	95.0554	95.2496	95.2970	95.1679	94.9627
.63115E+10	84.8222	84.9205	84.9850	85.0018	84.9602	84.8938
.94673E+10	80.8461	80.9139	80.9585	80.9704	80.9421	80.8966
.12623E+11	78.6563	78.7113	78.7475	78.7574	78.7345	78.6978
.15779E+11	77.0529	77.0985	77.1285	77.1367	77.1179	77.0876
.18935E+11	75.4836	75.5214	75.5463	75.5532	75.5377	75.5126
.22090E+11	74.1325	74.1638	74.1845	74.1903	74.1774	74.1567
.25246E+11	72.9406	72.9666	72.9837	72.9886	72.9780	72.9609
.28402E+11	71.8845	71.9061	71.9203	71.9244	71.9156	71.9015
.31558E+11	70.9767	70.9945	71.0063	71.0097	71.0025	70.9908

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 20:54:29 NOV 03, 1995 CP= 36083.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP	2236 TEMP	2272 TEMP	2874 TEMP
	sbwoose	ibwiose	ibwoose	obwoose
.10000E-05	53.0481	52.8452	52.6711	35.0226
.20000E-05	53.0472	52.8444	52.6702	35.0226
31.558	53.0470	52.8442	52.6700	35.0226
.31558E+07	68.4352	68.2383	68.0690	53.1659
.63116E+07	75.2105	75.0192	74.8547	61.2281
.94673E+07	79.8297	79.6435	79.4833	66.7550
.12623E+08	83.3860	83.2045	83.0484	71.0274
.15779E+08	86.2874	86.1102	85.9579	74.5215
.18935E+08	88.7379	88.5648	88.4158	77.4771
.22090E+08	90.8577	90.6883	90.5425	80.0362
.25246E+08	92.7065	92.5405	92.3977	82.2677
.28402E+08	94.3386	94.1758	94.0357	84.2386
.31558E+08	95.8102	95.6503	95.5128	86.0141
.63115E+08	105.495	105.357	105.237	97.5756
.94673E+08	110.781	110.654	110.544	103.756
.12623E+09	114.466	114.346	114.242	107.977
.15779E+09	117.193	117.077	116.978	111.073
.18935E+09	119.319	119.208	119.112	113.485
.22090E+09	120.977	120.869	120.776	115.376
.25246E+09	122.355	122.250	122.160	116.952
.28402E+09	123.201	123.099	123.011	117.966
.31558E+09	123.740	123.640	123.554	118.652
.63115E+09	123.815	123.735	123.667	119.786
.94673E+09	119.931	119.867	119.812	116.630
.12623E+10	114.952	114.900	114.855	112.212
.15779E+10	110.254	110.212	110.176	107.974
.18935E+10	106.233	106.199	106.170	104.332
.22090E+10	102.831	102.803	102.778	101.243
.25246E+10	99.6173	99.5941	99.5741	98.2828
.28402E+10	97.0460	97.0268	97.0103	95.9203
.31558E+10	94.9525	94.9364	94.9226	93.9972
.63115E+10	84.8906	84.8856	84.8813	84.5714
.94673E+10	80.8945	80.8911	80.8882	80.6732
.12623E+11	78.6961	78.6934	78.6911	78.5159
.15779E+11	77.0862	77.0840	77.0821	76.9368
.18935E+11	75.5115	75.5097	75.5081	75.3873
.22090E+11	74.1558	74.1543	74.1530	74.0526
.25246E+11	72.9601	72.9589	72.9578	72.8744
.28402E+11	71.9008	71.8998	71.8989	71.8296

.31558E+11	70.9902	70.9894	70.9887	70.9311
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***** ROUTINE COMPLETED ***** CP = 36083.600

End of batch input file

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21h2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21h2.db
FOR POSSIBLE RESUME FROM THIS POINT

NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0

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*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS=      30529
MAXIMUM RECORD NUMBER   =       427
RECORD SIZE (I*4 WORDS) =     16384
PAGE FILE SIZE (MB)     =    26.688

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*-----*
                ANSYS RUN COMPLETED
*-----*
                REV. 5.0 A                                HP 9000/7XX
CP TIME      (sec) =    36108.140      TIME  =  20:55:19
ELAPSED TIME (sec) =    62019.000      DATE   =  11/03/95

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LINE	734	USED	FOR	LINE(S)	1149
LINE	741	USED	FOR	LINE(S)	1155
LINE	742	USED	FOR	LINE(S)	1157
LINE	748	USED	FOR	LINE(S)	1161
LINE	750	USED	FOR	LINE(S)	1162
LINE	751	USED	FOR	LINE(S)	1171
LINE	752	USED	FOR	LINE(S)	1173
LINE	757	USED	FOR	LINE(S)	1177
LINE	758	USED	FOR	LINE(S)	1179
LINE	766	USED	FOR	LINE(S)	1180
LINE	768	USED	FOR	LINE(S)	1181
LINE	769	USED	FOR	LINE(S)	1188
LINE	770	USED	FOR	LINE(S)	1190
LINE	774	USED	FOR	LINE(S)	1193
LINE	775	USED	FOR	LINE(S)	1195
LINE	782	USED	FOR	LINE(S)	1196
LINE	784	USED	FOR	LINE(S)	1197
LINE	785	USED	FOR	LINE(S)	1204
LINE	786	USED	FOR	LINE(S)	1206
LINE	790	USED	FOR	LINE(S)	1209
LINE	791	USED	FOR	LINE(S)	1211
LINE	799	USED	FOR	LINE(S)	1212
LINE	801	USED	FOR	LINE(S)	1213
LINE	802	USED	FOR	LINE(S)	1222
LINE	803	USED	FOR	LINE(S)	1224
LINE	808	USED	FOR	LINE(S)	1228
LINE	809	USED	FOR	LINE(S)	1230
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LINE	819	USED	FOR	LINE(S)	1232
LINE	820	USED	FOR	LINE(S)	1239
LINE	821	USED	FOR	LINE(S)	1241
LINE	825	USED	FOR	LINE(S)	1244
LINE	826	USED	FOR	LINE(S)	1246
LINE	833	USED	FOR	LINE(S)	1247
LINE	835	USED	FOR	LINE(S)	1248
LINE	836	USED	FOR	LINE(S)	1255
LINE	837	USED	FOR	LINE(S)	1257
LINE	841	USED	FOR	LINE(S)	1260
LINE	842	USED	FOR	LINE(S)	1262
LINE	849	USED	FOR	LINE(S)	1263
LINE	851	USED	FOR	LINE(S)	1264
LINE	852	USED	FOR	LINE(S)	1271
LINE	853	USED	FOR	LINE(S)	1273
LINE	857	USED	FOR	LINE(S)	1276
LINE	858	USED	FOR	LINE(S)	1278
LINE	942	USED	FOR	LINE(S)	1346
LINE	946	USED	FOR	LINE(S)	1345
LINE	947	USED	FOR	LINE(S)	1347
LINE	956	USED	FOR	LINE(S)	1365
LINE	959	USED	FOR	LINE(S)	1366
LINE	968	USED	FOR	LINE(S)	1383
LINE	969	USED	FOR	LINE(S)	1381
LINE	970	USED	FOR	LINE(S)	1384
LINE	978	USED	FOR	LINE(S)	1392
LINE	979	USED	FOR	LINE(S)	1394
LINE	989	USED	FOR	LINE(S)	1404
LINE	990	USED	FOR	LINE(S)	1402
LINE	991	USED	FOR	LINE(S)	1405
LINE	999	USED	FOR	LINE(S)	1413
LINE	1000	USED	FOR	LINE(S)	1415
LINE	1085	USED	FOR	LINE(S)	1494
LINE	1088	USED	FOR	LINE(S)	1495
LINE	1097	USED	FOR	LINE(S)	1506
LINE	1100	USED	FOR	LINE(S)	1507
LINE	1109	USED	FOR	LINE(S)	1518
LINE	1112	USED	FOR	LINE(S)	1519
LINE	1118	USED	FOR	LINE(S)	1532
LINE	1119	USED	FOR	LINE(S)	1534
LINE	1126	USED	FOR	LINE(S)	1540
LINE	1127	USED	FOR	LINE(S)	1542

LINE	1134	USED	FOR	LINE(S)	1548
LINE	1135	USED	FOR	LINE(S)	1550
LINE	1142	USED	FOR	LINE(S)	1556
LINE	1143	USED	FOR	LINE(S)	1558
LINE	1150	USED	FOR	LINE(S)	1564
LINE	1151	USED	FOR	LINE(S)	1566
LINE	1158	USED	FOR	LINE(S)	1572
LINE	1159	USED	FOR	LINE(S)	1574
LINE	1165	USED	FOR	LINE(S)	1578
LINE	1167	USED	FOR	LINE(S)	1579
LINE	1168	USED	FOR	LINE(S)	1588
LINE	1169	USED	FOR	LINE(S)	1590
LINE	1174	USED	FOR	LINE(S)	1594
LINE	1175	USED	FOR	LINE(S)	1596
LINE	1183	USED	FOR	LINE(S)	1597
LINE	1185	USED	FOR	LINE(S)	1598
LINE	1186	USED	FOR	LINE(S)	1605
LINE	1187	USED	FOR	LINE(S)	1607
LINE	1191	USED	FOR	LINE(S)	1610
LINE	1192	USED	FOR	LINE(S)	1612
LINE	1199	USED	FOR	LINE(S)	1613
LINE	1201	USED	FOR	LINE(S)	1614
LINE	1202	USED	FOR	LINE(S)	1621
LINE	1203	USED	FOR	LINE(S)	1623
LINE	1207	USED	FOR	LINE(S)	1626
LINE	1208	USED	FOR	LINE(S)	1628
LINE	1216	USED	FOR	LINE(S)	1629
LINE	1218	USED	FOR	LINE(S)	1630
LINE	1219	USED	FOR	LINE(S)	1639
LINE	1220	USED	FOR	LINE(S)	1641
LINE	1225	USED	FOR	LINE(S)	1645
LINE	1226	USED	FOR	LINE(S)	1647
LINE	1234	USED	FOR	LINE(S)	1648
LINE	1236	USED	FOR	LINE(S)	1649
LINE	1237	USED	FOR	LINE(S)	1656
LINE	1238	USED	FOR	LINE(S)	1658
LINE	1242	USED	FOR	LINE(S)	1661
LINE	1243	USED	FOR	LINE(S)	1663
LINE	1250	USED	FOR	LINE(S)	1664
LINE	1252	USED	FOR	LINE(S)	1665
LINE	1253	USED	FOR	LINE(S)	1672
LINE	1254	USED	FOR	LINE(S)	1674
LINE	1258	USED	FOR	LINE(S)	1677
LINE	1259	USED	FOR	LINE(S)	1679
LINE	1266	USED	FOR	LINE(S)	1680
LINE	1268	USED	FOR	LINE(S)	1681
LINE	1269	USED	FOR	LINE(S)	1688
LINE	1270	USED	FOR	LINE(S)	1690
LINE	1274	USED	FOR	LINE(S)	1693
LINE	1275	USED	FOR	LINE(S)	1695
AREA	89	USED	FOR	AREA(S)	1148
AREA	102	USED	FOR	AREA(S)	423
AREA	105	USED	FOR	AREA(S)	1161
AREA	118	USED	FOR	AREA(S)	439
AREA	124	USED	FOR	AREA(S)	1168
AREA	127	USED	FOR	AREA(S)	453
AREA	133	USED	FOR	AREA(S)	1176
AREA	136	USED	FOR	AREA(S)	462
AREA	142	USED	FOR	AREA(S)	1184
AREA	145	USED	FOR	AREA(S)	469
AREA	151	USED	FOR	AREA(S)	1192
AREA	154	USED	FOR	AREA(S)	478
AREA	169	USED	FOR	AREA(S)	1347
AREA	178	USED	FOR	AREA(S)	633
AREA	185	USED	FOR	AREA(S)	640
AREA	194	USED	FOR	AREA(S)	1350
AREA	201	USED	FOR	AREA(S)	645
AREA	210	USED	FOR	AREA(S)	1355
AREA	217	USED	FOR	AREA(S)	1277
AREA	219	USED	FOR	AREA(S)	1362

AREA	228	USED	FOR	AREA(S)	648
AREA	230	USED	FOR	AREA(S)	555
AREA	233	USED	FOR	AREA(S)	1289
AREA	235	USED	FOR	AREA(S)	654
AREA	244	USED	FOR	AREA(S)	1364
AREA	246	USED	FOR	AREA(S)	567
AREA	249	USED	FOR	AREA(S)	1301
AREA	251	USED	FOR	AREA(S)	658
AREA	260	USED	FOR	AREA(S)	1368
AREA	262	USED	FOR	AREA(S)	579
AREA	265	USED	FOR	AREA(S)	1374
AREA	268	USED	FOR	AREA(S)	1307
AREA	271	USED	FOR	AREA(S)	593
AREA	274	USED	FOR	AREA(S)	660
AREA	277	USED	FOR	AREA(S)	1314
AREA	280	USED	FOR	AREA(S)	600
AREA	283	USED	FOR	AREA(S)	666
AREA	286	USED	FOR	AREA(S)	1321
AREA	289	USED	FOR	AREA(S)	607
AREA	292	USED	FOR	AREA(S)	1376
AREA	295	USED	FOR	AREA(S)	1328
AREA	298	USED	FOR	AREA(S)	614
AREA	301	USED	FOR	AREA(S)	670
AREA	304	USED	FOR	AREA(S)	1335
AREA	307	USED	FOR	AREA(S)	621
AREA	310	USED	FOR	AREA(S)	1380
AREA	313	USED	FOR	AREA(S)	1342
AREA	316	USED	FOR	AREA(S)	628
AREA	319	USED	FOR	AREA(S)	1386
AREA	321	USED	FOR	AREA(S)	672
AREA	323	USED	FOR	AREA(S)	679
AREA	325	USED	FOR	AREA(S)	1389
AREA	327	USED	FOR	AREA(S)	684
AREA	329	USED	FOR	AREA(S)	1394
AREA	331	USED	FOR	AREA(S)	1401
AREA	333	USED	FOR	AREA(S)	687
AREA	335	USED	FOR	AREA(S)	693
AREA	337	USED	FOR	AREA(S)	1403
AREA	339	USED	FOR	AREA(S)	697
AREA	341	USED	FOR	AREA(S)	1407
AREA	343	USED	FOR	AREA(S)	1413
AREA	345	USED	FOR	AREA(S)	699
AREA	347	USED	FOR	AREA(S)	705
AREA	349	USED	FOR	AREA(S)	1415
AREA	351	USED	FOR	AREA(S)	709
AREA	353	USED	FOR	AREA(S)	1419
AREA	355	USED	FOR	AREA(S)	1425
AREA	357	USED	FOR	AREA(S)	711
AREA	359	USED	FOR	AREA(S)	717
AREA	361	USED	FOR	AREA(S)	1427
AREA	363	USED	FOR	AREA(S)	721
AREA	365	USED	FOR	AREA(S)	1431
AREA	436	USED	FOR	AREA(S)	779
AREA	449	USED	FOR	AREA(S)	795
AREA	456	USED	FOR	AREA(S)	809
AREA	464	USED	FOR	AREA(S)	818
AREA	472	USED	FOR	AREA(S)	825
AREA	480	USED	FOR	AREA(S)	834
AREA	565	USED	FOR	AREA(S)	911
AREA	577	USED	FOR	AREA(S)	923
AREA	589	USED	FOR	AREA(S)	935
AREA	595	USED	FOR	AREA(S)	949
AREA	602	USED	FOR	AREA(S)	956
AREA	609	USED	FOR	AREA(S)	963
AREA	616	USED	FOR	AREA(S)	970
AREA	623	USED	FOR	AREA(S)	977
AREA	630	USED	FOR	AREA(S)	984
AREA	635	USED	FOR	AREA(S)	989
AREA	638	USED	FOR	AREA(S)	996
AREA	643	USED	FOR	AREA(S)	1001

AREA 650 USED FOR AREA(S) 1004
 AREA 652 USED FOR AREA(S) 1010
 AREA 656 USED FOR AREA(S) 1014
 AREA 662 USED FOR AREA(S) 1016
 AREA 664 USED FOR AREA(S) 1022
 AREA 668 USED FOR AREA(S) 1026
 AREA 674 USED FOR AREA(S) 1028
 AREA 677 USED FOR AREA(S) 1035
 AREA 682 USED FOR AREA(S) 1040
 AREA 689 USED FOR AREA(S) 1043
 AREA 691 USED FOR AREA(S) 1049
 AREA 695 USED FOR AREA(S) 1053
 AREA 701 USED FOR AREA(S) 1055
 AREA 703 USED FOR AREA(S) 1061
 AREA 707 USED FOR AREA(S) 1065
 AREA 713 USED FOR AREA(S) 1067
 AREA 715 USED FOR AREA(S) 1073
 AREA 719 USED FOR AREA(S) 1077
 AREA 792 USED FOR AREA(S) 1135
 AREA 805 USED FOR AREA(S) 1151
 AREA 812 USED FOR AREA(S) 1165
 AREA 820 USED FOR AREA(S) 1174
 AREA 828 USED FOR AREA(S) 1181
 AREA 836 USED FOR AREA(S) 1190
 AREA 921 USED FOR AREA(S) 1267
 AREA 933 USED FOR AREA(S) 1279
 AREA 945 USED FOR AREA(S) 1291
 AREA 951 USED FOR AREA(S) 1305
 AREA 958 USED FOR AREA(S) 1312
 AREA 965 USED FOR AREA(S) 1319
 AREA 972 USED FOR AREA(S) 1326
 AREA 979 USED FOR AREA(S) 1333
 AREA 986 USED FOR AREA(S) 1340
 AREA 991 USED FOR AREA(S) 1345
 AREA 994 USED FOR AREA(S) 1352
 AREA 999 USED FOR AREA(S) 1357
 AREA 1006 USED FOR AREA(S) 1360
 AREA 1008 USED FOR AREA(S) 1366
 AREA 1012 USED FOR AREA(S) 1370
 AREA 1018 USED FOR AREA(S) 1372
 AREA 1020 USED FOR AREA(S) 1378
 AREA 1024 USED FOR AREA(S) 1382
 AREA 1030 USED FOR AREA(S) 1384
 AREA 1033 USED FOR AREA(S) 1391
 AREA 1038 USED FOR AREA(S) 1396
 AREA 1045 USED FOR AREA(S) 1399
 AREA 1047 USED FOR AREA(S) 1405
 AREA 1051 USED FOR AREA(S) 1409
 AREA 1057 USED FOR AREA(S) 1411
 AREA 1059 USED FOR AREA(S) 1417
 AREA 1063 USED FOR AREA(S) 1421
 AREA 1069 USED FOR AREA(S) 1423
 AREA 1071 USED FOR AREA(S) 1429
 AREA 1075 USED FOR AREA(S) 1433

Define Some LOCAL Coordinate Systems for use
 IF THE CSYS,15, WAS USED... THESE MUST BE REDEFINED TO THE
 POUR CANISTER CENTER LINES.... I.E. THE X-Y's ARE ON AXIS

COORDINATE SYSTEM 21 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 21 (CARTESIAN)

COORDINATE SYSTEM 22 DEFINITION. TYPE= 0 (CARTESIAN)
 XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000

ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 22 (CARTESIAN)

COORDINATE SYSTEM 23 DEFINITION. TYPE= 0 (CARTESIAN)

XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 23 (CARTESIAN)

COORDINATE SYSTEM 24 DEFINITION. TYPE= 0 (CARTESIAN)

XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 24 (CARTESIAN)

COORDINATE SYSTEM 31 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= .32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

COORDINATE SYSTEM 32 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= .32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

COORDINATE SYSTEM 33 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= -.32495 -.32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

COORDINATE SYSTEM 34 DEFINITION. TYPE= 1 (CYLINDRICAL)

XC,YC,ZC= -.32495 .32495 .00000E+00
 ANGLES= .00 .00 .00 PARAMETERS= 1.000 1.000
 ORIENTATION= 1.00 .00 .00 .00 1.00 .00 .00 .00 1.00

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #1 - ASSUME NO RAD. DONT DO

TYPE,6,
 VSEL,S,MAT,,5,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
 NSLA,S,1,
 ESURF,

Inner SS. Lid of Can. #1

TYPE,6,
 VSEL,S,MAT,,1,
 ASEL,S,EXT,
 CSYS,31,
 ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
 CSYS,0,
 ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
 ASEL,U,LOC,Z,(TPPT5+0.0001),100.0

NSLA,S,1,
ESURF,

Inner SS. Side of Can. #1

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,31,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #2

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #2

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,32,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #3

TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,

Inner SS. Lid of Can. #3

TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,

Inner SS. Side of Can. #3

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,33,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation

In Pour Canister First; Glass Surf. Can #4

```
TYPE,6,
VSEL,S,MAT,,5,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT6-0.0001),
NSLA,S,1,
ESURF,
```

Inner SS. Lid of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0,
CSYS,0,
ASEL,U,LOC,Z,-100.0,(TPPT5-0.0001),
ASEL,U,LOC,Z,(TPPT5+0.0001),100.0
NSLA,S,1,
ESURF,
```

Inner SS. Side of Can. #4

```
TYPE,6,
VSEL,S,MAT,,1,
ASEL,S,EXT,
ASEL,U,LOC,Z,-100.0,(TPPT6+0.0001)
ASEL,U,LOC,Z,(TPPT5-0.0001),100.0,
CSYS,34,
ASEL,U,LOC,X,(DRMIR+0.0001),100.0
CSYS,0,
NSLA,S,1,
ESURF,
```

Define Elements for radiation - Between Can and IB

Pour Can. Surf.

Top Can #1

ELEMENT TYPE SET TO 26

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE   1 TO      1 STEP      1
```

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

```
UNSELECT    FOR ITEM=LOC COMPONENT=X    BETWEEN .30490    AND    100.00
KABS= 0. TOLERANCE= .000000E+00
```

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2345 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5099
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #1

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #2

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #2

ELEMENT TYPE SET TO 26

```

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN 1.2336      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -100.00      AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .000000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,      AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #2

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X      BETWEEN .30490      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT    FOR ITEM=LOC COMPONENT=Z      BETWEEN -1.5099      AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

```


SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

*** NOTE *** CP= 76.130 TIME= 20:56:37
Page file used.

NUMBER OF ELEMENTS GENERATED= 64

Top Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .00000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #3

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 33 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64

Top Can #4

ELEMENT TYPE SET TO 26

```
SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

RESELECT    FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2346 AND 1.2346
KABS= 0. TOLERANCE= .617300E-02

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT      ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Sides Can #4

ELEMENT TYPE SET TO 26

SELECT      FOR ITEM=MAT COMPONENT=
IN RANGE    1 TO      1 STEP      1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT      AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z BETWEEN 1.2336 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5090
KABS= 0. TOLERANCE= .000000E+00

160 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT    FOR ITEM=LOC COMPONENT=X BETWEEN .000000E+00 AND .30470
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT    FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

20 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)
```

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

160 NODES (OF 8979 DEFINED) SELECTED FROM
20 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 144
Bottom Can #4

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 1 STEP 1

112 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

224 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 34 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

56 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.5099 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

8 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

73 NODES (OF 8979 DEFINED) SELECTED FROM
8 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 64
Inner Barrier Inside Surfaces

ELEMENT TYPE SET TO 26

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 2 TO 2 STEP 1

64 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

152 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.5060 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

140 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND -1.5360
KABS= 0. TOLERANCE= .000000E+00

128 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .78550 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

80 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

962 NODES (OF 8979 DEFINED) SELECTED FROM
80 SELECTED AREAS BY N\$LA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 26 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 832

Define Elements for radiation
In Inner Barrier / Out Barrier Gap - ASSUME NO RAD. SO DONT DEFINE
Top of Inner Barrier Lid

TYPE,16,
VSEL,S,MAT,,2,
ASEL,S,EXT,
ASEL,R,LOC,Z,(TPPT2-0.001),(TPPT2+0.001),
NSLA,S,1,
ESURF,

Bottom of Outer Barrier Lid

TYPE,16,
ASEL,S,LOC,Z,(TPPT1-0.001),(TPPT1+0.001),
ASEL,U,AREA,, 346,
ASEL,U,AREA,, 702,
ASEL,U,AREA,,1058,
ASEL,U,AREA,,1414,
NSLA,S,1,
ESURF,

Side of Outer Barrier WP (Inside Surface)

TYPE,16,
VSEL,S,MAT,,15,
ASEL,S,EXT,
CSYS,11,
ASEL,U,LOC,X,(DCORD-IWALL),100,
CSYS,0,
ASEL,U,LOC,Z,-100,TPPT2,
ASEL,U,LOC,Z,TPPT1,100,
NSLA,S,1,
ESURF,

Define Elements for radiation
Outer Surface of Waste Package

ELEMENT TYPE SET TO 36
Bottom Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -1.6160 AND -1.6140
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320
Side of WP

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 11 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN -.85350 AND .85350
KABS= 0. TOLERANCE= .000000E+00

68 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

800 NODES (OF 8979 DEFINED) SELECTED FROM
68 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 768
Top Lid

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 15 TO 15 STEP 1

84 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT AREAS ON EXTERIOR OF SELECTED VOLUMES

192 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN 1.6140 AND 1.6160
KABS= 0. TOLERANCE= .000000E+00

12 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

337 NODES (OF 8979 DEFINED) SELECTED FROM
12 SELECTED AREAS BY NSLA COMMAND.

GENERATE ELEMENTS ON SURFACE DEFINED BY SELECTED NODES
TYPE= 36 REAL= 1 MATERIAL= 15 ESYS= 0

NUMBER OF ELEMENTS GENERATED= 320

***** ROUTINE COMPLETED ***** CP = 97.080

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

Generate super-elements

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 20:57:09 NOV 03, 1995 CP= 107.180
FOR SUPPORT CALL ROBERT BAWNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1930 NODES (OF 8979 DEFINED) SELECTED FROM
1920 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= ibrcanga.sub

*** WARNING *** CP= 107.620 TIME= 20:57:10
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1920 NUMBER OF NODES= 1930
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 5875.660

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 22:33:38 NOV 03, 1995 CP= 5875.660
FOR SUPPORT CALL ROBERT BAWNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RADIATION MATRIX UTILITY (AUX12) *****

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

1408 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

1728 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

SELECT ALL NODES HAVING ANY ELEMENT IN ELEMENT SET.

1750 NODES (OF 8979 DEFINED) SELECTED FROM
1728 SELECTED ELEMENTS BY NSLE COMMAND.

STEFAN-BOLTZMANN CONSTANT= .56700E-07

THREE DIMENSIONAL GEOMETRY

HIDDEN SURFACE (SLOW) METHOD
NUMBER OF ZONES= 100

WRITE RADIATION MATRIX TO FILE= obrdrwga.sub

*** WARNING *** CP= 5876.280 TIME= 22:33:39
No space node defined. An enclosed system need not have a space node.
For an open system a space node is required to account for radiation losses.

NUMBER OF ELEMENTS= 1728 NUMBER OF NODES= 1750
DEFINE 100 RADIAL ZONES, 20200 RAYS
DEFINE THE 20200 RAY POINTS
SORT THE 20200 RAY POINTS

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ROUTINE COMPLETED ***** CP = 7844.360

- DO NOT DO RADITATION FOR INTERNAL P. CAN OR THE I/O B. GAP
/AUX12,
ESEL,S,TYPE,,16,
NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,iobargap,
ESEL,ALL,
NSEL,ALL,
FINISH
/COM,
/AUX12,
ESEL,S,TYPE,,6,

NSLE,S,
STEF,5.67E-8,
GEOM,0,
VTYPE,0,100,
WRITE,glscangap,

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10656 STEP 1

10368 ELEMENTS (OF 10368 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:30 NOV 03, 1995 CP= 7844.450
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS ANALYSIS DEFINITION (PREP7) *****

ELEMENT TYPE SET TO 18
SE,glscangap,
SE,iobargap,

SUPERELEMENT 10657 ibrcanga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10657

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10657

SUPERELEMENT 10658 obrdrwga NODE TOLERANCE = .10000E-03

STORE DOFS OF SUPERELEMENT 10658

CURRENT NODAL DOF SET IS TEMP
THREE-DIMENSIONAL MODEL

STORE NODES OF SUPERELEMENT 10658
Delete radiation edge elements

SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 6 TO 6 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 16 TO 16 STEP 1

0 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 26 TO 26 STEP 1

1920 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 36 TO 36 STEP 1

3328 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

ALSO SELECT FOR ITEM=TYPE COMPONENT=
IN RANGE 46 TO 46 STEP 1

3648 ELEMENTS (OF 10370 DEFINED) SELECTED BY ESEL COMMAND.

DELETE ALL SELECTED ELEMENTS.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

ALL SELECT FOR ITEM=LINE COMPONENT=
IN RANGE 1 TO 1695 STEP 1

1359 LINES (OF 1359 DEFINED) SELECTED BY LSEL COMMAND.

Define SHELL Element thicknesses; Required for solution:

REAL CONSTANT SET 1 ITEMS 1 TO 6
.10000E-02 .10000E-02 .10000E-02 .10000E-02 .00000E+00 .00000E+00

***** ROUTINE COMPLETED ***** CP = 7847.270

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

GAPS in WP between glass, can, Inner Barrier and Outer Barrier.....

DONT MESH; Either Assume its VOID or its meshed earlier

This section used only if both rad. and He conducti
is used in the model.

He/Air in WP I/O Bar. Gap

/PREP7
ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 96, 97,1
VMESH,197,198,1
VMESH,298,299,1
VMESH,399,400,1

Now Mesh inside of WP; DONT MESH Assume VOID
He space in WP

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 17, 24,1
VMESH,118,125,1
VMESH,219,226,1
VMESH,320,327,1

VMESH, 57, 68,1
VMESH,158,169,1
VMESH,259,270,1
VMESH,360,371,1

VMESH, 81,
VMESH,182,
VMESH,283,
VMESH,384,

VMESH, 90,
VMESH,191,
VMESH,292,
VMESH,393,

Now Mesh inside of Can DONT MESH Assume VOID
He/Air in Pour Can.

ESHAPE,2,
MAT, 7,
TYPE,2,
VMESH, 37, 40,1
VMESH,138,141,1
VMESH,239,242,1
VMESH,340,343,1

NUMMRG,ELEM,
NUMMRG,NODE,
NUMMRG,KP,
FINISH

Create element mesh plots to illustrate model

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:46 NOV 03, 1995 CP= 7856.810
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW Glass Form Waste Package

***** ANSYS RESULTS INTERPRETATION (POST1) *****
View model meshing from drift end view

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 .00000E+00 .00000E+00 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

164 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3072 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
164 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=Z BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

5 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3232 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
5 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshfct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshfct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP FRONT CUT AWAY VIEW OF MESH
View model meshing for 45 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshcut.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshcut.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP CUT AWAY VIEW OF MESH
View model meshing for 90 side cut-away

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 .00000E+00 .00000E+00

DISTANCE FOR WINDOW 1 5.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3200 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.
ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3392 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

/SHOW SWITCH PLOTS TO FILE meshsct.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

PRODUCE ELEMENT PLOT IN DSYS = 0

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE meshsct.grph - RASTER MODE.
DISPLAY TITLE=
DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 7866.510

Set solution parameters and apply B.C.'s

Solve steady-state for initial conditions
with WP surface equal to drift ambient
temperature from repository model.

***** ANSYS SOLUTION ROUTINE *****

PERFORM A TRANSIENT ANALYSIS
THIS WILL BE A NEW ANALYSIS

USE THE DEFAULT NEWTON-RAPHSON OPTION FOR ALL DOFS
AND USE THE DEFAULT ADAPTIVE DESCENT OPTION

*** NOTE *** CP= 7866.520 TIME= 23:06:56
Damping (if present) may be ignored only in reduced transient analyses.

PERFORM A FULL TRANSIENT ANALYSIS

TEMPERATURE OFFSET FROM ABSOLUTE ZERO= 273.150
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1409103 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .10000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****

*** NOTE *** CP= 7868.870 TIME= 23:06:58
All shape tests were bypassed for elements associated with the solid
model, because most of them were already done at AMESH or VMESH. Use
CHECK if desired to perform all of the element tests.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 23:06:58 NOV 03, 1995 CP= 7868.870
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

SOLUTION OPTIONS

PROBLEM DIMENSIONALITY.3-D
DEGREES OF FREEDOM.TEMP
ANALYSIS TYPETRANSIENT
SOLUTION METHOD.FULL
OFFSET TEMPERATURE FROM ABSOLUTE ZERO 273.15
NEWTON-RAPHSON OPTIONPROGRAM CHOSEN

*** NOTE *** CP= 7870.310 TIME= 23:07:00
This load step will be a static (steady-state) step.

*** NOTE *** CP= 7870.760 TIME= 23:07:00
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

LOAD STEP OPTIONS

LOAD STEP NUMBER. 1
TIME AT END OF THE LOAD STEP.10000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

***** CENTROID, MASS, AND MASS MOMENTS OF INERTIA *****

CALCULATIONS ASSUME ELEMENT MASS AT ELEMENT CENTROID

TOTAL MASS = 19865.

CENTROID	MOM. OF INERTIA ABOUT ORIGIN	MOM. OF INERTIA ABOUT CENTROID
XC = -.46938E-12	IXX = .3128E+05	IXX = .3099E+05
YC = -.14018E-01	IYY = .3099E+05	IYY = .3070E+05
ZC = -.11988	IZZ = 9965.	IZZ = 9961.
	IXY = .8715E-08	IXY = .8846E-08
	IYZ = .4529E-10	IYZ = 33.38
	IZX = -.2956E-08	IZX = -.1838E-08

*** MASS SUMMARY BY ELEMENT TYPE ***

TYPE	MASS
2	19692.2
11	172.638

Range of element maximum matrix coefficients in global coordinates
Maximum= 11.1632414 at element 4464.
Minimum= 4.837293208E-09 at element 10657.

*** WARNING *** CP= 7909.920 TIME= 23:08:39
Coefficient ratio exceeds 1.0e8 - Check results.

*** ELEMENT MATRIX FORMULATION TIMES | TYPE | NUMBER | ENAME | TOTAL CP | AVE CP | |------|--------|-------|----------|--------| |------|--------|-------|----------|--------|

2	6400	SOLID70	22.440	.004
11	320	SHELL57	.830	.003
18	2	MATRIX50	5.530	2.765

Time at end of element matrix formulation CP= 7909.92.

HT FLOW CONVERGENCE VALUE= 155.8 CRITERION= .1558

Estimated number of active DOF= 8639.

Maximum wavefront= 2002.

Time at end of matrix triangularization CP= 8985.21.

Equation solver maximum pivot= 45.7737291 at node 8097 TEMP.
Equation solver minimum pivot= 0.21783452 at node 3498 TEMP.
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 194.5
HT FLOW CONVERGENCE VALUE= 460.6 CRITERION= .9967E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -52.22
HT FLOW CONVERGENCE VALUE= 55.48 CRITERION= .9967E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -13.25
HT FLOW CONVERGENCE VALUE= 10.30 CRITERION= .9967E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9952
HT FLOW CONVERGENCE VALUE= .6885 CRITERION= .9967E-01
EQUIL ITER 5 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2108
HT FLOW CONVERGENCE VALUE= .1701 CRITERION= .9967E-01
EQUIL ITER 6 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1596E-01
HT FLOW CONVERGENCE VALUE= .9934E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 6

*** ELEMENT RESULT CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	14.350	.002
11	320	SHELL57	.400	.001
18	2	MATRIX50	8.740	4.370

*** NODAL LOAD CALCULATION TIMES

TYPE	NUMBER	ENAME	TOTAL CP	AVE CP
2	6400	SOLID70	1.350	.000
11	320	SHELL57	.090	.000
18	2	MATRIX50	.000	.000

*** LOAD STEP 1 SUBSTEP 1 COMPLETED. CUM ITER = 6
*** TIME = .100000E-05 TIME INC = .100000E-05

*** PROBLEM STATISTICS
ACTUAL NO. OF ACTIVE DEGREES OF FREEDOM = 8639
R.M.S. WAVEFRONT SIZE = 964.8

*** ANSYS BINARY FILE STATISTICS
BUFFER SIZE USED= 4096
57.625 MB WRITTEN ON ELEMENT MATRIX FILE: glsh21j2.emat
5.953 MB WRITTEN ON ELEMENT SAVED DATA FILE: glsh21j2.esav
58.766 MB WRITTEN ON TRIANGULARIZED MATRIX FILE: glsh21j2.tri
.047 MB WRITTEN ON SUBSTRUCTURE DOF SOLUTION FILE: glsh21j2.dsub
5.297 MB WRITTEN ON RESULTS FILE: glsh21j2.rth

Solve steady-state for initial conditions
with WP surface temperatures from repository
steady-state solution.
Apply Drift Wall Temp. BC

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

```
1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 26.1410232 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.
Apply Heat Generation BC to glass

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1475.75403 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.
Set Solution Params and solve

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

TIME= .20000E-05

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

STEP BOUNDARY CONDITION KEY= 0

***** ANSYS SOLVE COMMAND *****
```

*** WARNING *** CP= 14573.700 TIME= 01:19:24
This load step will be a static (steady-state) step.

*** NOTE *** CP= 14574.140 TIME= 01:19:24
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning messages.

*** NOTE *** CP= 14574.140 TIME= 01:19:24
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:19:24 NOV 04, 1995 CP= 14574.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 2
TIME AT END OF THE LOAD STEP.20000E-05
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .9952E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3108E-02
HT FLOW CONVERGENCE VALUE= .2426E-02 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 2 SUBSTEP 1 COMPLETED. CUM ITER = 7
*** TIME = .200000E-05 TIME INC = .100000E-05

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

SOLVE A SET OF STEADY STATE POINTS FOR GRINS AND GIGGLES

DO NOT INCLUDE TRANSIENT EFFECTS FOR ALL DOFS THIS LOAD STEP

USE AUTOMATIC TIME STEPPING THIS LOAD STEP

Time substep ranges from 10 sec to 1/4 loadstep
NSUBST,10,20,4,ON
Begin Transient
Apply loads and solve for 0 to .9 years

*DO LOOP ON PARAMETER= TM FROM 31.558 TO .28402E+08 BY .31558E+07

TIME= 31.558

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

```
960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION      1
1475.75403      .0000000000E+00 .0000000000E+00 .0000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES      1 TO 10009 BY 1
REAL= 26.1410232      IMAG= .0000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 14865.940 TIME= 01:30:03
This load step will be a static (steady-state) step.
```

*** NOTE *** CP= 14866.380 TIME= 01:30:03
The step data was checked and warning messages were found.
Please review output or errors file (glsh21j2.err) for these warning messages.

*** NOTE *** CP= 14866.380 TIME= 01:30:03
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:30:03 NOV 04, 1995 CP= 14866.380
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 3
TIME AT END OF THE LOAD STEP. 31.558
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGED YES (EXIT)
CONVERGENCE CONTROLS. USE DEFAULTS
PRINT OUTPUT CONTROLS NO PRINTOUT
DATABASE OUTPUT CONTROLS. ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= .2426E-02 CRITERION= .9967E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2529E-03
HT FLOW CONVERGENCE VALUE= .1517E-03 CRITERION= .9967E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 1
*** LOAD STEP 3 SUBSTEP 1 COMPLETED. CUM ITER = 8
*** TIME = 31.5576 TIME INC = 31.5576

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15141.350 TIME= 01:40:17
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 01:40:17 NOV 04, 1995 CP= 15141.790
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 84.16 CRITERION= .1281
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 12.18
HT FLOW CONVERGENCE VALUE= 13.71 CRITERION= .9659E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.668
HT FLOW CONVERGENCE VALUE= 2.054 CRITERION= .9659E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1572
HT FLOW CONVERGENCE VALUE= .1095 CRITERION= .9659E-01
EQUIL ITER 4 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3283E-01
HT FLOW CONVERGENCE VALUE= .2478E-01 CRITERION= .9659E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 4
*** LOAD STEP 4 SUBSTEP 1 COMPLETED. CUM ITER = 12
*** TIME = .315579E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 15977.540 TIME= 02:09:24
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:09:25 NOV 04, 1995 CP= 15977.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 47.91 CRITERION= .1053
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 6.278
HT FLOW CONVERGENCE VALUE= 6.569 CRITERION= .9378E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.294
HT FLOW CONVERGENCE VALUE= .9809 CRITERION= .9378E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7312E-01
HT FLOW CONVERGENCE VALUE= .4985E-01 CRITERION= .9378E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 5 SUBSTEP 1 COMPLETED. CUM ITER = 15
*** TIME = .631155E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 16621.130 TIME= 02:32:10
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:32:11 NOV 04, 1995 CP= 16621.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 35.40 CRITERION= .9779E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 4.412
HT FLOW CONVERGENCE VALUE= 4.372 CRITERION= .9119E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8641
HT FLOW CONVERGENCE VALUE= .6407 CRITERION= .9119E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4990E-01
HT FLOW CONVERGENCE VALUE= .3140E-01 CRITERION= .9119E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 6 SUBSTEP 1 COMPLETED. CUM ITER = 18
*** TIME = .946731E+07 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17264.570 TIME= 02:54:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 02:54:53 NOV 04, 1995 CP= 17265.010
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.69 CRITERION= .9331E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.455
HT FLOW CONVERGENCE VALUE= 3.272 CRITERION= .8883E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6475
HT FLOW CONVERGENCE VALUE= .4691 CRITERION= .8883E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3757E-01
HT FLOW CONVERGENCE VALUE= .2227E-01 CRITERION= .8883E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3

*** LOAD STEP 7 SUBSTEP 1 COMPLETED. CUM ITER = 21
*** TIME = .126231E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 17907.900 TIME= 03:17:37
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:17:37 NOV 04, 1995 CP= 17908.340
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 24.27 CRITERION= .8996E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.845
HT FLOW CONVERGENCE VALUE= 2.592 CRITERION= .8665E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5131
HT FLOW CONVERGENCE VALUE= .3633 CRITERION= .8665E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2966E-01
HT FLOW CONVERGENCE VALUE= .1675E-01 CRITERION= .8665E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 8 SUBSTEP 1 COMPLETED. CUM ITER = 24
*** TIME = .157788E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 18551.810 TIME= 03:40:18
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 03:40:19 NOV 04, 1995 CP= 18552.260
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 21.07 CRITERION= .8721E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.417
HT FLOW CONVERGENCE VALUE= 2.127 CRITERION= .8465E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4213
HT FLOW CONVERGENCE VALUE= .2916 CRITERION= .8465E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2417E-01
HT FLOW CONVERGENCE VALUE= .1308E-01 CRITERION= .8465E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 9 SUBSTEP 1 COMPLETED. CUM ITER = 27
*** TIME = .189346E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19196.800 TIME= 04:03:02
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:03:02 NOV 04, 1995 CP= 19197.240
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 18.63 CRITERION= .8485E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.099
HT FLOW CONVERGENCE VALUE= 1.790 CRITERION= .8280E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3550
HT FLOW CONVERGENCE VALUE= .2402 CRITERION= .8280E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2013E-01

HT FLOW CONVERGENCE VALUE= .1050E-01 CRITERION= .8280E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 10 SUBSTEP 1 COMPLETED. CUM ITER = 30
*** TIME = .220904E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 19842.150 TIME= 04:25:43
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:25:44 NOV 04, 1995 CP= 19842.590
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 16.72 CRITERION= .8279E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.854
HT FLOW CONVERGENCE VALUE= 1.542 CRITERION= .8110E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.3053
HT FLOW CONVERGENCE VALUE= .2019 CRITERION= .8110E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1698E-01
HT FLOW CONVERGENCE VALUE= .8589E-02 CRITERION= .8110E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 11 SUBSTEP 1 COMPLETED. CUM ITER = 33
*** TIME = .252461E+08 TIME INC = .315576E+07

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 20491.780 TIME= 04:48:31
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 04:48:32 NOV 04, 1995 CP= 20492.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 15.16 CRITERION= .8095E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.658
HT FLOW CONVERGENCE VALUE= 1.345 CRITERION= .7954E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2662
HT FLOW CONVERGENCE VALUE= .1723 CRITERION= .7954E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1457E-01
HT FLOW CONVERGENCE VALUE= .7155E-02 CRITERION= .7954E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 12 SUBSTEP 1 COMPLETED. CUM ITER = 36
*** TIME = .284019E+08 TIME INC = .315576E+07
Apply loads and solve for 1 to 9 years

*DO LOOP ON PARAMETER= TM FROM .31558E+08 TO .28402E+09 BY .31558E+08

TIME= .31558E+08

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
1156.10879 .000000000E+00 .000000000E+00 .000000000E+00


```
ALL SELECT   FOR ITEM=VOLU COMPONENT=
IN RANGE     1 TO      404 STEP      1

      404 VOLUMES (OF      404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT   FOR ITEM=ELEM COMPONENT=
IN RANGE     1 TO    10658 STEP      1

      6722 ELEMENTS (OF    6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT       FOR ITEM=AREA COMPONENT=
IN RANGE     17 TO      26 STEP      1

      10 AREAS (OF    1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT       ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,   AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

      340 NODES (OF    8979 DEFINED) SELECTED FROM
      10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE        1 TO    10009 BY      1

NUMBER OF SPECIFIED CONSTRAINTS DELETED=      340

ALL SELECT   FOR ITEM=AREA COMPONENT=
IN RANGE     1 TO    1434 STEP      1

      1290 AREAS (OF    1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT   FOR ITEM=NODE COMPONENT=
IN RANGE     1 TO    10009 STEP      1

      8979 NODES (OF    8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT       FOR ITEM=AREA COMPONENT=
IN RANGE     17 TO      26 STEP      1

      10 AREAS (OF    1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT       ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES,   AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

      340 NODES (OF    8979 DEFINED) SELECTED FROM
      10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES      1 TO    10009 BY      1
REAL= 64.8359082      IMAG= .000000000E+00

ALL SELECT   FOR ITEM=AREA COMPONENT=
IN RANGE     1 TO    1434 STEP      1

      1290 AREAS (OF    1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT   FOR ITEM=NODE COMPONENT=
IN RANGE     1 TO    10009 STEP      1

      8979 NODES (OF    8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE      COMMAND *****

*** WARNING ***                      CP= 21142.130   TIME= 05:11:20
This load step will be a static (steady-state) step.

*** NOTE ***                        CP= 21142.570   TIME= 05:11:20
The step data was checked and warning messages were found.
Please review output or errors file ( glsh21j2.err ) for these warning
messages.
```

*** NOTE *** CP= 21142.570 TIME= 05:11:20
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:11:20 NOV 04, 1995 CP= 21142.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 13
TIME AT END OF THE LOAD STEP.31558E+08
AUTOMATIC TIME STEPPING ON
INITIAL NUMBER OF SUBSTEPS 0
MAXIMUM NUMBER OF SUBSTEPS 0
MINIMUM NUMBER OF SUBSTEPS 1
MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
STEP CHANGE BOUNDARY CONDITIONS NO
TRANSIENT (INERTIA) EFFECTS OFF
TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
CONVERGENCE CONTROLS.USE DEFAULTS
PRINT OUTPUT CONTROLSNO PRINTOUT
DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 13.86 CRITERION= .7929E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.498
HT FLOW CONVERGENCE VALUE= 1.188 CRITERION= .7808E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2349
HT FLOW CONVERGENCE VALUE= .1491 CRITERION= .7808E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1264E-01
HT FLOW CONVERGENCE VALUE= .6041E-02 CRITERION= .7808E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 13 SUBSTEP 1 COMPLETED. CUM ITER = 39
*** TIME = .315576E+08 TIME INC = .315576E+07

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 21792.450 TIME= 05:34:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:34:09 NOV 04, 1995 CP= 21792.890
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 93.19 CRITERION= .1151
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 9.959
HT FLOW CONVERGENCE VALUE= 6.187 CRITERION= .6827E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.274
HT FLOW CONVERGENCE VALUE= .6768 CRITERION= .6827E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5573E-01
HT FLOW CONVERGENCE VALUE= .2253E-01 CRITERION= .6827E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 14 SUBSTEP 1 COMPLETED. CUM ITER = 42
*** TIME = .631152E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 22436.710 TIME= 05:56:51
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 05:56:51 NOV 04, 1995 CP= 22437.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 56.40 CRITERION= .8453E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 5.615
HT FLOW CONVERGENCE VALUE= 3.387 CRITERION= .6316E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.6692
HT FLOW CONVERGENCE VALUE= .2977 CRITERION= .6316E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2537E-01
HT FLOW CONVERGENCE VALUE= .1008E-01 CRITERION= .6316E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 15 SUBSTEP 1 COMPLETED. CUM ITER = 45
*** TIME = .946728E+08 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23088.060 TIME= 06:19:40
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:19:40 NOV 04, 1995 CP= 23088.510
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 38.85 CRITERION= .7146E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 3.716
HT FLOW CONVERGENCE VALUE= 2.141 CRITERION= .6005E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.4238
HT FLOW CONVERGENCE VALUE= .1700 CRITERION= .6005E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1447E-01
HT FLOW CONVERGENCE VALUE= .5639E-02 CRITERION= .6005E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 16 SUBSTEP 1 COMPLETED. CUM ITER = 48
*** TIME = .126230E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 23734.580 TIME= 06:42:24
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 06:42:25 NOV 04, 1995 CP= 23735.030
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 28.82 CRITERION= .6458E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.683
HT FLOW CONVERGENCE VALUE= 1.497 CRITERION= .5783E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2942
HT FLOW CONVERGENCE VALUE= .1125 CRITERION= .5783E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9479E-02
HT FLOW CONVERGENCE VALUE= .3518E-02 CRITERION= .5783E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 17 SUBSTEP 1 COMPLETED. CUM ITER = 51
*** TIME = .157788E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 24387.450 TIME= 07:05:15
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:05:15 NOV 04, 1995 CP= 24387.890
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.15 CRITERION= .6024E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 2.022
HT FLOW CONVERGENCE VALUE= 1.076 CRITERION= .5605E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2132
HT FLOW CONVERGENCE VALUE= .7894E-01 CRITERION= .5605E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .6770E-02
HT FLOW CONVERGENCE VALUE= .2378E-02 CRITERION= .5605E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 18 SUBSTEP 1 COMPLETED. CUM ITER = 54
*** TIME = .189346E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25040.650 TIME= 07:28:05
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:28:05 NOV 04, 1995 CP= 25041.090
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 17.55 CRITERION= .5724E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.577
HT FLOW CONVERGENCE VALUE= .7212 CRITERION= .5450E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1602
HT FLOW CONVERGENCE VALUE= .5861E-01 CRITERION= .5450E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5159E-02
HT FLOW CONVERGENCE VALUE= .1737E-02 CRITERION= .5450E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 19 SUBSTEP 1 COMPLETED. CUM ITER = 57
*** TIME = .220903E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 25696.700 TIME= 07:50:58
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 07:50:58 NOV 04, 1995 CP= 25697.140
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 14.84 CRITERION= .5514E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= 1.318
HT FLOW CONVERGENCE VALUE= .5370 CRITERION= .5312E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.1295
HT FLOW CONVERGENCE VALUE= .4664E-01 CRITERION= .5312E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 20 SUBSTEP 1 COMPLETED. CUM ITER = 59
*** TIME = .252461E+09 TIME INC = .315576E+08

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 26159.930 TIME= 08:07:29
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:07:30 NOV 04, 1995 CP= 26160.380
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.713 CRITERION= .5270E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8513
HT FLOW CONVERGENCE VALUE= .3238 CRITERION= .5182E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7916E-01
HT FLOW CONVERGENCE VALUE= .2886E-01 CRITERION= .5182E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 21 SUBSTEP 1 COMPLETED. CUM ITER = 61
*** TIME = .284018E+09 TIME INC = .315576E+08
Apply loads and solve for 10 to 90 years

*DO LOOP ON PARAMETER= TM FROM .31558E+09 TO .28402E+10 BY .31558E+09
TIME= .31558E+09

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
748.887562 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

HT FLOW CONVERGENCE VALUE= 6.828 CRITERION= .5102E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5905
HT FLOW CONVERGENCE VALUE= .2252 CRITERION= .5058E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.5379E-01
HT FLOW CONVERGENCE VALUE= .1938E-01 CRITERION= .5058E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 22 SUBSTEP 1 COMPLETED. CUM ITER = 63
*** TIME = .315576E+09 TIME INC = .315576E+08

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27092.470 TIME= 08:40:35
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 08:40:35 NOV 04, 1995 CP= 27092.910
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 29.31 CRITERION= .4868E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.427
HT FLOW CONVERGENCE VALUE= 1.220 CRITERION= .4021E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.2408
HT FLOW CONVERGENCE VALUE= .6593E-01 CRITERION= .4021E-01
EQUIL ITER 3 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .9700E-02
HT FLOW CONVERGENCE VALUE= .2189E-02 CRITERION= .4021E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 3
*** LOAD STEP 23 SUBSTEP 1 COMPLETED. CUM ITER = 66
*** TIME = .631152E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 27747.550 TIME= 09:03:28
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:03:28 NOV 04, 1995 CP= 27747.990
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.42 CRITERION= .3281E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.327
HT FLOW CONVERGENCE VALUE= .9091 CRITERION= .3214E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.7959E-01
HT FLOW CONVERGENCE VALUE= .1366E-01 CRITERION= .3214E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 24 SUBSTEP 1 COMPLETED. CUM ITER = 68
*** TIME = .946728E+09 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28215.570 TIME= 09:20:02
This load step will be a static (steady-state) step.
1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:20:03 NOV 04, 1995 CP= 28216.020
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.83 CRITERION= .3385E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -7.249
HT FLOW CONVERGENCE VALUE= .7867 CRITERION= .2579E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .8086E-01
HT FLOW CONVERGENCE VALUE= .1101E-01 CRITERION= .2579E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 25 SUBSTEP 1 COMPLETED. CUM ITER = 70
*** TIME = .126230E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 28684.780 TIME= 09:36:38
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:36:39 NOV 04, 1995 CP= 28685.220
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 22.63 CRITERION= .3031E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -6.269
HT FLOW CONVERGENCE VALUE= .6075 CRITERION= .2078E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7105E-01
HT FLOW CONVERGENCE VALUE= .7874E-02 CRITERION= .2078E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 26 SUBSTEP 1 COMPLETED. CUM ITER = 72
*** TIME = .157788E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29147.060 TIME= 09:53:09
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 09:53:09 NOV 04, 1995 CP= 29147.500
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 19.37 CRITERION= .2536E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -5.181
HT FLOW CONVERGENCE VALUE= .4363 CRITERION= .1684E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5291E-01
HT FLOW CONVERGENCE VALUE= .4715E-02 CRITERION= .1684E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 27 SUBSTEP 1 COMPLETED. CUM ITER = 74
*** TIME = .189346E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 29612.500 TIME= 10:09:42
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:09:42 NOV 04, 1995 CP= 29612.940
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 16.61 CRITERION= .2132E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -4.297
HT FLOW CONVERGENCE VALUE= .3390 CRITERION= .1373E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3927E-01

HT FLOW CONVERGENCE VALUE= .2921E-02 CRITERION= .1373E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 28 SUBSTEP 1 COMPLETED. CUM ITER = 76
*** TIME = .220903E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30073.450 TIME= 10:26:10
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:26:10 NOV 04, 1995 CP= 30073.900
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 17.08 CRITERION= .2032E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.811
HT FLOW CONVERGENCE VALUE= .2673 CRITERION= .1128E-01
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .3573E-01
HT FLOW CONVERGENCE VALUE= .2267E-02 CRITERION= .1128E-01 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 29 SUBSTEP 1 COMPLETED. CUM ITER = 78
*** TIME = .252461E+10 TIME INC = .315576E+09

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 30538.810 TIME= 10:42:42
This load step will be a static (steady-state) step.

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 10:42:43 NOV 04, 1995 CP= 30539.250
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.18 CRITERION= .1604E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.034
HT FLOW CONVERGENCE VALUE= .1781 CRITERION= .9340E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2364E-01
HT FLOW CONVERGENCE VALUE= .1257E-02 CRITERION= .9340E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 30 SUBSTEP 1 COMPLETED. CUM ITER = 80
*** TIME = .284018E+10 TIME INC = .315576E+09
Apply loads and solve for 100 to 1000 years

*DO LOOP ON PARAMETER= TM FROM .31558E+10 TO .31558E+11 BY .31558E+10

TIME= .31558E+10

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 5 TO 5 STEP 1

32 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

960 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
32 SELECTED VOLUMES BY ESLV COMMAND.

SPECIFIED BODY FORCE HGEN FOR ALL SELECTED ELEMENTS AT STARTING LOCATION 1
115.610895 .000000000E+00 .000000000E+00 .000000000E+00

ALL SELECT FOR ITEM=VOLU COMPONENT=
IN RANGE 1 TO 404 STEP 1

```
404 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

DELETE SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES
RANGE 1 TO 10009 BY 1

NUMBER OF SPECIFIED CONSTRAINTS DELETED= 340

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

SELECT ALL NODES (INTERIOR TO AREA, INTERIOR TO LINES, AND AT
KEYPOINTS) RELATED TO SELECTED AREA SET.

340 NODES (OF 8979 DEFINED) SELECTED FROM
10 SELECTED AREAS BY NSLA COMMAND.

SPECIFIED CONSTRAINT TEMP FOR SELECTED NODES 1 TO 10009 BY 1
REAL= 84.0286752 IMAG= .000000000E+00

ALL SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 1 TO 1434 STEP 1

1290 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALL SELECT FOR ITEM=NODE COMPONENT=
IN RANGE 1 TO 10009 STEP 1

8979 NODES (OF 8979 DEFINED) SELECTED BY NSEL COMMAND.

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31003.700 TIME= 10:59:14
This load step will be a static (steady-state) step.

*** NOTE *** CP= 31004.140 TIME= 10:59:15
The step data was checked and warning messages were found.
Please review output or errors file ( glsh21j2.err ) for these warning
messages.

*** NOTE *** CP= 31004.140 TIME= 10:59:15
Nonlinear analysis, NROPT set to 1 (full Newton-Raphson solution
procedure) for ALL DOFs.
```

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 10:59:15 NOV 04, 1995 CP= 31004.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

LOAD STEP OPTIONS

LOAD STEP NUMBER. 31
 TIME AT END OF THE LOAD STEP.31558E+10
 AUTOMATIC TIME STEPPING ON
 INITIAL NUMBER OF SUBSTEPS 0
 MAXIMUM NUMBER OF SUBSTEPS 0
 MINIMUM NUMBER OF SUBSTEPS 1
 MAXIMUM NUMBER OF EQUILIBRIUM ITERATIONS. 25
 STEP CHANGE BOUNDARY CONDITIONS NO
 TRANSIENT (INERTIA) EFFECTS OFF
 TERMINATE ANALYSIS IF NOT CONVERGEDYES (EXIT)
 CONVERGENCE CONTROLS.USE DEFAULTS
 PRINT OUTPUT CONTROLSNO PRINTOUT
 DATABASE OUTPUT CONTROLS.ALL DATA WRITTEN
 FOR THE LAST SUBSTEP

HT FLOW CONVERGENCE VALUE= 10.95 CRITERION= .1336E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -2.482
 HT FLOW CONVERGENCE VALUE= .1254 CRITERION= .7808E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1709E-01
 HT FLOW CONVERGENCE VALUE= .7832E-03 CRITERION= .7808E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 31 SUBSTEP 1 COMPLETED. CUM ITER = 82
 *** TIME = .315576E+10 TIME INC = .315576E+09

*ENDDO INDEX= TM

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31469.090 TIME= 11:15:47
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 11:15:48 NOV 04, 1995 CP= 31469.540
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 55.65 CRITERION= .5544E-01
 EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -10.47
 HT FLOW CONVERGENCE VALUE= .2898 CRITERION= .2424E-02
 EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8112E-01
 HT FLOW CONVERGENCE VALUE= .1380E-02 CRITERION= .2424E-02 <<< CONVERGED
 >>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
 *** LOAD STEP 32 SUBSTEP 1 COMPLETED. CUM ITER = 84
 *** TIME = .631152E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 31929.110 TIME= 11:32:14
 This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 11:32:15 NOV 04, 1995 CP= 31929.550
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 25.12 CRITERION= .2516E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -3.346
HT FLOW CONVERGENCE VALUE= .3294E-01 CRITERION= .1631E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .5904E-02
HT FLOW CONVERGENCE VALUE= .6561E-04 CRITERION= .1631E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 33 SUBSTEP 1 COMPLETED. CUM ITER = 86
*** TIME = .946728E+10 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32393.390 TIME= 11:48:47
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 11:48:48 NOV 04, 1995 CP= 32393.830
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 13.61 CRITERION= .1367E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.747
HT FLOW CONVERGENCE VALUE= .2050E-01 CRITERION= .1307E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .4160E-02
HT FLOW CONVERGENCE VALUE= .3852E-04 CRITERION= .1307E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 34 SUBSTEP 1 COMPLETED. CUM ITER = 88
*** TIME = .126230E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 32853.200 TIME= 12:05:15
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:05:16 NOV 04, 1995 CP= 32853.650
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.13 CRITERION= .1018E-01
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.310
HT FLOW CONVERGENCE VALUE= .1313E-01 CRITERION= .1070E-02
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2699E-02
HT FLOW CONVERGENCE VALUE= .2061E-04 CRITERION= .1070E-02 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 35 SUBSTEP 1 COMPLETED. CUM ITER = 90
*** TIME = .157788E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33317.870 TIME= 12:21:47
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:21:47 NOV 04, 1995 CP= 33318.320
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 10.36 CRITERION= .1040E-01

EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.301
HT FLOW CONVERGENCE VALUE= .1108E-01 CRITERION= .8791E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .2332E-02
HT FLOW CONVERGENCE VALUE= .1480E-04 CRITERION= .8791E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 36 SUBSTEP 1 COMPLETED. CUM ITER = 92
*** TIME = .189346E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 33782.130 TIME= 12:38:19
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:38:20 NOV 04, 1995 CP= 33782.570
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 9.323 CRITERION= .9350E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.165
HT FLOW CONVERGENCE VALUE= .8276E-02 CRITERION= .7228E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1764E-02
HT FLOW CONVERGENCE VALUE= .9262E-05 CRITERION= .7228E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 37 SUBSTEP 1 COMPLETED. CUM ITER = 94
*** TIME = .220903E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34247.230 TIME= 12:54:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 12:54:53 NOV 04, 1995 CP= 34247.670
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 8.495 CRITERION= .8515E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -1.056
HT FLOW CONVERGENCE VALUE= .6256E-02 CRITERION= .5948E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1350E-02
HT FLOW CONVERGENCE VALUE= .5866E-05 CRITERION= .5948E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 38 SUBSTEP 1 COMPLETED. CUM ITER = 96
*** TIME = .252461E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 34707.730 TIME= 13:11:20
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:11:21 NOV 04, 1995 CP= 34708.170
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 7.627 CRITERION= .7642E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.9452
HT FLOW CONVERGENCE VALUE= .4667E-02 CRITERION= .4900E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .1017E-02
HT FLOW CONVERGENCE VALUE= .3661E-05 CRITERION= .4900E-03 <<< CONVERGED

>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 39 SUBSTEP 1 COMPLETED. CUM ITER = 98
*** TIME = .284018E+11 TIME INC = .315576E+10

***** ANSYS SOLVE COMMAND *****

*** WARNING *** CP= 35171.750 TIME= 13:27:53
This load step will be a static (steady-state) step.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:27:53 NOV 04, 1995 CP= 35172.190
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

HT FLOW CONVERGENCE VALUE= 6.728 CRITERION= .6739E-02
EQUIL ITER 1 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= -.8329
HT FLOW CONVERGENCE VALUE= .3426E-02 CRITERION= .4042E-03
EQUIL ITER 2 COMPLETED. NEW TRIANG MATRIX. MAX DOF INC= .7529E-03
HT FLOW CONVERGENCE VALUE= .2245E-05 CRITERION= .4042E-03 <<< CONVERGED
>>> SOLUTION CONVERGED AFTER EQUILIBRIUM ITERATION 2
*** LOAD STEP 40 SUBSTEP 1 COMPLETED. CUM ITER = 100
*** TIME = .315576E+11 TIME INC = .315576E+10

FINISH SOLUTION PROCESSING

***** ROUTINE COMPLETED ***** CP = 35629.530

Create element contour plots of solution results

Sort through solution results for time of max temp.

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:44:17 NOV 04, 1995 CP= 35629.530
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

VARIABLE 2 IS AT NODE 7655 ITEM= TEMP COMP= NAME= peakgls

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME
2 NSOL 7655 TEMP peakgls 69.39 .3156E+11 136.6 .1578E+08

*GET TMTMAX FROM VARI 2 ITEM=EXTR TMAX VALUE= 15778831.6

***** ROUTINE COMPLETED ***** CP = 35629.970

1

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:44:20 NOV 04, 1995 CP= 35630.020
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW SRP POUR CANISTER WP SIDE CUT AWAY VIEW OF MESH

***** ANSYS RESULTS INTERPRETATION (POST1) *****
Create temperature contour plots of WP at peak

GRAPHIC DISPLAY RESET

HIDDEN DISPLAY (PRECISE) IN WINDOW 1

VIEW POINT FOR WINDOW 1 1.0000 1.0000 1.0000

DISTANCE FOR WINDOW 1 3.000

NUMBER KEY SET TO 1 -1=NONE 0=BOTH 1=COLOR 2=NUMBER

ELEMENT OUTLINE STYLE FOR WINDOW 1 IS -1 0=DEFAULT, 1=ALTERNATE, -1=NONE
XYZ TRIAD DISPLAY SET TO OFF

MAT NUMBERING KEY = 1

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 31 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 135.00
KABS= 0. TOLERANCE= .000000E+00

18 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

240 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
18 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=MAT COMPONENT=
IN RANGE 1 TO 5 STEP 4

144 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 32 (CYLINDRICAL)

UNSELECT FOR ITEM=LOC COMPONENT=X BETWEEN .30490 AND 100.00
KABS= 0. TOLERANCE= .000000E+00

36 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

UNSELECT FOR ITEM=LOC COMPONENT=Y BETWEEN -45.000 AND 45.000
KABS= 0. TOLERANCE= .000000E+00

27 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ACTIVE COORDINATE SYSTEM SET TO 0 (CARTESIAN)

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

600 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
27 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

202 VOLUMES (OF 404 DEFINED) SELECTED BY VSEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED VOLUMES.

3800 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
202 SELECTED VOLUMES BY ESLV COMMAND.

SELECT FOR ITEM=AREA COMPONENT=
IN RANGE 17 TO 26 STEP 1

10 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

RESELECT FOR ITEM=LOC COMPONENT=X BETWEEN -100.00 AND .00000E+00
KABS= 0. TOLERANCE= .000000E+00

6 AREAS (OF 1290 DEFINED) SELECTED BY ASEL COMMAND.

ALSO SELECT ELEMENTS CREATED FROM SELECTED AREAS.

3992 ELEMENTS (OF 6722 DEFINED) SELECTED FROM
6 SELECTED AREAS BY ESLA COMMAND.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+08

SET COMMAND GOT LOAD STEP= 8 SUBSTEP= 1 CUMULATIVE ITERATION= 24
TIME/FREQUENCY= .15779E+08

TITLE=
DHLW WP at Time of Peak Temp. (.500001 years)

/SHOW SWITCH PLOTS TO FILE solupk.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 AUTOMATIC CONTOURS

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solupk.grph - RASTER MODE.

DISPLAY TITLE=
DHLW WP at Time of Peak Temp. (.500001 years)

*** WARNING *** CP= 35670.730 TIME= 13:45:16
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35670.770 TIME= 13:45:16
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.
Create temperature contour plots at 5, 10, 50, and 100 yrs

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .15779E+09

SET COMMAND GOT LOAD STEP= 17 SUBSTEP= 1 CUMULATIVE ITERATION= 51
TIME/FREQUENCY= .15779E+09

TITLE=
DHLW WP at 5 years

/SHOW SWITCH PLOTS TO FILE solu5.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu5.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 5 years

*** WARNING *** CP= 35718.940 TIME= 13:46:11
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35718.970 TIME= 13:46:11
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+09

SET COMMAND GOT LOAD STEP= 22 SUBSTEP= 1 CUMULATIVE ITERATION= 63
TIME/FREQUENCY= .31558E+09

TITLE=
DHLW WP at 10 years

/SHOW SWITCH PLOTS TO FILE solu10.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu10.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 10 years

*** WARNING *** CP= 35766.980 TIME= 13:47:05
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35767.010 TIME= 13:47:05
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .78886E-30

SET COMMAND GOT LOAD STEP= 1 SUBSTEP= 1 CUMULATIVE ITERATION= 6
TIME/FREQUENCY= .10000E-05

TITLE=
DHLW WP at 50 years

/SHOW SWITCH PLOTS TO FILE solu50.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu50.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 50 years

*** WARNING *** CP= 35786.250 TIME= 13:47:27
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35786.280 TIME= 13:47:27
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

USE NEAREST SUBSTEP ON RESULT FILE FOR LOAD CASE 0
USE DATA SET FOR TIME OR FREQUENCY= .31558E+10

SET COMMAND GOT LOAD STEP= 31 SUBSTEP= 1 CUMULATIVE ITERATION= 82
TIME/FREQUENCY= .31558E+10

TITLE=
DHLW WP at 100 years

/SHOW SWITCH PLOTS TO FILE solu100.grph - RASTER MODE.
- GRAPHIC PLANES = 8.

WINDOW 1 HAS 128 CONTOURS DEFINED BY PREVIOUS PLOT ACTION
FROM 55.975 BY .66508 TO 140.44

DISPLAY NODAL SOLUTION, ITEM=TEMP COMP=

CUMULATIVE DISPLAY NUMBER 1 WRITTEN TO FILE solu100.grph - RASTER MODE.
DISPLAY TITLE=
DHLW WP at 100 years

*** WARNING *** CP= 35834.720 TIME= 13:48:21
The selected element set contains mixed materials.
This could invalidate error estimation.

*** WARNING *** CP= 35834.750 TIME= 13:48:21
The selected element set contains mixed element stiffness types.
This could invalidate error estimation.

ALL SELECT FOR ITEM=ELEM COMPONENT=
IN RANGE 1 TO 10658 STEP 1

6722 ELEMENTS (OF 6722 DEFINED) SELECTED BY ESEL COMMAND.

EXIT THE ANSYS POST1 DATABASE PROCESSOR

***** ROUTINE COMPLETED ***** CP = 35843.200

Print time/temperature output at specific locations
Save profile from center to edge

Variable Legend: A01i000

t = structural stainless Canister near center line
c = center of Glass log
h = halfway between center and Canister
s = structural stainless Canister
i = inner barrier of DC
o = outer barrier of DC
= cartesian quadrant number of Canister
i = side of assembly toward center of WP
o = side of assembly toward edge of WP
045 = profile 45 deg down
135 = profile 45 deg up

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 13:48:30 NOV 04, 1995 CP= 35843.200
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** TIME-HISTORY POSTPROCESSOR (POST26) *****

ALL POST26 SPECIFICATIONS ARE RESET TO INITIAL DEFAULTS

MAXIMUM NUMBER OF VARIABLES= 32

Temperature Profile from center to lower right (45 deg.) z=2/3

VARIABLE 2 IS AT NODE 7952 ITEM= TEMP COMP= NAME= t94i045
VARIABLE 3 IS AT NODE 7726 ITEM= TEMP COMP= NAME= t94o045
VARIABLE 4 IS AT NODE 7730 ITEM= TEMP COMP= NAME= h94i045
VARIABLE 5 IS AT NODE 7654 ITEM= TEMP COMP= NAME= c94i045
VARIABLE 6 IS AT NODE 7686 ITEM= TEMP COMP= NAME= h94o045
VARIABLE 7 IS AT NODE 7667 ITEM= TEMP COMP= NAME= s94i045
VARIABLE 8 IS AT NODE 7929 ITEM= TEMP COMP= NAME= s94o045
VARIABLE 9 IS AT NODE 8013 ITEM= TEMP COMP= NAME= i94i045
VARIABLE 10 IS AT NODE 8030 ITEM= TEMP COMP= NAME= i94o045
VARIABLE 11 IS AT NODE 8145 ITEM= TEMP COMP= NAME= o94o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES
VARI TYPE IDENTIFIERS NAME MINIMUM AT TIME MAXIMUM AT TIME

2	NSOL	7952 TEMP	t94i045	69.39	.3156E+11	133.1	.2525E+09
3	NSOL	7726 TEMP	t94o045	69.39	.3156E+11	133.2	.2525E+09
4	NSOL	7730 TEMP	h94i045	69.42	.3156E+11	140.3	.1262E+08
5	NSOL	7654 TEMP	c94i045	69.41	.3156E+11	137.8	.1578E+08
6	NSOL	7686 TEMP	h94o045	69.34	.3156E+11	128.8	.2525E+09
7	NSOL	7667 TEMP	s94i045	69.22	.3156E+11	114.4	.3156E+09
8	NSOL	7929 TEMP	s94o045	69.22	.3156E+11	114.3	.3156E+09
9	NSOL	8013 TEMP	i94i045	56.92	31.56	103.2	.6312E+09
10	NSOL	8030 TEMP	i94o045	56.59	31.56	103.1	.6312E+09
11	NSOL	8145 TEMP	o94o045	56.23	31.56	103.0	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
38303 VERSION=HP 9000/7XX 13:48:35 NOV 04, 1995 CP= 35845.430
FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7952 TEMP t94i045	7726 TEMP t94o045	7730 TEMP h94i045	7654 TEMP c94i045	7686 TEMP h94o045	7667 TEMP s94i045
.10000E-05	125.079	125.141	134.667	131.567	115.575	87.6558
.20000E-05	125.076	125.139	134.664	131.565	115.572	87.6532
31.558	125.077	125.139	134.664	131.565	115.572	87.6532
.31558E+07	129.192	129.252	138.615	135.748	120.382	93.4429

.63116E+07	130.604	130.663	139.801	137.071	122.206	96.1009
.94673E+07	131.264	131.322	140.232	137.606	123.181	97.8236
.12623E+08	131.590	131.646	140.339	137.799	123.769	99.0883
.15779E+08	131.738	131.792	140.281	137.816	124.143	100.079
.18935E+08	131.781	131.834	140.132	137.732	124.385	100.887
.22090E+08	131.758	131.810	139.930	137.589	124.541	101.566
.25246E+08	131.716	131.767	139.723	137.434	124.660	102.161
.28402E+08	131.654	131.704	139.508	137.268	124.745	102.686
.31558E+08	131.583	131.633	139.295	137.099	124.810	103.159
.63115E+08	131.299	131.342	138.052	136.156	125.442	106.543
.94673E+08	131.687	131.727	137.951	136.219	126.329	108.867
.12623E+09	132.223	132.261	138.194	136.564	127.181	110.597
.15779E+09	132.673	132.710	138.435	136.879	127.857	111.899
.18935E+09	132.957	132.993	138.548	137.050	128.316	112.860
.22090E+09	133.086	133.120	138.527	137.076	128.590	113.565
.25246E+09	133.133	133.166	138.440	137.031	128.765	114.127
.28402E+09	132.882	132.915	138.056	136.681	128.617	114.339
.31558E+09	132.477	132.509	137.522	136.176	128.302	114.363
.63115E+09	127.002	127.027	130.955	129.835	123.535	112.420
.94673E+09	120.564	120.584	123.665	122.719	117.640	108.721
.12623E+10	114.065	114.081	116.504	115.700	111.586	104.397
.15779E+10	108.377	108.390	110.307	109.628	106.285	100.469
.18935E+10	103.636	103.646	105.177	104.604	101.875	97.1448
.22090E+10	99.6754	99.6837	100.915	100.433	98.1952	94.3278
.25246E+10	96.1286	96.1353	97.1345	96.7277	94.8794	91.6941
.28402E+10	93.2964	93.3019	94.1215	93.7774	92.2400	89.5963
.31558E+10	90.9697	90.9744	91.6542	91.3615	90.0718	87.8578
.63115E+10	80.9034	80.9048	81.1086	81.0109	80.6043	79.9116
.94673E+10	77.6318	77.6327	77.7682	77.7009	77.4258	76.9583
.12623E+11	75.9165	75.9172	76.0250	75.9704	75.7495	75.3746
.15779E+11	74.6288	74.6294	74.7173	74.6722	74.4908	74.1833
.18935E+11	73.3464	73.3469	73.4187	73.3813	73.2320	72.9792
.22090E+11	72.1957	72.1961	72.2549	72.2239	72.1009	71.8929
.25246E+11	71.1515	71.1518	71.2000	71.1743	71.0729	70.9015
.28402E+11	70.2159	70.2162	70.2558	70.2345	70.1508	70.0095
.31558E+11	69.3908	69.3910	69.4236	69.4059	69.3368	69.2202

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:35 NOV 04, 1995 CP= 35845.440
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7929 TEMP	8013 TEMP	8030 TEMP	8145 TEMP
	s94o045	i94i045	i94o045	o94o045
.10000E-05	87.4832	56.9257	56.5886	56.2286
.20000E-05	87.4806	56.9244	56.5873	56.2274
31.558	87.4806	56.9242	56.5871	56.2272
.31558E+07	93.2772	65.5217	65.1958	64.8467
.63116E+07	95.9408	69.8149	69.4988	69.1598
.94673E+07	97.6684	72.7719	72.4646	72.1349
.12623E+08	98.9375	75.0537	74.7545	74.4332
.15779E+08	99.9322	76.9142	76.6223	76.3088
.18935E+08	100.744	78.4831	78.1981	77.8917
.22090E+08	101.426	79.8379	79.5591	79.2594
.25246E+08	102.024	81.0364	80.7633	80.4697
.28402E+08	102.552	82.1074	81.8396	81.5516
.31558E+08	103.027	83.0761	82.8132	82.5304
.63115E+08	106.429	89.6995	89.4698	89.2224
.94673E+08	108.761	93.6821	93.4696	93.2407
.12623E+09	110.497	96.4245	96.2232	96.0055
.15779E+09	111.803	98.4353	98.2419	98.0322
.18935E+09	112.767	99.9430	99.7558	99.5526
.22090E+09	113.475	101.099	100.917	100.720
.25246E+09	114.039	102.055	101.879	101.686

.28402E+09	114.253	102.598	102.425	102.238
.31558E+09	114.279	102.915	102.746	102.564
.63115E+09	112.354	103.239	103.105	102.960
.94673E+09	108.667	101.194	101.087	100.970
.12623E+10	104.353	98.1557	98.0688	97.9750
.15779E+10	100.433	95.2857	95.2153	95.1396
.18935E+10	97.1159	92.8330	92.7757	92.7143
.22090E+10	94.3040	90.7337	90.6869	90.6368
.25246E+10	91.6745	88.6785	88.6400	88.5988
.28402E+10	89.5800	87.0558	87.0239	86.9898
.31558E+10	87.8442	85.7038	85.6771	85.6485
.63115E+10	79.9073	79.1968	79.1884	79.1795
.94673E+10	76.9554	76.4644	76.4588	76.4528
.12623E+11	75.3723	74.9733	74.9688	74.9640
.15779E+11	74.1814	73.8511	73.8474	73.8435
.18935E+11	72.9776	72.7033	72.7002	72.6970
.22090E+11	71.8916	71.6637	71.6612	71.6586
.25246E+11	70.9005	70.7112	70.7092	70.7070
.28402E+11	70.0086	69.8514	69.8497	69.8479
.31558E+11	69.2194	69.0888	69.0874	69.0859

* Temperature Profile from center to lower right (45 deg.) *

VARIABLE 2 IS AT NODE 7947 ITEM= TEMP COMP= NAME= t04i045

*** WARNING *** CP= 35845.660 TIME= 13:48:35
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7718 ITEM= TEMP COMP= NAME= t04o045

VARIABLE 4 IS AT NODE 7720 ITEM= TEMP COMP= NAME= h04i045

VARIABLE 5 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 6 IS AT NODE 7679 ITEM= TEMP COMP= NAME= h04o045

VARIABLE 7 IS AT NODE 7662 ITEM= TEMP COMP= NAME= s04i045

VARIABLE 8 IS AT NODE 7927 ITEM= TEMP COMP= NAME= s04o045

VARIABLE 9 IS AT NODE 8008 ITEM= TEMP COMP= NAME= i04i045

VARIABLE 10 IS AT NODE 8027 ITEM= TEMP COMP= NAME= i04o045

VARIABLE 11 IS AT NODE 8142 ITEM= TEMP COMP= NAME= o04o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	7947 TEMP	t04i045	69.38	.3156E+11	132.7 .2525E+09
3	NSOL	7718 TEMP	t04o045	69.38	.3156E+11	132.8 .2525E+09
4	NSOL	7720 TEMP	h04i045	69.42	.3156E+11	139.7 .1262E+08
5	NSOL	7642 TEMP	c04i045	69.40	.3156E+11	136.9 .1578E+08
6	NSOL	7679 TEMP	h04o045	69.33	.3156E+11	128.4 .2525E+09
7	NSOL	7662 TEMP	s04i045	69.21	.3156E+11	113.9 .3156E+09
8	NSOL	7927 TEMP	s04o045	69.21	.3156E+11	113.8 .3156E+09
9	NSOL	8008 TEMP	i04i045	55.90	31.56	103.0 .6312E+09
10	NSOL	8027 TEMP	i04o045	55.56	31.56	102.9 .6312E+09
11	NSOL	8142 TEMP	o04o045	55.21	31.56	102.8 .6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:37 NOV 04, 1995 CP= 35847.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7947 TEMP t04i045	7718 TEMP t04o045	7720 TEMP h04i045	7642 TEMP c04i045	7679 TEMP h04o045	7662 TEMP s04i045
.10000E-05	124.042	124.108	133.733	130.326	114.420	86.2325
.20000E-05	124.039	124.106	133.730	130.324	114.418	86.2300
31.558	124.039	124.106	133.730	130.324	114.418	86.2300
.31558E+07	128.264	128.329	137.805	134.652	119.368	92.1668
.63116E+07	129.735	129.799	139.055	136.052	121.267	94.9071
.94673E+07	130.437	130.498	139.530	136.642	122.295	96.6901
.12623E+08	130.796	130.856	139.671	136.879	122.925	98.0038
.15779E+08	130.971	131.030	139.642	136.932	123.334	99.0360
.18935E+08	131.038	131.096	139.517	136.880	123.607	99.8802
.22090E+08	131.037	131.093	139.335	136.764	123.789	100.590
.25246E+08	131.014	131.069	139.146	136.635	123.932	101.214
.28402E+08	130.969	131.023	138.948	136.490	124.038	101.765
.31558E+08	130.914	130.967	138.750	136.341	124.121	102.260
.63115E+08	130.732	130.779	137.603	135.527	124.876	105.795
.94673E+08	131.174	131.217	137.553	135.657	125.827	108.195
.12623E+09	131.744	131.785	137.827	136.045	126.718	109.972
.15779E+09	132.219	132.258	138.090	136.389	127.421	111.307
.18935E+09	132.521	132.559	138.220	136.582	127.900	112.293
.22090E+09	132.664	132.702	138.212	136.626	128.190	113.019
.25246E+09	132.724	132.761	138.136	136.595	128.379	113.599
.28402E+09	132.484	132.520	137.761	136.257	128.243	113.826
.31558E+09	132.087	132.122	137.234	135.762	127.937	113.862
.63115E+09	126.678	126.705	130.712	129.496	123.236	112.016
.94673E+09	120.288	120.310	123.454	122.431	117.387	108.386
.12623E+10	113.827	113.845	116.318	115.453	111.368	104.115
.15779E+10	108.173	108.187	110.144	109.416	106.098	100.232
.18935E+10	103.462	103.473	105.035	104.424	101.716	96.9461
.22090E+10	99.5269	99.5358	100.793	100.280	98.0598	94.1607
.25246E+10	96.0015	96.0088	97.0293	96.5964	94.7636	91.5529
.28402E+10	93.1877	93.1936	94.0309	93.6651	92.1409	89.4765
.31558E+10	90.8764	90.8814	91.5759	91.2652	89.9868	87.7557
.63115E+10	80.8707	80.8722	81.0805	80.9773	80.5746	79.8768
.94673E+10	77.6088	77.6098	77.7483	77.6773	77.4049	76.9341
.12623E+11	75.8977	75.8985	76.0087	75.9511	75.7323	75.3548
.15779E+11	74.6131	74.6138	74.7036	74.6561	74.4765	74.1669
.18935E+11	73.3333	73.3338	73.4072	73.3679	73.2201	72.9655
.22090E+11	72.1848	72.1852	72.2453	72.2127	72.0909	71.8815
.25246E+11	71.1423	71.1427	71.1920	71.1649	71.0646	70.8921
.28402E+11	70.2083	70.2086	70.2490	70.2266	70.1438	70.0016
.31558E+11	69.3845	69.3847	69.4180	69.3994	69.3310	69.2136

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:38 NOV 04, 1995 CP= 35847.600
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7927 TEMP s04o045	8008 TEMP i04i045	8027 TEMP i04o045	8142 TEMP o04o045
.10000E-05	86.0634	55.9030	55.5588	55.2065
.20000E-05	86.0609	55.9018	55.5576	55.2054
31.558	86.0609	55.9017	55.5575	55.2052
.31558E+07	92.0043	64.6545	64.3220	63.9800
.63116E+07	94.7502	69.0280	68.7057	68.3734
.94673E+07	96.5380	72.0412	71.7280	71.4046
.12623E+08	97.8560	74.3671	74.0622	73.7469
.15779E+08	98.8920	76.2637	75.9663	75.6587

.18935E+08	99.7398	77.8632	77.5728	77.2721
.22090E+08	100.453	79.2444	78.9604	78.6662
.25246E+08	101.080	80.4660	80.1878	79.8995
.28402E+08	101.633	81.5573	81.2846	81.0017
.31558E+08	102.131	82.5442	82.2765	81.9988
.63115E+08	105.683	89.2804	89.0467	88.8035
.94673E+08	108.092	93.3173	93.1012	92.8760
.12623E+09	109.874	96.0919	95.8871	95.6729
.15779E+09	111.213	98.1245	97.9278	97.7215
.18935E+09	112.202	99.6486	99.4583	99.2583
.22090E+09	112.931	100.818	100.633	100.439
.25246E+09	113.513	101.785	101.605	101.416
.28402E+09	113.742	102.337	102.161	101.977
.31558E+09	113.780	102.661	102.490	102.310
.63115E+09	111.951	103.039	102.903	102.760
.94673E+09	108.333	101.031	100.921	100.806
.12623E+10	104.073	98.0188	97.9305	97.8381
.15779E+10	100.198	95.1711	95.0995	95.0250
.18935E+10	96.9178	92.7369	92.6787	92.6183
.22090E+10	94.1375	90.6532	90.6056	90.5563
.25246E+10	91.5337	88.6104	88.5713	88.5308
.28402E+10	89.4606	86.9982	86.9657	86.9322
.31558E+10	87.7424	85.6547	85.6276	85.5995
.63115E+10	79.8726	79.1801	79.1716	79.1629
.94673E+10	76.9313	76.4527	76.4470	76.4411
.12623E+11	75.3526	74.9638	74.9592	74.9545
.15779E+11	74.1651	73.8431	73.8394	73.8355
.18935E+11	72.9640	72.6966	72.6936	72.6904
.22090E+11	71.8802	71.6582	71.6556	71.6530
.25246E+11	70.8910	70.7066	70.7045	70.7024
.28402E+11	70.0007	69.8476	69.8459	69.8441
.31558E+11	69.2129	69.0856	69.0842	69.0827

 * Temperature Profile from center to upper right (135 deg.) *

VARIABLE 2 IS AT NODE 63 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35847.810 TIME= 13:48:38
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 20 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 22 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 11 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 6 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 58 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 84 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 106 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 124 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	63 TEMP	t01i135	69.38	.3156E+11	132.7 .2525E+09
3	NSOL	20 TEMP	t01o135	69.38	.3156E+11	132.8 .2525E+09
4	NSOL	22 TEMP	h01i135	69.42	.3156E+11	139.6 .1262E+08
5	NSOL	1 TEMP	c01i135	69.40	.3156E+11	136.9 .1578E+08

6 NSOL	11 TEMP	h01o135	69.33	.3156E+11	128.4	.2525E+09
7 NSOL	6 TEMP	s01i135	69.21	.3156E+11	113.8	.3156E+09
8 NSOL	58 TEMP	s01o135	69.21	.3156E+11	113.7	.3156E+09
9 NSOL	84 TEMP	i01i135	55.79	31.56	103.0	.6312E+09
10 NSOL	106 TEMP	i01o135	55.44	31.56	102.9	.6312E+09
11 NSOL	124 TEMP	o01o135	55.09	31.56	102.7	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:40 NOV 04, 1995 CP= 35849.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	63 TEMP t01i135	20 TEMP t01o135	22 TEMP h01i135	1 TEMP c01i135	11 TEMP h01o135	6 TEMP s01i135
.10000E-05	124.033	124.099	133.707	130.287	114.366	86.1644
.20000E-05	124.030	124.097	133.705	130.284	114.363	86.1619
31.558	124.031	124.097	133.705	130.284	114.363	86.1619
.31558E+07	128.256	128.321	137.781	134.614	119.316	92.1018
.63116E+07	129.728	129.791	139.032	136.015	121.217	94.8446
.94673E+07	130.429	130.491	139.508	136.607	122.247	96.6296
.12623E+08	130.789	130.849	139.650	136.845	122.879	97.9451
.15779E+08	130.964	131.023	139.621	136.899	123.289	98.9788
.18935E+08	131.032	131.089	139.496	136.848	123.562	99.8244
.22090E+08	131.030	131.086	139.315	136.732	123.746	100.536
.25246E+08	131.007	131.062	139.127	136.603	123.889	101.161
.28402E+08	130.962	131.016	138.928	136.459	123.996	101.713
.31558E+08	130.907	130.960	138.731	136.311	124.081	102.209
.63115E+08	130.727	130.773	137.587	135.501	124.841	105.750
.94673E+08	131.169	131.212	137.538	135.633	125.794	108.154
.12623E+09	131.740	131.780	137.812	136.022	126.687	109.934
.15779E+09	132.214	132.253	138.076	136.367	127.391	111.270
.18935E+09	132.516	132.555	138.207	136.561	127.872	112.258
.22090E+09	132.660	132.697	138.199	136.605	128.162	112.985
.25246E+09	132.720	132.757	138.124	136.576	128.353	113.566
.28402E+09	132.480	132.515	137.749	136.238	128.217	113.793
.31558E+09	132.083	132.118	137.222	135.744	127.911	113.830
.63115E+09	126.674	126.702	130.703	129.480	123.215	111.991
.94673E+09	120.285	120.307	123.446	122.418	117.370	108.365
.12623E+10	113.825	113.842	116.311	115.443	111.354	104.098
.15779E+10	108.171	108.185	110.139	109.407	106.087	100.218
.18935E+10	103.460	103.471	105.031	104.417	101.707	96.9344
.22090E+10	99.5254	99.5343	100.789	100.274	98.0520	94.1510
.25246E+10	96.0002	96.0075	97.0261	96.5915	94.7571	91.5448
.28402E+10	93.1866	93.1925	94.0282	93.6610	92.1355	89.4697
.31558E+10	90.8755	90.8804	91.5736	91.2618	89.9822	87.7500
.63115E+10	80.8704	80.8719	81.0798	80.9762	80.5731	79.8750
.94673E+10	77.6086	77.6096	77.7478	77.6765	77.4038	76.9328
.12623E+11	75.8975	75.8983	76.0082	75.9505	75.7315	75.3538
.15779E+11	74.6130	74.6136	74.7033	74.6556	74.4758	74.1661
.18935E+11	73.3332	73.3337	73.4070	73.3674	73.2195	72.9648
.22090E+11	72.1847	72.1851	72.2451	72.2123	72.0905	71.8809
.25246E+11	71.1423	71.1426	71.1918	71.1646	71.0642	70.8916
.28402E+11	70.2083	70.2085	70.2489	70.2264	70.1435	70.0012
.31558E+11	69.3844	69.3847	69.4178	69.3992	69.3307	69.2133

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:40 NOV 04, 1995 CP= 35849.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	58 TEMP s01o135	84 TEMP i01i135	106 TEMP i01o135	124 TEMP o01o135
.10000E-05	85.9952	55.7900	55.4452	55.0909
.20000E-05	85.9927	55.7888	55.4440	55.0897
31.558	85.9927	55.7886	55.4439	55.0895
.31558E+07	91.9393	64.5505	64.2174	63.8734
.63116E+07	94.6875	68.9296	68.6068	68.2725
.94673E+07	96.4773	71.9473	71.6335	71.3082
.12623E+08	97.7971	74.2768	73.9714	73.6543
.15779E+08	98.8347	76.1766	75.8787	75.5693
.18935E+08	99.6839	77.7789	77.4880	77.1856
.22090E+08	100.399	79.1627	78.8782	78.5823
.25246E+08	101.026	80.3864	80.1078	79.8179
.28402E+08	101.581	81.4798	81.2066	80.9222
.31558E+08	102.080	82.4686	82.2004	81.9211
.63115E+08	105.638	89.2169	88.9827	88.7382
.94673E+08	108.051	93.2599	93.0434	92.8169
.12623E+09	109.836	96.0382	95.8330	95.6176
.15779E+09	111.176	98.0734	97.8763	97.6689
.18935E+09	112.167	99.5995	99.4088	99.2077
.22090E+09	112.896	100.771	100.585	100.390
.25246E+09	113.479	101.739	101.559	101.369
.28402E+09	113.709	102.292	102.116	101.931
.31558E+09	113.748	102.618	102.446	102.265
.63115E+09	111.925	103.005	102.868	102.724
.94673E+09	108.312	101.003	100.893	100.778
.12623E+10	104.055	97.9960	97.9076	97.8147
.15779E+10	100.184	95.1524	95.0808	95.0058
.18935E+10	96.9061	92.7216	92.6633	92.6025
.22090E+10	94.1278	90.6405	90.5929	90.5433
.25246E+10	91.5256	88.5999	88.5607	88.5200
.28402E+10	89.4538	86.9894	86.9569	86.9231
.31558E+10	87.7367	85.6473	85.6201	85.5919
.63115E+10	79.8708	79.1777	79.1692	79.1604
.94673E+10	76.9300	76.4511	76.4454	76.4395
.12623E+11	75.3515	74.9625	74.9579	74.9532
.15779E+11	74.1642	73.8421	73.8383	73.8344
.18935E+11	72.9633	72.6957	72.6926	72.6895
.22090E+11	71.8796	71.6574	71.6549	71.6523
.25246E+11	70.8905	70.7060	70.7039	70.7018
.28402E+11	70.0004	69.8471	69.8454	69.8436
.31558E+11	69.2126	69.0852	69.0838	69.0823

 * Temp. Prof. from center to lower right (45 deg.) z=glass bot *

VARIABLE 2 IS AT NODE 7951 ITEM= TEMP COMP= NAME= tb4i045

*** WARNING *** CP= 35849.970 TIME= 13:48:40
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 7722 ITEM= TEMP COMP= NAME= tb4o045

VARIABLE 4 IS AT NODE 7724 ITEM= TEMP COMP= NAME= hb4i045

VARIABLE 5 IS AT NODE 7650 ITEM= TEMP COMP= NAME= cb4i045

VARIABLE 6 IS AT NODE 7682 ITEM= TEMP COMP= NAME= hb4o045

VARIABLE 7 IS AT NODE 7666 ITEM= TEMP COMP= NAME= sb4i045

VARIABLE 8 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4o045

VARIABLE 9 IS AT NODE 8012 ITEM= TEMP COMP= NAME= ib4i045

VARIABLE 10 IS AT NODE 8029 ITEM= TEMP COMP= NAME= ib4o045

VARIABLE 11 IS AT NODE 8144 ITEM= TEMP COMP= NAME= ob4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	7951 TEMP	tb4i045	69.26	.3156E+11	119.8	.2840E+09
3	NSOL	7722 TEMP	tb4o045	69.26	.3156E+11	119.8	.2840E+09
4	NSOL	7724 TEMP	hb4i045	69.23	.3156E+11	116.7	.2840E+09
5	NSOL	7650 TEMP	cb4i045	69.21	.3156E+11	114.4	.3156E+09
6	NSOL	7682 TEMP	hb4o045	69.19	.3156E+11	111.9	.3156E+09
7	NSOL	7666 TEMP	sb4i045	69.16	.3156E+11	108.9	.3156E+09
8	NSOL	7928 TEMP	sb4o045	69.16	.3156E+11	108.9	.3156E+09
9	NSOL	8012 TEMP	ib4i045	52.60	31.56	101.8	.6312E+09
10	NSOL	8029 TEMP	ib4o045	52.33	31.56	101.7	.6312E+09
11	NSOL	8144 TEMP	ob4o045	52.04	31.56	101.6	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:42 NOV 04, 1995 CP= 35851.900
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7951 TEMP tb4i045	7722 TEMP tb4o045	7724 TEMP hb4i045	7650 TEMP cb4i045	7682 TEMP hb4o045	7666 TEMP sb4i045
.10000E-05	97.9930	97.9141	91.6768	86.9091	81.3333	74.9051
.20000E-05	97.9899	97.9110	91.6739	86.9064	81.3309	74.9029
31.558	97.9899	97.9109	91.6739	86.9064	81.3309	74.9028
.31558E+07	103.554	103.477	97.4642	92.9314	87.6462	81.5413
.63116E+07	105.948	105.873	100.053	95.6936	90.6157	84.7453
.94673E+07	107.416	107.344	101.695	97.4804	92.5753	86.9017
.12623E+08	108.442	108.371	102.879	98.7906	94.0368	88.5357
.15779E+08	109.211	109.142	103.790	99.8158	95.1965	89.8498
.18935E+08	109.812	109.745	104.524	100.651	96.1531	90.9461
.22090E+08	110.298	110.232	105.131	101.352	96.9640	91.8844
.25246E+08	110.717	110.653	105.660	101.966	97.6780	92.7140
.28402E+08	111.079	111.016	106.124	102.508	98.3112	93.4534
.31558E+08	111.400	111.338	106.539	102.994	98.8820	94.1219
.63115E+08	113.757	113.703	109.531	106.468	102.921	98.8155
.94673E+08	115.551	115.501	111.653	108.842	105.590	101.824
.12623E+09	116.959	116.911	113.261	110.604	107.534	103.978
.15779E+09	118.031	117.985	114.476	111.929	108.987	105.579
.18935E+09	118.806	118.761	115.364	112.905	110.064	106.773
.22090E+09	119.349	119.305	116.006	113.620	110.866	107.674
.25246E+09	119.765	119.722	116.509	114.189	111.512	108.409
.28402E+09	119.837	119.796	116.664	114.402	111.793	108.769
.31558E+09	119.727	119.687	116.631	114.423	111.877	108.926
.63115E+09	116.663	116.631	114.204	112.438	110.399	108.041
.94673E+09	112.086	112.060	110.121	108.692	107.039	105.133
.12623E+10	107.072	107.052	105.494	104.331	102.982	101.431
.15779E+10	102.605	102.588	101.332	100.383	99.2799	98.0147
.18935E+10	98.8611	98.8480	97.8295	97.0520	96.1461	95.1096
.22090E+10	95.7157	95.7052	94.8747	94.2352	93.4887	92.6361
.25246E+10	92.8251	92.8164	92.1341	91.6045	90.9853	90.2792
.28402E+10	90.5263	90.5192	89.9542	89.5128	88.9960	88.4073
.31558E+10	88.6306	88.6246	88.1525	87.7815	87.3467	86.8519
.63115E+10	80.1442	80.1424	79.9959	79.8780	79.7390	79.5815
.94673E+10	77.1129	77.1117	77.0132	76.9331	76.8386	76.7316
.12623E+11	75.4975	75.4966	75.4177	75.3533	75.2771	75.1910
.15779E+11	74.2835	74.2827	74.2181	74.1652	74.1025	74.0317
.18935E+11	73.0610	73.0604	73.0073	72.9637	72.9120	72.8536

.22090E+11	71.9598	71.9593	71.9156	71.8796	71.8370	71.7888
.25246E+11	70.9564	70.9559	70.9200	70.8903	70.8551	70.8153
.28402E+11	70.0545	70.0541	70.0246	70.0000	69.9709	69.9380
.31558E+11	69.2571	69.2568	69.2324	69.2121	69.1880	69.1609

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:42 NOV 04, 1995 CP= 35851.910
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7928 TEMP sb4o045	8012 TEMP ib4i045	8029 TEMP ib4o045	8144 TEMP ob4o045
.10000E-05	74.8348	52.6043	52.3269	52.0433
.20000E-05	74.8326	52.6033	52.3259	52.0423
31.558	74.8325	52.6031	52.3257	52.0421
.31558E+07	81.4748	61.4796	61.2112	60.9374
.63116E+07	84.6815	65.9624	65.7019	65.4367
.94673E+07	86.8401	69.0721	68.8188	68.5613
.12623E+08	88.4759	71.4851	71.2383	70.9877
.15779E+08	89.7917	73.4607	73.2199	72.9756
.18935E+08	90.8896	75.1323	74.8970	74.6586
.22090E+08	91.8293	76.5797	76.3496	76.1165
.25246E+08	92.6602	77.8615	77.6361	77.4079
.28402E+08	93.4008	79.0084	78.7873	78.5636
.31558E+08	94.0704	80.0467	79.8296	79.6101
.63115E+08	98.7713	87.1290	86.9391	86.7478
.94673E+08	101.784	91.3467	91.1710	90.9942
.12623E+09	103.939	94.2329	94.0661	93.8982
.15779E+09	105.542	96.3448	96.1845	96.0230
.18935E+09	106.738	97.9316	97.7765	97.6201
.22090E+09	107.640	99.1542	99.0036	98.8516
.25246E+09	108.375	100.169	100.022	99.8744
.28402E+09	108.736	100.763	100.620	100.476
.31558E+09	108.894	101.127	100.987	100.846
.63115E+09	108.015	101.818	101.707	101.595
.94673E+09	105.113	100.045	99.9556	99.8658
.12623E+10	101.415	97.2177	97.1458	97.0736
.15779E+10	98.0011	94.5184	94.4601	94.4018
.18935E+10	95.0984	92.2030	92.1556	92.1082
.22090E+10	92.6269	90.2145	90.1758	90.1372
.25246E+10	90.2716	88.2476	88.2157	88.1839
.28402E+10	88.4010	86.6960	86.6696	86.6432
.31558E+10	86.8465	85.4010	85.3789	85.3568
.63115E+10	79.5798	79.0997	79.0928	79.0859
.94673E+10	76.7304	76.3982	76.3935	76.3889
.12623E+11	75.1900	74.9200	74.9162	74.9125
.15779E+11	74.0309	73.8071	73.8041	73.8010
.18935E+11	72.8529	72.6670	72.6645	72.6620
.22090E+11	71.7882	71.6337	71.6317	71.6296
.25246E+11	70.8148	70.6865	70.6848	70.6831
.28402E+11	69.9376	69.8309	69.8295	69.8281
.31558E+11	69.1606	69.0719	69.0707	69.0695

 * Temp. Prof. from center to upper right (135 deg.) z=glass bot*

VARIABLE 2 IS AT NODE 1033 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35852.120 TIME= 13:48:42
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 733 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 735 ITEM= TEMP COMP= NAME= h01i135
 VARIABLE 5 IS AT NODE 679 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 6 IS AT NODE 704 ITEM= TEMP COMP= NAME= h01o135
 VARIABLE 7 IS AT NODE 691 ITEM= TEMP COMP= NAME= s01i135
 VARIABLE 8 IS AT NODE 1018 ITEM= TEMP COMP= NAME= s01o135
 VARIABLE 9 IS AT NODE 1292 ITEM= TEMP COMP= NAME= i01i135
 VARIABLE 10 IS AT NODE 1307 ITEM= TEMP COMP= NAME= i01o135
 VARIABLE 11 IS AT NODE 2078 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	1033 TEMP	t01i135	69.26	.3156E+11	119.8	.2840E+09
3 NSOL	733 TEMP	t01o135	69.26	.3156E+11	119.8	.2840E+09
4 NSOL	735 TEMP	h01i135	69.23	.3156E+11	116.7	.2840E+09
5 NSOL	679 TEMP	c01i135	69.21	.3156E+11	114.4	.3156E+09
6 NSOL	704 TEMP	h01o135	69.19	.3156E+11	111.9	.3156E+09
7 NSOL	691 TEMP	s01i135	69.16	.3156E+11	108.9	.3156E+09
8 NSOL	1018 TEMP	s01o135	69.16	.3156E+11	108.9	.3156E+09
9 NSOL	1292 TEMP	i01i135	52.51	31.56	101.8	.6312E+09
10 NSOL	1307 TEMP	i01o135	52.24	31.56	101.7	.6312E+09
11 NSOL	2078 TEMP	o01o135	51.95	31.56	101.6	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:44 NOV 04, 1995 CP= 35854.060
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1033 TEMP t01i135	733 TEMP t01o135	735 TEMP h01i135	679 TEMP c01i135	704 TEMP h01o135	691 TEMP s01i135
.10000E-05	97.9819	97.9028	91.6566	86.8788	81.2901	74.8474
.20000E-05	97.9788	97.8997	91.6538	86.8761	81.2877	74.8452
31.558	97.9788	97.8997	91.6537	86.8761	81.2877	74.8451
.31558E+07	103.544	103.467	97.4455	92.9032	87.6055	81.4867
.63116E+07	105.938	105.863	100.035	95.6666	90.5768	84.6929
.94673E+07	107.407	107.334	101.678	97.4545	92.5379	86.8511
.12623E+08	108.433	108.362	102.862	98.7656	94.0006	88.4866
.15779E+08	109.202	109.133	103.774	99.7916	95.1614	89.8021
.18935E+08	109.804	109.736	104.508	100.628	96.1190	90.8997
.22090E+08	110.290	110.224	105.116	101.329	96.9308	91.8391
.25246E+08	110.710	110.645	105.645	101.944	97.6455	92.6698
.28402E+08	111.072	111.008	106.110	102.486	98.2795	93.4102
.31558E+08	111.392	111.330	106.525	102.973	98.8509	94.0795
.63115E+08	113.751	113.697	109.519	106.450	102.895	98.7791
.94673E+08	115.545	115.495	111.642	108.825	105.565	101.791
.12623E+09	116.954	116.906	113.251	110.589	107.511	103.946
.15779E+09	118.026	117.980	114.466	111.914	108.965	105.549
.18935E+09	118.801	118.756	115.355	112.890	110.044	106.744
.22090E+09	119.344	119.300	115.997	113.606	110.846	107.646
.25246E+09	119.760	119.718	116.501	114.176	111.492	108.381
.28402E+09	119.833	119.791	116.655	114.389	111.774	108.742
.31558E+09	119.723	119.683	116.622	114.411	111.858	108.900
.63115E+09	116.659	116.627	114.197	112.428	110.384	108.020

.94673E+09	112.083	112.057	110.115	108.684	107.027	105.116
.12623E+10	107.070	107.049	105.489	104.324	102.972	101.417
.15779E+10	102.602	102.586	101.329	100.378	99.2715	98.0033
.18935E+10	98.8592	98.8462	97.8263	97.0472	96.1392	95.1002
.22090E+10	95.7142	95.7036	94.8720	94.2312	93.4830	92.6283
.25246E+10	92.8238	92.8151	92.1319	91.6012	90.9806	90.2728
.28402E+10	90.5252	90.5181	89.9523	89.5100	88.9920	88.4019
.31558E+10	88.6296	88.6237	88.1508	87.7791	87.3433	86.8473
.63115E+10	80.1439	80.1421	79.9954	79.8772	79.7379	79.5801
.94673E+10	77.1127	77.1115	77.0128	76.9326	76.8378	76.7306
.12623E+11	75.4974	75.4964	75.4174	75.3528	75.2765	75.1902
.15779E+11	74.2834	74.2826	74.2179	74.1648	74.1020	74.0310
.18935E+11	73.0609	73.0603	73.0071	72.9634	72.9116	72.8530
.22090E+11	71.9597	71.9592	71.9155	71.8794	71.8366	71.7883
.25246E+11	70.9563	70.9558	70.9199	70.8901	70.8548	70.8149
.28402E+11	70.0544	70.0541	70.0244	69.9998	69.9706	69.9377
.31558E+11	69.2571	69.2568	69.2323	69.2120	69.1878	69.1606

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:44 NOV 04, 1995 CP= 35854.070
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1018 TEMP	1292 TEMP	1307 TEMP	2078 TEMP
	s01o135	i01i135	i01o135	o01o135
.10000E-05	74.7770	52.5161	52.2385	51.9538
.20000E-05	74.7748	52.5151	52.2376	51.9528
31.558	74.7747	52.5149	52.2374	51.9526
.31558E+07	81.4200	61.3984	61.1298	60.8551
.63116E+07	84.6289	65.8856	65.6250	65.3588
.94673E+07	86.7893	68.9988	68.7454	68.4869
.12623E+08	88.4267	71.4147	71.1677	70.9162
.15779E+08	89.7439	73.3927	73.1518	72.9067
.18935E+08	90.8431	75.0666	74.8312	74.5919
.22090E+08	91.7839	76.5160	76.2857	76.0518
.25246E+08	92.6159	77.7996	77.5740	77.3449
.28402E+08	93.3574	78.9481	78.7269	78.5023
.31558E+08	94.0279	79.9878	79.7706	79.5502
.63115E+08	98.7348	87.0796	86.8896	86.6976
.94673E+08	101.750	91.3020	91.1262	90.9489
.12623E+09	103.908	94.1911	94.0242	93.8558
.15779E+09	105.512	96.3051	96.1447	95.9827
.18935E+09	106.709	97.8934	97.7383	97.5814
.22090E+09	107.612	99.1174	98.9667	98.8142
.25246E+09	108.348	100.133	99.9866	99.8381
.28402E+09	108.710	100.728	100.585	100.441
.31558E+09	108.868	101.093	100.953	100.812
.63115E+09	107.994	101.791	101.680	101.568
.94673E+09	105.096	100.023	99.9339	99.8438
.12623E+10	101.401	97.2001	97.1281	97.0557
.15779E+10	97.9897	94.5040	94.4457	94.3872
.18935E+10	95.0890	92.1912	92.1437	92.0962
.22090E+10	92.6191	90.2048	90.1660	90.1272
.25246E+10	90.2651	88.2395	88.2076	88.1757
.28402E+10	88.3956	86.6892	86.6628	86.6363
.31558E+10	86.8420	85.3953	85.3731	85.3510
.63115E+10	79.5784	79.0978	79.0909	79.0840
.94673E+10	76.7294	76.3969	76.3923	76.3876
.12623E+11	75.1892	74.9189	74.9152	74.9115
.15779E+11	74.0302	73.8063	73.8032	73.8002
.18935E+11	72.8524	72.6663	72.6638	72.6613
.22090E+11	71.7878	71.6331	71.6311	71.6290
.25246E+11	70.8145	70.6860	70.6843	70.6826
.28402E+11	69.9373	69.8306	69.8291	69.8277

.31558E+11 69.1603 69.0715 69.0704 69.0692

 * Temp. Prof. from center to lower right (45 deg.) z=glass top *

VARIABLE 2 IS AT NODE 8470 ITEM= TEMP COMP= NAME= tt4i045

*** WARNING *** CP= 35854.280 TIME= 13:48:44
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 8270 ITEM= TEMP COMP= NAME= tt4o045

VARIABLE 4 IS AT NODE 8272 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 5 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ct4i045

VARIABLE 6 IS AT NODE 8251 ITEM= TEMP COMP= NAME= ht4o045

VARIABLE 7 IS AT NODE 8242 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 9 IS AT NODE 8556 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 10 IS AT NODE 8566 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 11 IS AT NODE 8691 ITEM= TEMP COMP= NAME= ot4o045

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM AT TIME
2	NSOL	8470 TEMP	tt4i045	69.27	.3156E+11	121.1 .2840E+09
3	NSOL	8270 TEMP	tt4o045	69.27	.3156E+11	121.1 .2840E+09
4	NSOL	8272 TEMP	ht4i045	69.34	.3156E+11	130.1 .2525E+09
5	NSOL	8234 TEMP	ct4i045	69.33	.3156E+11	130.1 .2525E+09
6	NSOL	8251 TEMP	ht4o045	69.26	.3156E+11	122.0 .2840E+09
7	NSOL	8242 TEMP	st4i045	67.21	31.56	106.3 .3156E+09
8	NSOL	8460 TEMP	st4o045	67.10	31.56	106.3 .3156E+09
9	NSOL	8556 TEMP	it4i045	47.38	31.56	100.6 .6312E+09
10	NSOL	8566 TEMP	it4o045	47.17	31.56	100.5 .6312E+09
11	NSOL	8691 TEMP	ot4o045	46.94	31.56	100.4 .6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:46 NOV 04, 1995 CP= 35856.210
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP tt4i045	8270 TEMP tt4o045	8272 TEMP ht4i045	8234 TEMP ct4i045	8251 TEMP ht4o045	8242 TEMP st4i045
.10000E-05	99.8030	99.8492	116.484	115.911	99.6121	67.2160
.20000E-05	99.8004	99.8466	116.482	115.909	99.6102	67.2145
31.558	99.8004	99.8466	116.482	115.909	99.6101	67.2144
.31558E+07	105.466	105.511	121.651	121.233	105.668	74.6520
.63116E+07	107.872	107.916	123.602	123.260	108.253	78.3127
.94673E+07	109.330	109.373	124.637	124.344	109.815	80.8061
.12623E+08	110.337	110.379	125.256	124.999	110.893	82.7143
.15779E+08	111.084	111.124	125.645	125.416	111.691	84.2605
.18935E+08	111.662	111.702	125.893	125.687	112.308	85.5580
.22090E+08	112.124	112.163	126.049	125.863	112.800	86.6741

.25246E+08	112.520	112.558	126.165	125.995	113.219	87.6612
.28402E+08	112.859	112.897	126.245	126.090	113.578	88.5426
.31558E+08	113.158	113.195	126.304	126.160	113.892	89.3399
.63115E+08	115.354	115.386	126.872	126.807	116.174	94.8634
.94673E+08	117.054	117.084	127.725	127.700	117.918	98.2907
.12623E+09	118.402	118.431	128.557	128.558	119.297	100.697
.15779E+09	119.430	119.458	129.216	129.235	120.343	102.474
.18935E+09	120.168	120.195	129.656	129.688	121.091	103.804
.22090E+09	120.679	120.705	129.910	129.950	121.603	104.815
.25246E+09	121.066	121.091	130.065	130.111	121.988	105.645
.28402E+09	121.110	121.135	129.890	129.939	122.019	106.084
.31558E+09	120.973	120.997	129.545	129.593	121.864	106.311
.63115E+09	117.670	117.690	124.492	124.515	118.347	105.954
.94673E+09	112.900	112.915	118.353	118.347	113.381	103.423
.12623E+10	107.730	107.742	112.105	112.078	108.055	100.012
.15779E+10	103.136	103.146	106.662	106.623	103.355	96.8339
.18935E+10	99.2928	99.3010	102.151	102.108	99.4398	94.1258
.22090E+10	96.0676	96.0743	98.3986	98.3551	96.1669	91.8150
.25246E+10	93.1133	93.1188	95.0288	94.9869	93.1794	89.5891
.28402E+10	90.7644	90.7690	92.3515	92.3130	90.8091	87.8252
.31558E+10	88.8291	88.8329	90.1563	90.1214	88.8596	86.3578
.63115E+10	80.2044	80.2056	80.6172	80.6026	80.2040	79.4166
.94673E+10	77.1528	77.1536	77.4308	77.4200	77.1500	76.6172
.12623E+11	75.5292	75.5299	75.7519	75.7428	75.5258	75.0979
.15779E+11	74.3093	74.3098	74.4918	74.4841	74.3058	73.9545
.18935E+11	73.0820	73.0825	73.2320	73.2254	73.0786	72.7894
.22090E+11	71.9769	71.9773	72.1002	72.0947	71.9737	71.7354
.25246E+11	70.9703	70.9706	71.0719	71.0672	70.9674	70.7709
.28402E+11	70.0659	70.0662	70.1496	70.1456	70.0632	69.9011
.31558E+11	69.2665	69.2667	69.3355	69.3322	69.2641	69.1302

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:46 NOV 04, 1995 CP= 35856.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP	8556 TEMP	8566 TEMP	8691 TEMP
	st4o045	it4i045	it4o045	ot4o045
.10000E-05	67.1055	47.3799	47.1683	46.9414
.20000E-05	67.1039	47.3791	47.1676	46.9407
31.558	67.1039	47.3790	47.1675	46.9405
.31558E+07	74.5468	56.9239	56.7198	56.5002
.63116E+07	78.2114	61.7690	61.5712	61.3582
.94673E+07	80.7081	65.1403	64.9482	64.7412
.12623E+08	82.6192	67.7620	67.5751	67.3734
.15779E+08	84.1679	69.9116	69.7293	69.5326
.18935E+08	85.4678	71.7321	71.5542	71.3620
.22090E+08	86.5860	73.3096	73.1356	72.9477
.25246E+08	87.5751	74.7055	74.5352	74.3511
.28402E+08	88.4583	75.9542	75.7872	75.6067
.31558E+08	89.2572	77.0840	76.9201	76.7429
.63115E+08	94.7919	84.7393	84.5963	84.4415
.94673E+08	98.2251	89.2356	89.1035	88.9603
.12623E+09	100.635	92.2874	92.1619	92.0258
.15779E+09	102.415	94.5132	94.3926	94.2616
.18935E+09	103.746	96.1862	96.0696	95.9427
.22090E+09	104.759	97.4788	97.3655	97.2422
.25246E+09	105.590	98.5530	98.4428	98.3225
.28402E+09	106.031	99.1970	99.0895	98.9722
.31558E+09	106.260	99.6045	99.4997	99.3852
.63115E+09	105.913	100.622	100.538	100.447
.94673E+09	103.390	99.0752	99.0083	98.9353
.12623E+10	99.9848	96.4202	96.3661	96.3074
.15779E+10	96.8120	93.8598	93.8160	93.7686

.18935E+10	94.1080	91.6577	91.6220	91.5835
.22090E+10	91.8003	89.7617	89.7326	89.7012
.25246E+10	89.5770	87.8687	87.8447	87.8188
.28402E+10	87.8151	86.3775	86.3577	86.3362
.31558E+10	86.3493	85.1314	85.1148	85.0968
.63115E+10	79.4139	79.0107	79.0055	78.9999
.94673E+10	76.6154	76.3367	76.3332	76.3294
.12623E+11	75.0964	74.8700	74.8671	74.8641
.15779E+11	73.9533	73.7657	73.7634	73.7609
.18935E+11	72.7884	72.6325	72.6306	72.6286
.22090E+11	71.7346	71.6051	71.6035	71.6019
.25246E+11	70.7702	70.6627	70.6614	70.6600
.28402E+11	69.9006	69.8112	69.8101	69.8090
.31558E+11	69.1297	69.0554	69.0545	69.0536

 * Temp. Prof. from center to upper right (135 deg.) z=glass top*

VARIABLE 2 IS AT NODE 1206 ITEM= TEMP COMP= NAME= t01i135

*** WARNING *** CP= 35856.430 TIME= 13:48:46
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 885 ITEM= TEMP COMP= NAME= t01o135

VARIABLE 4 IS AT NODE 887 ITEM= TEMP COMP= NAME= h01i135

VARIABLE 5 IS AT NODE 849 ITEM= TEMP COMP= NAME= c01i135

VARIABLE 6 IS AT NODE 866 ITEM= TEMP COMP= NAME= h01o135

VARIABLE 7 IS AT NODE 857 ITEM= TEMP COMP= NAME= s01i135

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= s01o135

VARIABLE 9 IS AT NODE 1394 ITEM= TEMP COMP= NAME= i01i135

VARIABLE 10 IS AT NODE 1404 ITEM= TEMP COMP= NAME= i01o135

VARIABLE 11 IS AT NODE 2146 ITEM= TEMP COMP= NAME= o01o135

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	1206 TEMP	t01i135	69.27	.3156E+11	121.1	.2840E+09
3 NSOL	885 TEMP	t01o135	69.27	.3156E+11	121.1	.2840E+09
4 NSOL	887 TEMP	h01i135	69.34	.3156E+11	130.1	.2525E+09
5 NSOL	849 TEMP	c01i135	69.33	.3156E+11	130.1	.2525E+09
6 NSOL	866 TEMP	h01o135	69.26	.3156E+11	122.0	.2840E+09
7 NSOL	857 TEMP	s01i135	67.15	31.56	106.3	.3156E+09
8 NSOL	1196 TEMP	s01o135	67.04	31.56	106.2	.3156E+09
9 NSOL	1394 TEMP	i01i135	47.30	31.56	100.6	.6312E+09
10 NSOL	1404 TEMP	i01o135	47.08	31.56	100.5	.6312E+09
11 NSOL	2146 TEMP	o01o135	46.86	31.56	100.4	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:48 NOV 04, 1995 CP= 35858.370
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP t01i135	885 TEMP t01o135	887 TEMP h01i135	849 TEMP c01i135	866 TEMP h01o135	857 TEMP s01i135
.10000E-05	99.7964	99.8425	116.462	115.874	99.5627	67.1547
.20000E-05	99.7939	99.8400	116.459	115.872	99.5608	67.1532
31.558	99.7939	99.8400	116.459	115.872	99.5608	67.1531
.31558E+07	105.460	105.505	121.630	121.198	105.621	74.5945
.63116E+07	107.867	107.911	123.582	123.227	108.209	78.2577
.94673E+07	109.325	109.367	124.617	124.312	109.772	80.7532
.12623E+08	110.332	110.374	125.237	124.968	110.852	82.6632
.15779E+08	111.079	111.119	125.626	125.386	111.651	84.2110
.18935E+08	111.657	111.697	125.875	125.658	112.269	85.5099
.22090E+08	112.119	112.158	126.032	125.834	112.761	86.6272
.25246E+08	112.515	112.553	126.148	125.967	113.182	87.6155
.28402E+08	112.855	112.892	126.229	126.062	113.541	88.4980
.31558E+08	113.153	113.190	126.287	126.134	113.856	89.2962
.63115E+08	115.350	115.382	126.858	126.784	116.144	94.8261
.94673E+08	117.050	117.080	127.712	127.679	117.891	98.2568
.12623E+09	118.399	118.428	128.544	128.538	119.270	100.665
.15779E+09	119.427	119.455	129.204	129.216	120.318	102.444
.18935E+09	120.165	120.192	129.645	129.670	121.066	103.775
.22090E+09	120.676	120.702	129.899	129.932	121.579	104.787
.25246E+09	121.063	121.088	130.054	130.094	121.965	105.617
.28402E+09	121.107	121.132	129.880	129.922	121.997	106.058
.31558E+09	120.971	120.995	129.535	129.577	121.842	106.285
.63115E+09	117.668	117.688	124.484	124.502	118.330	105.933
.94673E+09	112.898	112.913	118.346	118.337	113.366	103.406
.12623E+10	107.728	107.741	112.100	112.069	108.044	99.9978
.15779E+10	103.135	103.145	106.658	106.616	103.345	96.8225
.18935E+10	99.2917	99.2999	102.148	102.102	99.4320	94.1164
.22090E+10	96.0667	96.0734	98.3955	98.3501	96.1604	91.8072
.25246E+10	93.1125	93.1181	95.0261	94.9828	93.1739	89.5826
.28402E+10	90.7638	90.7683	92.3493	92.3095	90.8046	87.8198
.31558E+10	88.8285	88.8323	90.1544	90.1185	88.8557	86.3532
.63115E+10	80.2042	80.2054	80.6166	80.6016	80.2028	79.4151
.94673E+10	77.1527	77.1535	77.4304	77.4193	77.1491	76.6162
.12623E+11	75.5291	75.5297	75.7516	75.7423	75.5251	75.0971
.15779E+11	74.3092	74.3097	74.4915	74.4836	74.3053	73.9538
.18935E+11	73.0819	73.0824	73.2317	73.2250	73.0781	72.7888
.22090E+11	71.9768	71.9772	72.1000	72.0944	71.9733	71.7349
.25246E+11	70.9703	70.9706	71.0717	71.0669	70.9671	70.7705
.28402E+11	70.0659	70.0661	70.1494	70.1454	70.0630	69.9008
.31558E+11	69.2664	69.2666	69.3354	69.3320	69.2639	69.1299

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:48 NOV 04, 1995 CP= 35858.380
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP s01o135	1394 TEMP i01i135	1404 TEMP i01o135	2146 TEMP o01o135
.10000E-05	67.0441	47.2972	47.0855	46.8583
.20000E-05	67.0426	47.2965	47.0848	46.8576
31.558	67.0425	47.2964	47.0847	46.8575
.31558E+07	74.4892	56.8487	56.6446	56.4247
.63116E+07	78.1563	61.6983	61.5005	61.2873
.94673E+07	80.6551	65.0731	64.8810	64.6737
.12623E+08	82.5680	67.6977	67.5107	67.3088
.15779E+08	84.1183	69.8497	69.6674	69.4705
.18935E+08	85.4196	71.6724	71.4944	71.3020
.22090E+08	86.5391	73.2518	73.0777	72.8896
.25246E+08	87.5294	74.6494	74.4790	74.2947
.28402E+08	88.4136	75.8996	75.7326	75.5519
.31558E+08	89.2135	77.0308	76.8668	76.6895

.63115E+08	94.7546	84.6951	84.5520	84.3971
.94673E+08	98.1911	89.1959	89.0637	88.9204
.12623E+09	100.603	92.2503	92.1248	91.9886
.15779E+09	102.384	94.4781	94.3574	94.2263
.18935E+09	103.717	96.1525	96.0358	95.9088
.22090E+09	104.731	97.4463	97.3330	97.2095
.25246E+09	105.563	98.5215	98.4112	98.2909
.28402E+09	106.005	99.1663	99.0589	98.9414
.31558E+09	106.233	99.5747	99.4698	99.3552
.63115E+09	105.892	100.598	100.515	100.424
.94673E+09	103.373	99.0562	98.9893	98.9162
.12623E+10	99.9709	96.4046	96.3506	96.2918
.15779E+10	96.8006	93.8471	93.8033	93.7559
.18935E+10	94.0986	91.6472	91.6116	91.5730
.22090E+10	91.7925	89.7531	89.7240	89.6925
.25246E+10	89.5705	87.8615	87.8375	87.8116
.28402E+10	87.8097	86.3715	86.3516	86.3302
.31558E+10	86.3447	85.1264	85.1097	85.0918
.63115E+10	79.4124	79.0091	79.0039	78.9983
.94673E+10	76.6144	76.3356	76.3321	76.3283
.12623E+11	75.0956	74.8690	74.8662	74.8632
.15779E+11	73.9526	73.7649	73.7626	73.7602
.18935E+11	72.7878	72.6319	72.6300	72.6280
.22090E+11	71.7341	71.6046	71.6030	71.6014
.25246E+11	70.7699	70.6623	70.6610	70.6596
.28402E+11	69.9002	69.8108	69.8098	69.8086
.31558E+11	69.1294	69.0551	69.0543	69.0533

 * Can. Center Line Temperature Profile in Quad 1 WP Top to Bot *

VARIABLE 2 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ot1o135

*** WARNING *** CP= 35858.590 TIME= 13:48:48
 NSOL command erases all previously stored or calculated data
 unless STORE,MERGE is used.

VARIABLE 3 IS AT NODE 2714 ITEM= TEMP COMP= NAME= ot1i135
 VARIABLE 4 IS AT NODE 1968 ITEM= TEMP COMP= NAME= it1o135
 VARIABLE 5 IS AT NODE 1931 ITEM= TEMP COMP= NAME= it1i135
 VARIABLE 6 IS AT NODE 1088 ITEM= TEMP COMP= NAME= st1o135
 VARIABLE 7 IS AT NODE 1082 ITEM= TEMP COMP= NAME= st1i135
 VARIABLE 8 IS AT NODE 849 ITEM= TEMP COMP= NAME= ht1i135
 VARIABLE 9 IS AT NODE 853 ITEM= TEMP COMP= NAME= gt1i135
 VARIABLE 10 IS AT NODE 1 ITEM= TEMP COMP= NAME= c01i135
 VARIABLE 11 IS AT NODE 683 ITEM= TEMP COMP= NAME= gb1i135
 VARIABLE 12 IS AT NODE 684 ITEM= TEMP COMP= NAME= gb1h135
 VARIABLE 13 IS AT NODE 679 ITEM= TEMP COMP= NAME= sb1i135
 VARIABLE 14 IS AT NODE 962 ITEM= TEMP COMP= NAME= sb1o135
 VARIABLE 15 IS AT NODE 1640 ITEM= TEMP COMP= NAME= ib1i135
 VARIABLE 16 IS AT NODE 1677 ITEM= TEMP COMP= NAME= ib1o135
 VARIABLE 17 IS AT NODE 2751 ITEM= TEMP COMP= NAME= ob1o135
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2751 TEMP	ot1o135	32.16	31.56	96.45	.6312E+09
3 NSOL	2714 TEMP	ot1i135	32.20	31.56	96.46	.6312E+09
4 NSOL	1968 TEMP	it1o135	44.44	31.56	100.0	.6312E+09
5 NSOL	1931 TEMP	it1i135	44.46	31.56	100.0	.6312E+09
6 NSOL	1088 TEMP	st1o135	46.26	31.56	100.2	.6312E+09
7 NSOL	1082 TEMP	st1i135	46.28	31.56	100.2	.6312E+09
8 NSOL	849 TEMP	ht1i135	69.33	.3156E+11	130.1	.2525E+09
9 NSOL	853 TEMP	gt1i135	69.37	.3156E+11	133.3	.2525E+09
10 NSOL	1 TEMP	c01i135	69.40	.3156E+11	136.9	.1578E+08
11 NSOL	683 TEMP	gb1i135	69.41	.3156E+11	137.8	.1578E+08
12 NSOL	684 TEMP	gb1h135	69.39	.3156E+11	136.5	.1578E+08
13 NSOL	679 TEMP	sb1i135	69.21	.3156E+11	114.4	.3156E+09
14 NSOL	962 TEMP	sb1o135	69.21	.3156E+11	114.3	.3156E+09
15 NSOL	1640 TEMP	ib1i135	56.94	31.56	103.5	.6312E+09
16 NSOL	1677 TEMP	ib1o135	56.28	31.56	103.2	.6312E+09
17 NSOL	2751 TEMP	ob1o135	32.16	31.56	96.45	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.750
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2751 TEMP ot1o135	2714 TEMP ot1i135	1968 TEMP it1o135	1931 TEMP it1i135	1088 TEMP st1o135	1082 TEMP st1i135
.10000E-05	32.1622	32.2009	44.4432	44.4584	46.2574	46.2784
.20000E-05	32.1622	32.2008	44.4427	44.4579	46.2567	46.2778
31.558	32.1621	32.2007	44.4426	44.4577	46.2566	46.2776
.31558E+07	43.1699	43.2048	54.4183	54.4313	55.8022	55.8214
.63116E+07	48.8831	48.9158	59.4885	59.5002	60.6715	60.6896
.94673E+07	52.9133	52.9442	63.0184	63.0293	64.0690	64.0862
.12623E+08	56.0778	56.1073	65.7646	65.7748	66.7157	66.7323
.15779E+08	58.6904	58.7187	68.0165	68.0262	68.8897	68.9056
.18935E+08	60.9147	60.9420	69.9238	69.9330	70.7333	70.7487
.22090E+08	62.8499	62.8762	71.5763	71.5850	72.3325	72.3474
.25246E+08	64.5633	64.5888	73.0378	73.0462	73.7487	73.7631
.28402E+08	66.0979	66.1227	74.3447	74.3527	75.0162	75.0303
.31558E+08	67.4868	67.5109	75.5264	75.5342	76.1636	76.1774
.63115E+08	76.8007	76.8205	83.5055	83.5115	83.9427	83.9542
.94673E+08	82.1210	82.1388	88.1599	88.1650	88.5073	88.5176
.12623E+09	85.6672	85.6837	91.3060	91.3106	91.6023	91.6120
.15779E+09	88.2364	88.2521	93.5967	93.6010	93.8596	93.8688
.18935E+09	90.1743	90.1892	95.3180	95.3220	95.5573	95.5661
.22090E+09	91.6855	91.6999	96.6484	96.6522	96.8701	96.8787
.25246E+09	92.9482	92.9621	97.7544	97.7580	97.9618	97.9700
.28402E+09	93.7552	93.7687	98.4234	98.4269	98.6209	98.6289
.31558E+09	94.3082	94.3213	98.8521	98.8555	99.0419	99.0497
.63115E+09	96.4466	96.4569	100.022	100.025	100.167	100.174
.94673E+09	95.7084	95.7167	98.5795	98.5817	98.7030	98.7080
.12623E+10	93.6719	93.6787	96.0027	96.0045	96.1124	96.1164
.15779E+10	91.6081	91.6136	93.5081	93.5097	93.6051	93.6084
.18935E+10	89.8058	89.8104	91.3614	91.3627	91.4466	91.4493
.22090E+10	88.2330	88.2368	89.5123	89.5134	89.5866	89.5888
.25246E+10	86.5970	86.6001	87.6574	87.6583	87.7226	87.7244
.28402E+10	85.3138	85.3164	86.1983	86.1991	86.2551	86.2566
.31558E+10	84.2347	84.2369	84.9786	84.9793	85.0281	85.0294
.63115E+10	78.7205	78.7212	78.9587	78.9589	78.9773	78.9777
.94673E+10	76.1378	76.1383	76.3003	76.3005	76.3139	76.3142
.12623E+11	74.7090	74.7094	74.8402	74.8404	74.8516	74.8519
.15779E+11	73.6329	73.6332	73.7410	73.7411	73.7506	73.7508
.18935E+11	72.5226	72.5229	72.6119	72.6120	72.6201	72.6203

.22090E+11	71.5140	71.5143	71.5879	71.5880	71.5948	71.5950
.25246E+11	70.5873	70.5874	70.6484	70.6484	70.6542	70.6543
.28402E+11	69.7487	69.7488	69.7992	69.7993	69.8042	69.8043
.31558E+11	69.0036	69.0037	69.0455	69.0455	69.0496	69.0497

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.760
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	849 TEMP ht1i135	853 TEMP gt1i135	1 TEMP c01i135	683 TEMP gb1i135	684 TEMP gb1h135	679 TEMP sb1i135
.10000E-05	115.874	123.118	130.287	131.526	129.820	86.8788
.20000E-05	115.872	123.116	130.284	131.523	129.817	86.8761
31.558	115.872	123.116	130.284	131.523	129.817	86.8761
.31558E+07	121.198	127.943	134.614	135.708	134.198	92.9032
.63116E+07	123.227	129.657	136.015	137.033	135.623	95.6666
.94673E+07	124.312	130.493	136.607	137.569	136.230	97.4545
.12623E+08	124.968	130.938	136.845	137.764	136.481	98.7656
.15779E+08	125.386	131.173	136.899	137.781	136.544	99.7916
.18935E+08	125.658	131.282	136.848	137.698	136.500	100.628
.22090E+08	125.834	131.311	136.732	137.555	136.392	101.329
.25246E+08	125.967	131.311	136.603	137.402	136.269	101.944
.28402E+08	126.062	131.286	136.459	137.236	136.130	102.486
.31558E+08	126.134	131.246	136.311	137.068	135.988	102.973
.63115E+08	126.784	131.160	135.501	136.129	135.217	106.450
.94673E+08	127.679	131.671	135.633	136.194	135.377	108.825
.12623E+09	128.538	132.294	136.022	136.541	135.785	110.589
.15779E+09	129.216	132.804	136.367	136.857	136.144	111.914
.18935E+09	129.670	133.127	136.561	137.028	136.349	112.890
.22090E+09	129.932	133.280	136.605	137.055	136.401	113.606
.25246E+09	130.094	133.346	136.576	137.010	136.379	114.176
.28402E+09	129.922	133.090	136.238	136.661	136.044	114.389
.31558E+09	129.577	132.670	135.744	136.156	135.552	114.411
.63115E+09	124.502	126.996	129.480	129.819	129.297	112.428
.94673E+09	118.337	120.379	122.418	122.706	122.241	108.684
.12623E+10	112.069	113.755	115.443	115.690	115.274	104.324
.15779E+10	106.616	108.009	109.407	109.619	109.253	100.378
.18935E+10	102.102	103.256	104.417	104.597	104.278	97.0472
.22090E+10	98.3501	99.3087	100.274	100.427	100.152	94.2312
.25246E+10	94.9828	95.7838	96.5915	96.7226	96.4846	91.6012
.28402E+10	92.3095	92.9821	93.6610	93.7731	93.5681	89.5100
.31558E+10	90.1185	90.6872	91.2618	91.3579	91.1810	87.7791
.63115E+10	80.6016	80.7876	80.9762	81.0097	80.9470	79.8772
.94673E+10	77.4193	77.5469	77.6765	77.7001	77.6559	76.9326
.12623E+11	75.7423	75.8455	75.9505	75.9698	75.9336	75.3528
.15779E+11	74.4836	74.5689	74.6556	74.6716	74.6415	74.1648
.18935E+11	73.2250	73.2956	73.3674	73.3809	73.3557	72.9634
.22090E+11	72.0944	72.1528	72.2123	72.2235	72.2025	71.8794
.25246E+11	71.0669	71.1153	71.1646	71.1740	71.1565	70.8901
.28402E+11	70.1454	70.1855	70.2264	70.2342	70.2196	69.9998
.31558E+11	69.3320	69.3653	69.3992	69.4057	69.3935	69.2120

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:52 NOV 04, 1995 CP= 35861.770
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	962 TEMP	1640 TEMP	1677 TEMP	2751 TEMP
	sb1o135	ib1i135	ib1o135	ob1o135
.10000E-05	86.5861	56.9403	56.2771	32.1622
.20000E-05	86.5835	56.9391	56.2760	32.1622
31.558	86.5834	56.9389	56.2758	32.1621
.31558E+07	92.6210	65.6561	65.0135	43.1699
.63116E+07	95.3936	69.9997	69.3760	48.8831
.94673E+07	97.1896	72.9853	72.3788	52.9133
.12623E+08	98.5080	75.2858	74.6951	56.0778
.15779E+08	99.5406	77.1592	76.5829	58.6904
.18935E+08	100.383	78.7373	78.1743	60.9147
.22090E+08	101.090	80.0987	79.5481	62.8499
.25246E+08	101.710	81.3022	80.7629	64.5633
.28402E+08	102.256	82.3770	81.8481	66.0979
.31558E+08	102.748	83.3487	82.8295	67.4868
.63115E+08	106.254	89.9855	89.5318	76.8007
.94673E+08	108.644	93.9747	93.5551	82.1210
.12623E+09	110.417	96.7210	96.3232	85.6672
.15779E+09	111.749	98.7336	98.3513	88.2364
.18935E+09	112.731	100.241	99.8713	90.1743
.22090E+09	113.451	101.396	101.036	91.6855
.25246E+09	114.025	102.349	101.999	92.9482
.28402E+09	114.242	102.885	102.544	93.7552
.31558E+09	114.267	103.196	102.863	94.3082
.63115E+09	112.313	103.451	103.187	96.4466
.94673E+09	108.592	101.348	101.136	95.7084
.12623E+10	104.250	98.2614	98.0911	93.6719
.15779E+10	100.317	95.3579	95.2203	91.6081
.18935E+10	96.9983	92.8825	92.7707	89.8058
.22090E+10	94.1911	90.7676	90.6765	88.2330
.25246E+10	91.5682	88.7012	88.6264	86.5970
.28402E+10	89.4826	87.0713	87.0093	85.3138
.31558E+10	87.7562	85.7143	85.6626	84.2347
.63115E+10	79.8700	79.1966	79.1805	78.7205
.94673E+10	76.9277	76.4633	76.4525	76.1378
.12623E+11	75.3489	74.9721	74.9634	74.7090
.15779E+11	74.1616	73.8498	73.8427	73.6329
.18935E+11	72.9608	72.7020	72.6962	72.5226
.22090E+11	71.8772	71.6625	71.6577	71.5140
.25246E+11	70.8883	70.7102	70.7062	70.5873
.28402E+11	69.9984	69.8505	69.8472	69.7487
.31558E+11	69.2108	69.0879	69.0853	69.0036

 * Can. Center Line Temperature Profile in Quad 4 WP Top to Bot *

VARIABLE 2 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ot4o045

*** WARNING *** CP= 35861.980 TIME= 13:48:52
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9818 ITEM= TEMP COMP= NAME= ot4i045

VARIABLE 4 IS AT NODE 9546 ITEM= TEMP COMP= NAME= it4o045

VARIABLE 5 IS AT NODE 9509 ITEM= TEMP COMP= NAME= it4i045

VARIABLE 6 IS AT NODE 8352 ITEM= TEMP COMP= NAME= st4o045

VARIABLE 7 IS AT NODE 8346 ITEM= TEMP COMP= NAME= st4i045

VARIABLE 8 IS AT NODE 8234 ITEM= TEMP COMP= NAME= ht4i045

VARIABLE 9 IS AT NODE 8238 ITEM= TEMP COMP= NAME= gt4i045

VARIABLE 10 IS AT NODE 7642 ITEM= TEMP COMP= NAME= c04i045

VARIABLE 11 IS AT NODE 7654 ITEM= TEMP COMP= NAME= gb4i045
 VARIABLE 12 IS AT NODE 7655 ITEM= TEMP COMP= NAME= gb4h045
 VARIABLE 13 IS AT NODE 7650 ITEM= TEMP COMP= NAME= sb4i045
 VARIABLE 14 IS AT NODE 7871 ITEM= TEMP COMP= NAME= sb4o045
 VARIABLE 15 IS AT NODE 8934 ITEM= TEMP COMP= NAME= ib4i045
 VARIABLE 16 IS AT NODE 8971 ITEM= TEMP COMP= NAME= ib4o045
 VARIABLE 17 IS AT NODE 9855 ITEM= TEMP COMP= NAME= ob4o045
 STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	9855 TEMP	ot4o045	32.17	31.56	96.45	.6312E+09
3 NSOL	9818 TEMP	ot4i045	32.21	31.56	96.46	.6312E+09
4 NSOL	9546 TEMP	it4o045	44.47	31.56	100.0	.6312E+09
5 NSOL	9509 TEMP	it4i045	44.48	31.56	100.0	.6312E+09
6 NSOL	8352 TEMP	st4o045	46.28	31.56	100.2	.6312E+09
7 NSOL	8346 TEMP	st4i045	46.30	31.56	100.2	.6312E+09
8 NSOL	8234 TEMP	ht4i045	69.33	.3156E+11	130.1	.2525E+09
9 NSOL	8238 TEMP	gt4i045	69.37	.3156E+11	133.4	.2525E+09
10 NSOL	7642 TEMP	c04i045	69.40	.3156E+11	136.9	.1578E+08
11 NSOL	7654 TEMP	gb4i045	69.41	.3156E+11	137.8	.1578E+08
12 NSOL	7655 TEMP	gb4h045	69.39	.3156E+11	136.6	.1578E+08
13 NSOL	7650 TEMP	sb4i045	69.21	.3156E+11	114.4	.3156E+09
14 NSOL	7871 TEMP	sb4o045	69.21	.3156E+11	114.3	.3156E+09
15 NSOL	8934 TEMP	ib4i045	56.96	31.56	103.5	.6312E+09
16 NSOL	8971 TEMP	ib4o045	56.30	31.56	103.2	.6312E+09
17 NSOL	9855 TEMP	ob4o045	32.17	31.56	96.45	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.120
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9855 TEMP ot4o045	9818 TEMP ot4i045	9546 TEMP it4o045	9509 TEMP it4i045	8352 TEMP st4o045	8346 TEMP st4i045
.10000E-05	32.1728	32.2118	44.4666	44.4818	46.2832	46.3043
.20000E-05	32.1727	32.2118	44.4660	44.4812	46.2825	46.3036
31.558	32.1727	32.2117	44.4659	44.4811	46.2824	46.3035
.31558E+07	43.1789	43.2141	54.4393	54.4523	55.8255	55.8447
.63116E+07	48.8913	48.9243	59.5081	59.5199	60.6934	60.7115
.94673E+07	52.9208	52.9521	63.0371	63.0480	64.0897	64.1069
.12623E+08	56.0849	56.1147	65.7824	65.7926	66.7355	66.7520
.15779E+08	58.6971	58.7257	68.0336	68.0433	68.9086	68.9246
.18935E+08	60.9211	60.9486	69.9403	69.9495	70.7516	70.7670
.22090E+08	62.8560	62.8826	71.5922	71.6010	72.3502	72.3651
.25246E+08	64.5691	64.5949	73.0533	73.0617	73.7658	73.7803
.28402E+08	66.1035	66.1286	74.3597	74.3677	75.0329	75.0470
.31558E+08	67.4922	67.5166	75.5411	75.5488	76.1798	76.1936
.63115E+08	76.8049	76.8250	83.5176	83.5236	83.9561	83.9676
.94673E+08	82.1247	82.1427	88.1707	88.1758	88.5192	88.5296
.12623E+09	85.6705	85.6872	91.3161	91.3207	91.6135	91.6231
.15779E+09	88.2396	88.2554	93.6063	93.6105	93.8701	93.8793
.18935E+09	90.1772	90.1923	95.3271	95.3311	95.5673	95.5762
.22090E+09	91.6883	91.7029	96.6572	96.6610	96.8799	96.8884
.25246E+09	92.9509	92.9650	97.7629	97.7665	97.9712	97.9794

.28402E+09	93.7578	93.7715	98.4317	98.4352	98.6300	98.6381
.31558E+09	94.3107	94.3240	98.8602	98.8636	99.0508	99.0586
.63115E+09	96.4485	96.4590	100.028	100.031	100.174	100.181
.94673E+09	95.7100	95.7184	98.5847	98.5868	98.7087	98.7137
.12623E+10	93.6732	93.6801	96.0069	96.0087	96.1170	96.1211
.15779E+10	91.6092	91.6148	93.5116	93.5131	93.6089	93.6122
.18935E+10	89.8067	89.8113	91.3642	91.3655	91.4497	91.4524
.22090E+10	88.2338	88.2376	89.5146	89.5157	89.5892	89.5914
.25246E+10	86.5977	86.6008	87.6593	87.6602	87.7247	87.7266
.28402E+10	85.3143	85.3169	86.1999	86.2007	86.2569	86.2585
.31558E+10	84.2351	84.2374	84.9800	84.9806	85.0296	85.0309
.63115E+10	78.7206	78.7213	78.9591	78.9593	78.9778	78.9782
.94673E+10	76.1379	76.1384	76.3006	76.3008	76.3143	76.3146
.12623E+11	74.7091	74.7095	74.8405	74.8406	74.8519	74.8521
.15779E+11	73.6329	73.6333	73.7412	73.7413	73.7508	73.7510
.18935E+11	72.5226	72.5229	72.6121	72.6122	72.6203	72.6205
.22090E+11	71.5141	71.5143	71.5881	71.5881	71.5950	71.5951
.25246E+11	70.5873	70.5875	70.6485	70.6485	70.6543	70.6545
.28402E+11	69.7487	69.7489	69.7993	69.7994	69.8043	69.8044
.31558E+11	69.0036	69.0037	69.0456	69.0456	69.0497	69.0498

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.130
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8234 TEMP ht4i045	8238 TEMP gt4i045	7642 TEMP c04i045	7654 TEMP gb4i045	7655 TEMP gb4h045	7650 TEMP sb4i045
.10000E-05	115.911	123.156	130.326	131.567	129.859	86.9091
.20000E-05	115.909	123.154	130.324	131.565	129.857	86.9064
31.558	115.909	123.154	130.324	131.565	129.857	86.9064
.31558E+07	121.233	127.979	134.652	135.748	134.236	92.9314
.63116E+07	123.260	129.691	136.052	137.071	135.659	95.6936
.94673E+07	124.344	130.526	136.642	137.606	136.266	97.4804
.12623E+08	124.999	130.970	136.879	137.799	136.515	98.7906
.15779E+08	125.416	131.204	136.932	137.816	136.577	99.8158
.18935E+08	125.687	131.312	136.880	137.732	136.533	100.651
.22090E+08	125.863	131.340	136.764	137.589	136.424	101.352
.25246E+08	125.995	131.340	136.635	137.434	136.300	101.966
.28402E+08	126.090	131.314	136.490	137.268	136.161	102.508
.31558E+08	126.160	131.274	136.341	137.099	136.017	102.994
.63115E+08	126.807	131.184	135.527	136.156	135.243	106.468
.94673E+08	127.700	131.693	135.657	136.219	135.400	108.842
.12623E+09	128.558	132.314	136.045	136.564	135.807	110.604
.15779E+09	129.235	132.824	136.389	136.879	136.166	111.929
.18935E+09	129.688	133.146	136.582	137.050	136.369	112.905
.22090E+09	129.950	133.298	136.626	137.076	136.421	113.620
.25246E+09	130.111	133.364	136.595	137.031	136.398	114.189
.28402E+09	129.939	133.108	136.257	136.681	136.063	114.402
.31558E+09	129.593	132.687	135.762	136.176	135.571	114.423
.63115E+09	124.515	127.010	129.496	129.835	129.313	112.438
.94673E+09	118.347	120.390	122.431	122.719	122.254	108.692
.12623E+10	112.078	113.764	115.453	115.700	115.284	104.331
.15779E+10	106.623	108.017	109.416	109.628	109.261	100.383
.18935E+10	102.108	103.262	104.424	104.604	104.285	97.0520
.22090E+10	98.3551	99.3140	100.280	100.433	100.158	94.2352
.25246E+10	94.9869	95.7883	96.5964	96.7277	96.4894	91.6045
.28402E+10	92.3130	92.9858	93.6651	93.7774	93.5721	89.5128
.31558E+10	90.1214	90.6903	91.2652	91.3615	91.1844	87.7815
.63115E+10	80.6026	80.7886	80.9773	81.0109	80.9481	79.8780
.94673E+10	77.4200	77.5476	77.6773	77.7009	77.6567	76.9331
.12623E+11	75.7428	75.8461	75.9511	75.9704	75.9342	75.3533
.15779E+11	74.4841	74.5693	74.6561	74.6722	74.6420	74.1652

.18935E+11	73.2254	73.2960	73.3679	73.3813	73.3561	72.9637
.22090E+11	72.0947	72.1532	72.2127	72.2239	72.2029	71.8796
.25246E+11	71.0672	71.1156	71.1649	71.1743	71.1567	70.8903
.28402E+11	70.1456	70.1857	70.2266	70.2345	70.2198	70.0000
.31558E+11	69.3322	69.3655	69.3994	69.4059	69.3937	69.2121

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:55 NOV 04, 1995 CP= 35865.140
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7871 TEMP	8934 TEMP	8971 TEMP	9855 TEMP
	sb4o045	ib4i045	ib4o045	ob4o045
.10000E-05	86.6163	56.9621	56.2983	32.1728
.20000E-05	86.6137	56.9610	56.2972	32.1727
31.558	86.6136	56.9607	56.2970	32.1727
.31558E+07	92.6492	65.6753	65.0321	43.1789
.63116E+07	95.4204	70.0174	69.3930	48.8913
.94673E+07	97.2154	73.0020	72.3948	52.9208
.12623E+08	98.5329	75.3016	74.7102	56.0849
.15779E+08	99.5647	77.1742	76.5973	58.6971
.18935E+08	100.406	78.7517	78.1881	60.9211
.22090E+08	101.113	80.1125	79.5613	62.8560
.25246E+08	101.732	81.3156	80.7757	64.5691
.28402E+08	102.278	82.3900	81.8605	66.1035
.31558E+08	102.769	83.3612	82.8415	67.4922
.63115E+08	106.272	89.9956	89.5414	76.8049
.94673E+08	108.661	93.9836	93.5635	82.1247
.12623E+09	110.433	96.7291	96.3309	85.6705
.15779E+09	111.764	98.7413	98.3585	88.2396
.18935E+09	112.745	100.249	99.8782	90.1772
.22090E+09	113.464	101.402	101.043	91.6883
.25246E+09	114.038	102.355	102.005	92.9509
.28402E+09	114.255	102.892	102.550	93.7578
.31558E+09	114.279	103.202	102.869	94.3107
.63115E+09	112.323	103.456	103.192	96.4485
.94673E+09	108.600	101.352	101.140	95.7100
.12623E+10	104.257	98.2648	98.0943	93.6732
.15779E+10	100.323	95.3607	95.2230	91.6092
.18935E+10	97.0031	92.8848	92.7730	89.8067
.22090E+10	94.1951	90.7695	90.6784	88.2338
.25246E+10	91.5715	88.7028	88.6280	86.5977
.28402E+10	89.4854	87.0726	87.0106	85.3143
.31558E+10	87.7585	85.7155	85.6637	84.2351
.63115E+10	79.8708	79.1970	79.1809	78.7206
.94673E+10	76.9283	76.4636	76.4528	76.1379
.12623E+11	75.3494	74.9723	74.9637	74.7091
.15779E+11	74.1620	73.8500	73.8429	73.6329
.18935E+11	72.9611	72.7022	72.6964	72.5226
.22090E+11	71.8775	71.6627	71.6579	71.5141
.25246E+11	70.8885	70.7103	70.7063	70.5873
.28402E+11	69.9985	69.8505	69.8473	69.7487
.31558E+11	69.2109	69.0880	69.0853	69.0036

 * Can. Inner Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ot1oise

*** WARNING *** CP= 35865.350 TIME= 13:48:55
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2726 ITEM= TEMP COMP= NAME= ot1iise
 VARIABLE 4 IS AT NODE 1980 ITEM= TEMP COMP= NAME= it1oise
 VARIABLE 5 IS AT NODE 1943 ITEM= TEMP COMP= NAME= it1iise
 VARIABLE 6 IS AT NODE 1281 ITEM= TEMP COMP= NAME= st1oise
 VARIABLE 7 IS AT NODE 1247 ITEM= TEMP COMP= NAME= st1iise
 VARIABLE 8 IS AT NODE 1206 ITEM= TEMP COMP= NAME= ht1iise
 VARIABLE 9 IS AT NODE 1207 ITEM= TEMP COMP= NAME= gt1iise
 VARIABLE 10 IS AT NODE 63 ITEM= TEMP COMP= NAME= c01iise
 VARIABLE 11 IS AT NODE 1034 ITEM= TEMP COMP= NAME= gb1iise
 VARIABLE 12 IS AT NODE 1035 ITEM= TEMP COMP= NAME= gb1hise
 VARIABLE 13 IS AT NODE 1033 ITEM= TEMP COMP= NAME= sb1iise
 VARIABLE 14 IS AT NODE 1071 ITEM= TEMP COMP= NAME= sb1oise
 VARIABLE 15 IS AT NODE 1652 ITEM= TEMP COMP= NAME= ib1iise
 VARIABLE 16 IS AT NODE 1689 ITEM= TEMP COMP= NAME= ib1oise
 VARIABLE 17 IS AT NODE 2763 ITEM= TEMP COMP= NAME= ob1oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2763 TEMP	ot1oise	31.31	31.56	96.24	.6312E+09
3	NSOL	2726 TEMP	ot1iise	31.33	31.56	96.25	.6312E+09
4	NSOL	1980 TEMP	it1oise	50.15	31.56	101.8	.6312E+09
5	NSOL	1943 TEMP	it1iise	50.19	31.56	101.8	.6312E+09
6	NSOL	1281 TEMP	st1oise	56.80	31.56	103.6	.6312E+09
7	NSOL	1247 TEMP	st1iise	57.31	31.56	103.8	.6312E+09
8	NSOL	1206 TEMP	ht1iise	69.27	.3156E+11	121.1	.2840E+09
9	NSOL	1207 TEMP	gt1iise	69.35	.3156E+11	128.9	.2525E+09
10	NSOL	63 TEMP	c01iise	69.38	.3156E+11	132.7	.2525E+09
11	NSOL	1034 TEMP	gb1iise	69.39	.3156E+11	133.1	.2525E+09
12	NSOL	1035 TEMP	gb1hise	69.35	.3156E+11	129.0	.2525E+09
13	NSOL	1033 TEMP	sb1iise	69.26	.3156E+11	119.8	.2840E+09
14	NSOL	1071 TEMP	sb1oise	69.25	.3156E+11	119.5	.2840E+09
15	NSOL	1652 TEMP	ib1iise	60.20	31.56	104.8	.3156E+09
16	NSOL	1689 TEMP	ib1oise	59.43	31.56	104.4	.6312E+09
17	NSOL	2763 TEMP	ob1oise	31.31	31.56	96.24	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.480
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2763 TEMP ot1oise	2726 TEMP ot1iise	1980 TEMP it1oise	1943 TEMP it1iise	1281 TEMP st1oise	1247 TEMP st1iise
.10000E-05	31.3060	31.3343	50.1466	50.1952	56.8045	57.3090
.20000E-05	31.3059	31.3343	50.1458	50.1944	56.8033	57.3078
31.558	31.3059	31.3342	50.1456	50.1942	56.8031	57.3076
.31558E+07	42.4083	42.4334	59.7241	59.7696	65.6368	66.1188

.63116E+07	48.1760	48.1994	64.5308	64.5741	70.0336	70.4986
.94673E+07	52.2469	52.2688	67.8499	67.8915	73.0535	73.5039
.12623E+08	55.4445	55.4654	70.4163	70.4565	75.3782	75.8154
.15779E+08	58.0852	58.1051	72.5112	72.5500	77.2691	77.6946
.18935E+08	60.3336	60.3527	74.2789	74.3165	78.8605	79.2752
.22090E+08	62.2901	62.3085	75.8058	75.8424	80.2321	80.6369
.25246E+08	64.0223	64.0400	77.1548	77.1905	81.4438	81.8396
.28402E+08	65.5737	65.5909	78.3593	78.3942	82.5251	82.9127
.31558E+08	66.9778	66.9945	79.4477	79.4817	83.5021	83.8821
.63115E+08	76.3874	76.4009	86.8181	86.8470	90.1644	90.4935
.94673E+08	81.7546	81.7666	91.1665	91.1928	94.1631	94.4659
.12623E+09	85.3287	85.3397	94.1280	94.1527	96.9144	97.2011
.15779E+09	87.9172	87.9276	96.2871	96.3107	98.9289	99.2042
.18935E+09	89.8697	89.8796	97.9053	97.9280	100.436	100.703
.22090E+09	91.3929	91.4024	99.1496	99.1716	101.589	101.848
.25246E+09	92.6658	92.6750	100.181	100.202	102.541	102.793
.28402E+09	93.4815	93.4904	100.782	100.803	103.075	103.320
.31558E+09	94.0422	94.0508	101.150	101.170	103.382	103.621
.63115E+09	96.2385	96.2452	101.832	101.848	103.596	103.785
.94673E+09	95.5409	95.5463	100.028	100.040	101.454	101.605
.12623E+10	93.5351	93.5395	97.1723	97.1826	98.3386	98.4601
.15779E+10	91.4958	91.4995	94.4570	94.4653	95.4143	95.5123
.18935E+10	89.7133	89.7163	92.1348	92.1416	92.9237	93.0033
.22090E+10	88.1566	88.1591	90.1457	90.1512	90.7982	90.8630
.25246E+10	86.5333	86.5354	88.1802	88.1848	88.7240	88.7774
.28402E+10	85.2604	85.2621	86.6330	86.6368	87.0887	87.1329
.31558E+10	84.1896	84.1911	85.3432	85.3463	85.7278	85.7648
.63115E+10	78.7058	78.7063	79.0738	79.0748	79.1992	79.2107
.94673E+10	76.1277	76.1280	76.3785	76.3792	76.4647	76.4725
.12623E+11	74.7008	74.7011	74.9031	74.9037	74.9730	74.9793
.15779E+11	73.6261	73.6263	73.7927	73.7931	73.8505	73.8556
.18935E+11	72.5170	72.5172	72.6546	72.6549	72.7025	72.7067
.22090E+11	71.5094	71.5095	71.6231	71.6234	71.6628	71.6663
.25246E+11	70.5834	70.5835	70.6774	70.6776	70.7104	70.7132
.28402E+11	69.7455	69.7456	69.8232	69.8234	69.8506	69.8529
.31558E+11	69.0009	69.0010	69.0653	69.0655	69.0880	69.0900

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.500
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1206 TEMP htliise	1207 TEMP gtliise	63 TEMP c0liise	1034 TEMP gbliise	1035 TEMP gbliise	1033 TEMP sblise
.10000E-05	99.7964	116.202	124.033	125.070	117.066	97.9819
.20000E-05	99.7939	116.199	124.030	125.068	117.063	97.9788
31.558	99.7939	116.199	124.031	125.068	117.063	97.9788
.31558E+07	105.460	120.888	128.256	129.183	121.558	103.544
.63116E+07	107.867	122.659	129.728	130.597	123.238	105.938
.94673E+07	109.325	123.602	130.429	131.257	124.123	107.407
.12623E+08	110.332	124.169	130.789	131.583	124.645	108.433
.15779E+08	111.079	124.527	130.964	131.730	124.968	109.202
.18935E+08	111.657	124.757	131.032	131.774	125.170	109.804
.22090E+08	112.119	124.904	131.030	131.751	125.292	110.290
.25246E+08	112.515	125.014	131.007	131.709	125.382	110.710
.28402E+08	112.855	125.092	130.962	131.647	125.442	111.072
.31558E+08	113.153	125.150	130.907	131.577	125.485	111.392
.63115E+08	115.350	125.731	130.727	131.294	125.967	113.751
.94673E+08	117.050	126.577	131.169	131.682	126.765	115.545
.12623E+09	118.399	127.399	131.740	132.218	127.557	116.954
.15779E+09	119.427	128.051	132.214	132.669	128.190	118.026
.18935E+09	120.165	128.494	132.516	132.953	128.618	118.801
.22090E+09	120.676	128.756	132.660	133.081	128.870	119.344

.25246E+09	121.063	128.922	132.720	133.129	129.027	119.760
.28402E+09	121.107	128.774	132.480	132.878	128.873	119.833
.31558E+09	120.971	128.460	132.083	132.473	128.557	119.723
.63115E+09	117.668	123.731	126.674	126.998	123.815	116.659
.94673E+09	112.898	117.865	120.285	120.561	117.949	112.083
.12623E+10	107.728	111.824	113.825	114.063	111.908	107.070
.15779E+10	103.135	106.515	108.171	108.375	106.597	102.602
.18935E+10	99.2917	102.087	103.460	103.634	102.164	98.8592
.22090E+10	96.0667	98.3850	99.5254	99.6738	98.4552	95.7142
.25246E+10	93.1125	95.0471	96.0002	96.1272	95.1111	92.8238
.28402E+10	90.7638	92.3861	93.1866	93.2952	92.4435	90.5252
.31558E+10	88.8285	90.1987	90.8755	90.9688	90.2498	88.6296
.63115E+10	80.2042	80.6495	80.8704	80.9031	80.6703	80.1439
.94673E+10	77.1527	77.4573	77.6086	77.6315	77.4727	77.1127
.12623E+11	75.5291	75.7752	75.8975	75.9163	75.7881	75.4974
.15779E+11	74.3092	74.5121	74.6130	74.6286	74.5231	74.2834
.18935E+11	73.0819	73.2497	73.3332	73.3462	73.2591	73.0609
.22090E+11	71.9768	72.1156	72.1847	72.1956	72.1236	71.9597
.25246E+11	70.9703	71.0851	71.1423	71.1514	71.0918	70.9563
.28402E+11	70.0659	70.1609	70.2083	70.2158	70.1666	70.0544
.31558E+11	69.2664	69.3452	69.3844	69.3908	69.3500	69.2571

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:48:58 NOV 04, 1995 CP= 35868.510
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1071 TEMP	1652 TEMP	1689 TEMP	2763 TEMP
	sbloise	ibliise	ibloise	obloise
.10000E-05	97.2892	60.1976	59.4292	31.3060
.20000E-05	97.2861	60.1963	59.4280	31.3059
31.558	97.2860	60.1960	59.4277	31.3059
.31558E+07	102.873	68.8040	68.0545	42.4083
.63116E+07	105.287	73.0455	72.3162	48.1760
.94673E+07	106.774	75.9387	75.2285	52.2469
.12623E+08	107.817	78.1548	77.4624	55.4445
.15779E+08	108.601	79.9509	79.2751	58.0852
.18935E+08	109.217	81.4582	80.7977	60.3336
.22090E+08	109.716	82.7544	82.1082	62.2901
.25246E+08	110.147	83.8985	83.2654	64.0223
.28402E+08	110.520	84.9186	84.2976	65.5737
.31558E+08	110.851	85.8397	85.2300	66.9778
.63115E+08	113.279	92.1391	91.6056	76.3874
.94673E+08	115.108	95.9556	95.4623	81.7546
.12623E+09	116.539	98.5978	98.1295	85.3287
.15779E+09	117.626	100.537	100.086	87.9172
.18935E+09	118.414	101.984	101.548	89.8697
.22090E+09	118.967	103.085	102.661	91.3929
.25246E+09	119.393	103.992	103.579	92.6658
.28402E+09	119.475	104.485	104.082	93.4815
.31558E+09	119.374	104.755	104.362	94.0422
.63115E+09	116.382	104.676	104.365	96.2385
.94673E+09	111.862	102.317	102.071	95.5409
.12623E+10	106.893	99.0336	98.8365	93.5351
.15779E+10	102.460	95.9750	95.8168	91.4958
.18935E+10	98.7441	93.3793	93.2515	89.7133
.22090E+10	95.6205	91.1701	91.0664	88.1566
.25246E+10	92.7469	89.0300	88.9453	86.5333
.28402E+10	90.4617	87.3423	87.2724	85.2604
.31558E+10	88.5766	85.9401	85.8818	84.1896
.63115E+10	80.1275	79.2655	79.2477	78.7058
.94673E+10	77.1017	76.5095	76.4975	76.1277
.12623E+11	75.4886	75.0090	74.9994	74.7008
.15779E+11	74.2762	73.8800	73.8722	73.6261

.18935E+11	73.0550	72.7267	72.7203	72.5170
.22090E+11	71.9549	71.6828	71.6776	71.5094
.25246E+11	70.9523	70.7268	70.7225	70.5834
.28402E+11	70.0511	69.8642	69.8606	69.7455
.31558E+11	69.2544	69.0992	69.0963	69.0009

 * Can. Outer Surface Temperature Prof. in Quad 1 WP Top - Bot *

VARIABLE 2 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ot1oose

*** WARNING *** CP= 35868.720 TIME= 13:48:59
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2673 ITEM= TEMP COMP= NAME= ot1oose

VARIABLE 4 IS AT NODE 1899 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 5 IS AT NODE 1794 ITEM= TEMP COMP= NAME= it1oose

VARIABLE 6 IS AT NODE 1276 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 7 IS AT NODE 1233 ITEM= TEMP COMP= NAME= st1oose

VARIABLE 8 IS AT NODE 1196 ITEM= TEMP COMP= NAME= ht1oose

VARIABLE 9 IS AT NODE 1197 ITEM= TEMP COMP= NAME= gt1oose

VARIABLE 10 IS AT NODE 58 ITEM= TEMP COMP= NAME= c01oose

VARIABLE 11 IS AT NODE 1019 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 12 IS AT NODE 1020 ITEM= TEMP COMP= NAME= gb1oose

VARIABLE 13 IS AT NODE 1018 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 14 IS AT NODE 1066 ITEM= TEMP COMP= NAME= sb1oose

VARIABLE 15 IS AT NODE 1529 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 16 IS AT NODE 1608 ITEM= TEMP COMP= NAME= ib1oose

VARIABLE 17 IS AT NODE 2682 ITEM= TEMP COMP= NAME= ob1oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	2682 TEMP	ot1oose	34.32	31.56	97.02	.6312E+09
3	NSOL	2673 TEMP	ot1oose	34.41	31.56	97.05	.6312E+09
4	NSOL	1899 TEMP	it1oose	35.98	31.56	97.52	.6312E+09
5	NSOL	1794 TEMP	it1oose	35.94	31.56	97.51	.6312E+09
6	NSOL	1276 TEMP	st1oose	42.99	31.56	99.13	.6312E+09
7	NSOL	1233 TEMP	st1oose	43.02	31.56	99.14	.6312E+09
8	NSOL	1196 TEMP	ht1oose	67.04	31.56	106.2	.3156E+09
9	NSOL	1197 TEMP	gt1oose	69.19	.3156E+11	111.9	.3156E+09
10	NSOL	58 TEMP	c01oose	69.21	.3156E+11	113.7	.3156E+09
11	NSOL	1019 TEMP	gb1oose	69.22	.3156E+11	114.2	.3156E+09
12	NSOL	1020 TEMP	gb1oose	69.20	.3156E+11	112.8	.3156E+09
13	NSOL	1018 TEMP	sb1oose	69.16	.3156E+11	108.9	.3156E+09
14	NSOL	1066 TEMP	sb1oose	69.16	.3156E+11	108.8	.3156E+09
15	NSOL	1529 TEMP	ib1oose	52.32	31.56	101.7	.6312E+09
16	NSOL	1608 TEMP	ib1oose	52.10	31.56	101.6	.6312E+09
17	NSOL	2682 TEMP	ob1oose	34.32	31.56	97.02	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****

38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.850
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2682 TEMP ot1oose	2673 TEMP ot1iose	1899 TEMP it1oose	1794 TEMP it1iose	1276 TEMP st1oose	1233 TEMP st1iose
.10000E-05	34.3234	34.4151	35.9843	35.9439	42.9863	43.0164
.20000E-05	34.3232	34.4150	35.9841	35.9437	42.9858	43.0159
31.558	34.3232	34.4149	35.9841	35.9436	42.9856	43.0158
.31558E+07	45.1154	45.2001	46.6433	46.6071	52.7558	52.7821
.63116E+07	50.7012	50.7815	52.1456	52.1120	57.7756	57.7998
.94673E+07	54.6349	54.7116	56.0139	55.9822	61.2946	61.3173
.12623E+08	57.7201	57.7939	59.0443	59.0142	64.0457	64.0671
.15779E+08	60.2653	60.3365	61.5420	61.5132	66.3097	66.3301
.18935E+08	62.4309	62.4998	63.6657	63.6382	68.2334	68.2529
.22090E+08	64.3142	64.3811	65.5116	65.4851	69.9046	69.9234
.25246E+08	65.9816	66.0467	67.1457	67.1201	71.3854	71.4035
.28402E+08	67.4749	67.5383	68.6087	68.5839	72.7118	72.7293
.31558E+08	68.8263	68.8883	69.9326	69.9086	73.9129	73.9299
.63115E+08	77.9021	77.9542	78.8303	78.8110	82.0428	82.0565
.94673E+08	83.1049	83.1521	83.9440	83.9270	86.7841	86.7961
.12623E+09	86.5808	86.6251	87.3663	87.3507	89.9858	89.9968
.15779E+09	89.1014	89.1436	89.8495	89.8349	92.3176	92.3279
.18935E+09	91.0019	91.0425	91.7209	91.7070	94.0741	94.0839
.22090E+09	92.4824	92.5216	93.1771	93.1638	95.4367	95.4460
.25246E+09	93.7187	93.7568	94.3923	94.3795	96.5717	96.5806
.28402E+09	94.5028	94.5399	95.1576	95.1452	97.2696	97.2783
.31558E+09	95.0354	95.0715	95.6731	95.6610	97.7260	97.7344
.63115E+09	97.0176	97.0461	97.5204	97.5110	99.1314	99.1382
.94673E+09	96.1677	96.1905	96.5713	96.5637	97.8735	97.8791
.12623E+10	94.0460	94.0645	94.3732	94.3670	95.4420	95.4467
.15779E+10	91.9141	91.9292	92.1804	92.1753	93.0610	93.0650
.18935E+10	90.0572	90.0695	90.2750	90.2708	91.0029	91.0063
.22090E+10	88.4404	88.4505	88.6194	88.6159	89.2230	89.2258
.25246E+10	86.7694	86.7778	86.9177	86.9147	87.4222	87.4246
.28402E+10	85.4580	85.4649	85.5815	85.5791	86.0052	86.0073
.31558E+10	84.3562	84.3621	84.4601	84.4580	84.8184	84.8201
.63115E+10	78.7598	78.7617	78.7929	78.7923	78.9109	78.9115
.94673E+10	76.1647	76.1660	76.1873	76.1869	76.2688	76.2693
.12623E+11	74.7308	74.7319	74.7491	74.7487	74.8153	74.8157
.15779E+11	73.6509	73.6517	73.6659	73.6656	73.7208	73.7210
.18935E+11	72.5375	72.5382	72.5499	72.5496	72.5955	72.5957
.22090E+11	71.5264	71.5270	71.5366	71.5364	71.5745	71.5747
.25246E+11	70.5975	70.5980	70.6060	70.6058	70.6374	70.6376
.28402E+11	69.7572	69.7576	69.7642	69.7640	69.7903	69.7905
.31558E+11	69.0106	69.0110	69.0164	69.0163	69.0382	69.0383

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.860
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1196 TEMP ht1iose	1197 TEMP gt1iose	58 TEMP c01iose	1019 TEMP gb1iose	1020 TEMP gb1hose	1018 TEMP sb1iose
.10000E-05	67.0441	81.3887	85.9952	87.4122	84.1611	74.7770
.20000E-05	67.0426	81.3866	85.9927	87.4096	84.1586	74.7748
31.558	67.0425	81.3866	85.9927	87.4096	84.1585	74.7747

.31558E+07	74.4892	87.7082	91.9393	93.2094	90.1602	81.4200
.63116E+07	78.1563	90.6814	94.6875	95.8755	92.9576	84.6289
.94673E+07	80.6551	92.6430	96.4773	97.6052	94.7920	86.7893
.12623E+08	82.5680	94.1059	97.7971	98.8761	96.1527	88.4267
.15779E+08	84.1183	95.2669	98.8347	99.8725	97.2279	89.7439
.18935E+08	85.4196	96.2247	99.6839	100.686	98.1117	90.8431
.22090E+08	86.5391	97.0365	100.399	101.369	98.8585	91.7839
.25246E+08	87.5294	97.7511	101.026	101.968	99.5157	92.6159
.28402E+08	88.4136	98.3848	101.581	102.498	100.098	93.3574
.31558E+08	89.2135	98.9556	102.080	102.974	100.622	94.0279
.63115E+08	94.7546	102.991	105.638	106.382	104.359	98.7348
.94673E+08	98.1911	105.651	108.051	108.719	106.868	101.750
.12623E+09	100.603	107.589	109.836	110.457	108.714	103.908
.15779E+09	102.384	109.037	111.176	111.764	110.099	105.512
.18935E+09	103.717	110.111	112.167	112.729	111.124	106.709
.22090E+09	104.731	110.909	112.896	113.439	111.884	107.612
.25246E+09	105.563	111.553	113.479	114.004	112.494	108.348
.28402E+09	106.005	111.834	113.709	114.219	112.747	108.710
.31558E+09	106.233	111.918	113.748	114.245	112.808	108.868
.63115E+09	105.892	110.447	111.925	112.327	111.161	107.994
.94673E+09	103.373	107.095	108.312	108.645	107.686	105.096
.12623E+10	99.9709	103.042	104.055	104.335	103.538	101.401
.15779E+10	96.8006	99.3394	100.184	100.419	99.7564	97.9897
.18935E+10	94.0986	96.2022	96.9061	97.1036	96.5526	95.0890
.22090E+10	91.7925	93.5400	94.1278	94.2939	93.8346	92.6191
.25246E+10	89.5705	91.0316	91.5256	91.6661	91.2810	90.2651
.28402E+10	87.8097	89.0371	89.4538	89.5729	89.2486	88.3956
.31558E+10	86.3447	87.3830	87.7367	87.8382	87.5634	86.8420
.63115E+10	79.4124	79.7531	79.8708	79.9053	79.8146	79.5784
.94673E+10	76.6144	76.8486	76.9300	76.9541	76.8916	76.7294
.12623E+11	75.0956	75.2855	75.3515	75.3712	75.3205	75.1892
.15779E+11	73.9526	74.1095	74.1642	74.1805	74.1387	74.0302
.18935E+11	72.7878	72.9179	72.9633	72.9769	72.9422	72.8524
.22090E+11	71.7341	71.8419	71.8796	71.8910	71.8622	71.7878
.25246E+11	70.7699	70.8592	70.8905	70.9000	70.8761	70.8145
.28402E+11	69.9002	69.9743	70.0004	70.0082	69.9884	69.9373
.31558E+11	69.1294	69.1909	69.2126	69.2191	69.2027	69.1603

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:02 NOV 04, 1995 CP= 35871.880
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	1066 TEMP	1529 TEMP	1608 TEMP	2682 TEMP
	sbloose	ibloose	ibloose	obloose
.10000E-05	74.6363	52.3211	52.0995	34.3234
.20000E-05	74.6341	52.3202	52.0986	34.3232
31.558	74.6340	52.3200	52.0984	34.3232
.31558E+07	81.2847	61.2116	60.9973	45.1154
.63116E+07	84.4980	65.7049	65.4969	50.7012
.94673E+07	86.6623	68.8232	68.6209	54.6349
.12623E+08	88.3033	71.2435	71.0464	57.7201
.15779E+08	89.6236	73.2257	73.0333	60.2653
.18935E+08	90.7256	74.9033	74.7152	62.4309
.22090E+08	91.6691	76.3562	76.1721	64.3142
.25246E+08	92.5035	77.6429	77.4625	65.9816
.28402E+08	93.2473	78.7943	78.6174	67.4749
.31558E+08	93.9199	79.8367	79.6630	68.8263
.63115E+08	98.6409	86.9470	86.7947	77.9021
.94673E+08	101.664	91.1792	91.0381	83.1049
.12623E+09	103.826	94.0745	93.9404	86.5808
.15779E+09	105.433	96.1929	96.0640	89.1014
.18935E+09	106.633	97.7848	97.6600	91.0019
.22090E+09	107.538	99.0118	98.8905	92.4824

.25246E+09	108.276	100.030	99.9124	93.7187
.28402E+09	108.640	100.628	100.513	94.5028
.31558E+09	108.800	100.995	100.882	95.0354
.63115E+09	107.940	101.712	101.623	97.0176
.94673E+09	105.052	99.9588	99.8867	96.1677
.12623E+10	101.365	97.1476	97.0893	94.0460
.15779E+10	97.9607	94.4610	94.4137	91.9141
.18935E+10	95.0654	92.1558	92.1173	90.0572
.22090E+10	92.5997	90.1757	90.1442	88.4404
.25246E+10	90.2491	88.2153	88.1894	86.7694
.28402E+10	88.3823	86.6691	86.6476	85.4580
.31558E+10	86.8308	85.3783	85.3603	84.3562
.63115E+10	79.5749	79.0924	79.0868	78.7598
.94673E+10	76.7270	76.3933	76.3895	76.1647
.12623E+11	75.1873	74.9160	74.9129	74.7308
.15779E+11	74.0287	73.8039	73.8013	73.6509
.18935E+11	72.8511	72.6643	72.6622	72.5375
.22090E+11	71.7867	71.6315	71.6298	71.5264
.25246E+11	70.8136	70.6846	70.6832	70.5975
.28402E+11	69.9366	69.8294	69.8283	69.7572
.31558E+11	69.1597	69.0706	69.0696	69.0106

 * Can. Inner Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ot4oise

*** WARNING *** CP= 35872.080 TIME= 13:49:02
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9830 ITEM= TEMP COMP= NAME= ot4iise

VARIABLE 4 IS AT NODE 9558 ITEM= TEMP COMP= NAME= it4oise

VARIABLE 5 IS AT NODE 9521 ITEM= TEMP COMP= NAME= it4iise

VARIABLE 6 IS AT NODE 8545 ITEM= TEMP COMP= NAME= st4oise

VARIABLE 7 IS AT NODE 8511 ITEM= TEMP COMP= NAME= st4iise

VARIABLE 8 IS AT NODE 8470 ITEM= TEMP COMP= NAME= ht4iise

VARIABLE 9 IS AT NODE 8471 ITEM= TEMP COMP= NAME= gt4iise

VARIABLE 10 IS AT NODE 7947 ITEM= TEMP COMP= NAME= c04iise

VARIABLE 11 IS AT NODE 7952 ITEM= TEMP COMP= NAME= gb4iise

VARIABLE 12 IS AT NODE 7953 ITEM= TEMP COMP= NAME= gb4hise

VARIABLE 13 IS AT NODE 7951 ITEM= TEMP COMP= NAME= sb4iise

VARIABLE 14 IS AT NODE 7996 ITEM= TEMP COMP= NAME= sb4oise

VARIABLE 15 IS AT NODE 8946 ITEM= TEMP COMP= NAME= ib4iise

VARIABLE 16 IS AT NODE 8983 ITEM= TEMP COMP= NAME= ib4oise

VARIABLE 17 IS AT NODE 9867 ITEM= TEMP COMP= NAME= ob4oise

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES							
VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9867 TEMP	ot4oise	31.31	31.56	96.24	.6312E+09
3	NSOL	9830 TEMP	ot4iise	31.34	31.56	96.25	.6312E+09
4	NSOL	9558 TEMP	it4oise	50.15	31.56	101.8	.6312E+09

5	NSOL	9521	TEMP	it4iise	50.20	31.56	101.8	.6312E+09
6	NSOL	8545	TEMP	st4oise	56.81	31.56	103.6	.6312E+09
7	NSOL	8511	TEMP	st4iise	57.32	31.56	103.8	.6312E+09
8	NSOL	8470	TEMP	ht4iise	69.27	.3156E+11	121.1	.2840E+09
9	NSOL	8471	TEMP	gt4iise	69.35	.3156E+11	128.9	.2525E+09
10	NSOL	7947	TEMP	c04iise	69.38	.3156E+11	132.7	.2525E+09
11	NSOL	7952	TEMP	gb4iise	69.39	.3156E+11	133.1	.2525E+09
12	NSOL	7953	TEMP	gb4hise	69.35	.3156E+11	129.0	.2525E+09
13	NSOL	7951	TEMP	sb4iise	69.26	.3156E+11	119.8	.2840E+09
14	NSOL	7996	TEMP	sb4oise	69.25	.3156E+11	119.5	.2840E+09
15	NSOL	8946	TEMP	ib4iise	60.21	31.56	104.8	.3156E+09
16	NSOL	8983	TEMP	ib4oise	59.44	31.56	104.4	.6312E+09
17	NSOL	9867	TEMP	ob4oise	31.31	31.56	96.24	.6312E+09

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.220
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9867 TEMP ot4oise	9830 TEMP ot4iise	9558 TEMP it4oise	9521 TEMP it4iise	8545 TEMP st4oise	8511 TEMP st4iise
.10000E-05	31.3107	31.3390	50.1535	50.2021	56.8140	57.3183
.20000E-05	31.3106	31.3389	50.1528	50.2013	56.8128	57.3171
31.558	31.3106	31.3389	50.1526	50.2012	56.8126	57.3169
.31558E+07	42.4123	42.4374	59.7304	59.7759	65.6452	66.1269
.63116E+07	48.1797	48.2030	64.5366	64.5800	70.0413	70.5060
.94673E+07	52.2503	52.2722	67.8555	67.8971	73.0608	73.5109
.12623E+08	55.4478	55.4686	70.4217	70.4618	75.3850	75.8221
.15779E+08	58.0882	58.1081	72.5163	72.5551	77.2757	77.7009
.18935E+08	60.3365	60.3556	74.2838	74.3215	78.8667	79.2812
.22090E+08	62.2929	62.3112	75.8106	75.8472	80.2381	80.6427
.25246E+08	64.0250	64.0427	77.1594	77.1951	81.4496	81.8453
.28402E+08	65.5763	65.5935	78.3638	78.3987	82.5307	82.9182
.31558E+08	66.9803	66.9969	79.4521	79.4861	83.5076	83.8874
.63115E+08	76.3894	76.4029	86.8217	86.8506	90.1688	90.4977
.94673E+08	81.7563	81.7683	91.1697	91.1960	94.1670	94.4697
.12623E+09	85.3302	85.3413	94.1310	94.1557	96.9180	97.2045
.15779E+09	87.9186	87.9290	96.2900	96.3136	98.9323	99.2075
.18935E+09	89.8711	89.8809	97.9081	97.9308	100.440	100.706
.22090E+09	91.3942	91.4037	99.1523	99.1743	101.593	101.851
.25246E+09	92.6671	92.6762	100.183	100.205	102.544	102.796
.28402E+09	93.4827	93.4916	100.785	100.806	103.078	103.323
.31558E+09	94.0434	94.0520	101.152	101.172	103.385	103.624
.63115E+09	96.2394	96.2461	101.834	101.849	103.598	103.787
.94673E+09	95.5416	95.5471	100.029	100.042	101.456	101.607
.12623E+10	93.5357	93.5401	97.1736	97.1838	98.3401	98.4615
.15779E+10	91.4963	91.5000	94.4580	94.4663	95.4155	95.5135
.18935E+10	89.7138	89.7168	92.1357	92.1424	92.9248	93.0043
.22090E+10	88.1569	88.1594	90.1464	90.1519	90.7990	90.8639
.25246E+10	86.5336	86.5357	88.1808	88.1854	88.7248	88.7781
.28402E+10	85.2606	85.2624	86.6335	86.6373	87.0893	87.1334
.31558E+10	84.1898	84.1913	85.3436	85.3468	85.7283	85.7653
.63115E+10	78.7059	78.7063	79.0740	79.0750	79.1994	79.2109
.94673E+10	76.1277	76.1281	76.3786	76.3793	76.4648	76.4726
.12623E+11	74.7009	74.7012	74.9032	74.9038	74.9731	74.9794
.15779E+11	73.6261	73.6263	73.7928	73.7932	73.8506	73.8557
.18935E+11	72.5170	72.5172	72.6546	72.6550	72.7025	72.7067
.22090E+11	71.5094	71.5096	71.6231	71.6234	71.6629	71.6663
.25246E+11	70.5834	70.5835	70.6774	70.6777	70.7104	70.7132
.28402E+11	69.7455	69.7456	69.8233	69.8235	69.8506	69.8530
.31558E+11	69.0009	69.0010	69.0653	69.0655	69.0881	69.0900

***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.230
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8470 TEMP ht4iise	8471 TEMP gt4iise	7947 TEMP c04iise	7952 TEMP gb4iise	7953 TEMP gb4hise	7951 TEMP sb4iise
.10000E-05	99.8030	116.211	124.042	125.079	117.075	97.9930
.20000E-05	99.8004	116.208	124.039	125.076	117.072	97.9899
31.558	99.8004	116.208	124.039	125.077	117.072	97.9899
.31558E+07	105.466	120.896	128.264	129.192	121.567	103.554
.63116E+07	107.872	122.667	129.735	130.604	123.246	105.948
.94673E+07	109.330	123.610	130.437	131.264	124.130	107.416
.12623E+08	110.337	124.176	130.796	131.590	124.652	108.442
.15779E+08	111.084	124.534	130.971	131.738	124.975	109.211
.18935E+08	111.662	124.764	131.038	131.781	125.177	109.812
.22090E+08	112.124	124.910	131.037	131.758	125.299	110.298
.25246E+08	112.520	125.021	131.014	131.716	125.389	110.717
.28402E+08	112.859	125.098	130.969	131.654	125.449	111.079
.31558E+08	113.158	125.156	130.914	131.583	125.491	111.400
.63115E+08	115.354	125.736	130.732	131.299	125.972	113.757
.94673E+08	117.054	126.582	131.174	131.687	126.770	115.551
.12623E+09	118.402	127.403	131.744	132.223	127.561	116.959
.15779E+09	119.430	128.056	132.219	132.673	128.194	118.031
.18935E+09	120.168	128.499	132.521	132.957	128.623	118.806
.22090E+09	120.679	128.760	132.664	133.086	128.874	119.349
.25246E+09	121.066	128.926	132.724	133.133	129.031	119.765
.28402E+09	121.110	128.777	132.484	132.882	128.877	119.837
.31558E+09	120.973	128.464	132.087	132.477	128.560	119.727
.63115E+09	117.670	123.734	126.678	127.002	123.818	116.663
.94673E+09	112.900	117.868	120.288	120.564	117.951	112.086
.12623E+10	107.730	111.826	113.827	114.065	111.910	107.072
.15779E+10	103.136	106.517	108.173	108.377	106.599	102.605
.18935E+10	99.2928	102.089	103.462	103.636	102.166	98.8611
.22090E+10	96.0676	98.3864	99.5269	99.6754	98.4566	95.7157
.25246E+10	93.1133	95.0483	96.0015	96.1286	95.1123	92.8251
.28402E+10	90.7644	92.3871	93.1877	93.2964	92.4445	90.5263
.31558E+10	88.8291	90.1995	90.8764	90.9697	90.2506	88.6306
.63115E+10	80.2044	80.6498	80.8707	80.9034	80.6706	80.1442
.94673E+10	77.1528	77.4575	77.6088	77.6318	77.4729	77.1129
.12623E+11	75.5292	75.7753	75.8977	75.9165	75.7883	75.4975
.15779E+11	74.3093	74.5122	74.6131	74.6288	74.5232	74.2835
.18935E+11	73.0820	73.2498	73.3333	73.3464	73.2592	73.0610
.22090E+11	71.9769	72.1157	72.1848	72.1957	72.1237	71.9598
.25246E+11	70.9703	71.0852	71.1423	71.1515	71.0919	70.9564
.28402E+11	70.0659	70.1610	70.2083	70.2159	70.1667	70.0545
.31558E+11	69.2665	69.3452	69.3845	69.3908	69.3501	69.2571

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:05 NOV 04, 1995 CP= 35875.240
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7996 TEMP sb4oise	8946 TEMP ib4iise	8983 TEMP ib4oise	9867 TEMP ob4oise
.10000E-05	97.3005	60.2136	59.4458	31.3107
.20000E-05	97.2974	60.2123	59.4445	31.3106
31.558	97.2973	60.2121	59.4443	31.3106

.31558E+07	102.883	68.8191	68.0701	42.4123
.63116E+07	105.296	73.0599	72.3311	48.1797
.94673E+07	106.783	75.9525	75.2428	52.2503
.12623E+08	107.826	78.1682	77.4763	55.4478
.15779E+08	108.609	79.9639	79.2885	58.0882
.18935E+08	109.225	81.4708	80.8108	60.3365
.22090E+08	109.724	82.7666	82.1209	62.2929
.25246E+08	110.155	83.9105	83.2779	64.0250
.28402E+08	110.528	84.9303	84.3098	65.5763
.31558E+08	110.859	85.8511	85.2419	66.9803
.63115E+08	113.285	92.1490	91.6158	76.3894
.94673E+08	115.114	95.9646	95.4717	81.7563
.12623E+09	116.544	98.6062	98.1383	85.3302
.15779E+09	117.632	100.545	100.095	87.9186
.18935E+09	118.419	101.992	101.556	89.8711
.22090E+09	118.972	103.093	102.669	91.3942
.25246E+09	119.398	103.999	103.587	92.6671
.28402E+09	119.480	104.492	104.090	93.4827
.31558E+09	119.378	104.762	104.369	94.0434
.63115E+09	116.386	104.681	104.371	96.2394
.94673E+09	111.865	102.322	102.075	95.5416
.12623E+10	106.895	99.0372	98.8403	93.5357
.15779E+10	102.462	95.9779	95.8199	91.4963
.18935E+10	98.7460	93.3816	93.2540	89.7138
.22090E+10	95.6220	91.1720	91.0684	88.1569
.25246E+10	92.7482	89.0316	88.9469	86.5336
.28402E+10	90.4628	87.3437	87.2738	85.2606
.31558E+10	88.5775	85.9412	85.8830	84.1898
.63115E+10	80.1278	79.2659	79.2480	78.7059
.94673E+10	77.1019	76.5097	76.4978	76.1277
.12623E+11	75.4888	75.0092	74.9996	74.7009
.15779E+11	74.2763	73.8801	73.8723	73.6261
.18935E+11	73.0552	72.7269	72.7205	72.5170
.22090E+11	71.9550	71.6829	71.6777	71.5094
.25246E+11	70.9524	70.7269	70.7226	70.5834
.28402E+11	70.0512	69.8642	69.8607	69.7455
.31558E+11	69.2544	69.0993	69.0964	69.0009

 * Can. Outer Surface Temperature Prof. in Quad 4 WP Top - Bot *

VARIABLE 2 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ot4oose

*** WARNING *** CP= 35875.450 TIME= 13:49:05
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 9777 ITEM= TEMP COMP= NAME= ot4iose

VARIABLE 4 IS AT NODE 9477 ITEM= TEMP COMP= NAME= it4oose

VARIABLE 5 IS AT NODE 9318 ITEM= TEMP COMP= NAME= it4iose

VARIABLE 6 IS AT NODE 8540 ITEM= TEMP COMP= NAME= st4oose

VARIABLE 7 IS AT NODE 8497 ITEM= TEMP COMP= NAME= st4iose

VARIABLE 8 IS AT NODE 8460 ITEM= TEMP COMP= NAME= ht4iose

VARIABLE 9 IS AT NODE 8461 ITEM= TEMP COMP= NAME= gt4iose

VARIABLE 10 IS AT NODE 7927 ITEM= TEMP COMP= NAME= c04iose

VARIABLE 11 IS AT NODE 7929 ITEM= TEMP COMP= NAME= gb4iose

VARIABLE 12 IS AT NODE 7930 ITEM= TEMP COMP= NAME= gb4hose

VARIABLE 13 IS AT NODE 7928 ITEM= TEMP COMP= NAME= sb4iose

VARIABLE 14 IS AT NODE 7991 ITEM= TEMP COMP= NAME= sb4oose

VARIABLE 15 IS AT NODE 8787 ITEM= TEMP COMP= NAME= ib4iose

VARIABLE 16 IS AT NODE 8902 ITEM= TEMP COMP= NAME= ib4oose

VARIABLE 17 IS AT NODE 9786 ITEM= TEMP COMP= NAME= ob4oose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES

VARI	TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2	NSOL	9786 TEMP	ot4oose	34.36	31.56	97.03	.6312E+09
3	NSOL	9777 TEMP	ot4iose	34.45	31.56	97.05	.6312E+09
4	NSOL	9477 TEMP	it4oose	36.02	31.56	97.53	.6312E+09
5	NSOL	9318 TEMP	it4iose	35.98	31.56	97.52	.6312E+09
6	NSOL	8540 TEMP	st4oose	43.03	31.56	99.14	.6312E+09
7	NSOL	8497 TEMP	st4iose	43.06	31.56	99.15	.6312E+09
8	NSOL	8460 TEMP	ht4iose	67.10	31.56	106.3	.3156E+09
9	NSOL	8461 TEMP	gt4iose	69.19	.3156E+11	111.9	.3156E+09
10	NSOL	7927 TEMP	pt4iose	69.21	.3156E+11	113.8	.3156E+09
11	NSOL	7929 TEMP	gb4iose	69.22	.3156E+11	114.3	.3156E+09
12	NSOL	7930 TEMP	gb4hose	69.20	.3156E+11	112.8	.3156E+09
13	NSOL	7928 TEMP	sb4iose	69.16	.3156E+11	108.9	.3156E+09
14	NSOL	7991 TEMP	sb4oose	69.16	.3156E+11	108.8	.3156E+09
15	NSOL	8787 TEMP	ib4iose	52.40	31.56	101.7	.6312E+09
16	NSOL	8902 TEMP	ib4oose	52.18	31.56	101.6	.6312E+09
17	NSOL	9786 TEMP	ob4oose	34.36	31.56	97.03	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.590
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	9786 TEMP ot4oose	9777 TEMP ot4iose	9477 TEMP it4oose	9318 TEMP it4iose	8540 TEMP st4oose	8497 TEMP st4iose
.10000E-05	34.3560	34.4468	36.0224	35.9823	43.0318	43.0625
.20000E-05	34.3559	34.4467	36.0222	35.9821	43.0312	43.0619
31.558	34.3558	34.4466	36.0221	35.9820	43.0311	43.0618
.31558E+07	45.1442	45.2280	46.6770	46.6412	52.7974	52.8243
.63116E+07	50.7279	50.8073	52.1769	52.1436	57.8148	57.8395
.94673E+07	54.6599	54.7359	56.0434	56.0121	61.3319	61.3551
.12623E+08	57.7439	57.8169	59.0723	59.0425	64.0814	64.1033
.15779E+08	60.2880	60.3584	61.5688	61.5404	66.3441	66.3650
.18935E+08	62.4526	62.5208	63.6915	63.6642	68.2666	68.2866
.22090E+08	64.3351	64.4013	65.5364	65.5102	69.9368	69.9561
.25246E+08	66.0018	66.0662	67.1697	67.1443	71.4166	71.4353
.28402E+08	67.4945	67.5572	68.6320	68.6074	72.7422	72.7602
.31558E+08	68.8454	68.9066	69.9552	69.9315	73.9425	73.9600
.63115E+08	77.9175	77.9691	78.8487	78.8296	82.0675	82.0816
.94673E+08	83.1185	83.1653	83.9603	83.9435	86.8064	86.8187
.12623E+09	86.5934	86.6372	87.3814	87.3660	90.0065	90.0179
.15779E+09	89.1133	89.1551	89.8638	89.8493	92.3373	92.3479
.18935E+09	91.0132	91.0534	91.7345	91.7208	94.0930	94.1031
.22090E+09	92.4932	92.5321	93.1902	93.1770	95.4549	95.4645
.25246E+09	93.7292	93.7669	94.4050	94.3923	96.5893	96.5986
.28402E+09	94.5130	94.5497	95.1699	95.1576	97.2867	97.2957
.31558E+09	95.0453	95.0810	95.6850	95.6731	97.7426	97.7514
.63115E+09	97.0253	97.0535	97.5298	97.5205	99.1446	99.1515
.94673E+09	96.1739	96.1966	96.5789	96.5714	97.8841	97.8899
.12623E+10	94.0511	94.0694	94.3793	94.3732	95.4507	95.4555
.15779E+10	91.9183	91.9332	92.1855	92.1804	93.0681	93.0722

.18935E+10	90.0607	90.0729	90.2792	90.2750	91.0087	91.0122
.22090E+10	88.4433	88.4533	88.6228	88.6194	89.2278	89.2307
.25246E+10	86.7718	86.7801	86.9206	86.9177	87.4262	87.4287
.28402E+10	85.4600	85.4669	85.5839	85.5815	86.0086	86.0107
.31558E+10	84.3579	84.3637	84.4621	84.4600	84.8212	84.8230
.63115E+10	78.7603	78.7622	78.7936	78.7929	78.9118	78.9124
.94673E+10	76.1651	76.1664	76.1878	76.1873	76.2695	76.2699
.12623E+11	74.7312	74.7322	74.7495	74.7491	74.8158	74.8162
.15779E+11	73.6511	73.6520	73.6662	73.6659	73.7212	73.7215
.18935E+11	72.5377	72.5384	72.5502	72.5499	72.5958	72.5961
.22090E+11	71.5266	71.5271	71.5369	71.5366	71.5748	71.5750
.25246E+11	70.5976	70.5981	70.6061	70.6060	70.6377	70.6378
.28402E+11	69.7573	69.7577	69.7643	69.7642	69.7905	69.7907
.31558E+11	69.0107	69.0111	69.0166	69.0164	69.0383	69.0384

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.600
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	8460 TEMP ht4iose	8461 TEMP gt4iose	7927 TEMP c04iose	7929 TEMP gb4iose	7930 TEMP gb4hose	7928 TEMP sb4iose
.10000E-05	67.1055	81.4509	86.0634	87.4832	84.2283	74.8348
.20000E-05	67.1039	81.4488	86.0609	87.4806	84.2258	74.8326
.31.558	67.1039	81.4488	86.0609	87.4806	84.2258	74.8325
.31558E+07	74.5468	87.7672	92.0043	93.2772	90.2242	81.4748
.63116E+07	78.2114	90.7381	94.7502	95.9408	93.0192	84.6815
.94673E+07	80.7081	92.6978	96.5380	97.6684	94.8517	86.8401
.12623E+08	82.6192	94.1591	97.8560	98.9375	96.2106	88.4759
.15779E+08	84.1679	95.3186	98.8920	99.9322	97.2842	89.7917
.18935E+08	85.4678	96.2751	99.7398	100.744	98.1666	90.8896
.22090E+08	86.5860	97.0857	100.453	101.426	98.9122	91.8293
.25246E+08	87.5751	97.7992	101.080	102.024	99.5682	92.6602
.28402E+08	88.4583	98.4318	101.633	102.552	100.149	93.4008
.31558E+08	89.2572	99.0018	102.131	103.027	100.673	94.0704
.63115E+08	94.7919	103.030	105.683	106.429	104.402	98.7713
.94673E+08	98.2251	105.688	108.092	108.761	106.908	101.784
.12623E+09	100.635	107.623	109.874	110.497	108.752	103.939
.15779E+09	102.415	109.070	111.213	111.803	110.135	105.542
.18935E+09	103.746	110.142	112.202	112.767	111.159	106.738
.22090E+09	104.759	110.940	112.931	113.475	111.918	107.640
.25246E+09	105.590	111.583	113.513	114.039	112.527	108.375
.28402E+09	106.031	111.863	113.742	114.253	112.779	108.736
.31558E+09	106.260	111.947	113.780	114.279	112.839	108.894
.63115E+09	105.913	110.470	111.951	112.354	111.187	108.015
.94673E+09	103.390	107.113	108.333	108.667	107.706	105.113
.12623E+10	99.9848	103.057	104.073	104.353	103.555	101.415
.15779E+10	96.8120	99.3520	100.198	100.433	99.7703	98.0011
.18935E+10	94.1080	96.2126	96.9178	97.1159	96.5641	95.0984
.22090E+10	91.8003	93.5486	94.1375	94.3040	93.8441	92.6269
.25246E+10	89.5770	91.0388	91.5337	91.6745	91.2889	90.2716
.28402E+10	87.8151	89.0431	89.4606	89.5800	89.2553	88.4010
.31558E+10	86.3493	87.3881	87.7424	87.8442	87.5690	86.8465
.63115E+10	79.4139	79.7547	79.8726	79.9073	79.8164	79.5798
.94673E+10	76.6154	76.8498	76.9313	76.9554	76.8928	76.7304
.12623E+11	75.0964	75.2864	75.3526	75.3723	75.3215	75.1900
.15779E+11	73.9533	74.1102	74.1651	74.1814	74.1395	74.0309
.18935E+11	72.7884	72.9185	72.9640	72.9776	72.9429	72.8529
.22090E+11	71.7346	71.8424	71.8802	71.8916	71.8628	71.7882
.25246E+11	70.7702	70.8596	70.8910	70.9005	70.8766	70.8148
.28402E+11	69.9006	69.9747	70.0007	70.0086	69.9888	69.9376
.31558E+11	69.1297	69.1912	69.2129	69.2194	69.2030	69.1606

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:09 NOV 04, 1995 CP= 35878.610
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	7991 TEMP	8787 TEMP	8902 TEMP	9786 TEMP
	sb4oose	ib4iose	ib4oose	ob4oose
.10000E-05	74.6938	52.4004	52.1774	34.3560
.20000E-05	74.6915	52.3994	52.1764	34.3559
.31558E+07	74.6915	52.3992	52.1762	34.3558
.63116E+07	81.3391	61.2844	61.0688	45.1442
.94673E+07	84.5502	65.7737	65.5645	50.7279
.12623E+08	86.7128	68.8888	68.6854	54.6599
.15779E+08	88.3521	71.3066	71.1084	57.7439
.18935E+08	89.6711	73.2865	73.0931	60.2880
.22090E+08	90.7718	74.9621	74.7730	62.4526
.25246E+08	91.7142	76.4132	76.2282	64.3351
.28402E+08	92.5475	77.6983	77.5170	66.0018
.31558E+08	93.2904	78.8483	78.6705	67.4945
.63115E+08	93.9620	79.8894	79.7147	68.8454
.94673E+08	98.6772	86.9911	86.8381	77.9175
.12623E+09	101.697	91.2191	91.0773	83.1185
.15779E+09	103.857	94.1117	93.9770	86.5934
.18935E+09	105.463	96.2283	96.0988	89.1133
.22090E+09	106.662	97.8188	97.6935	91.0132
.25246E+09	107.566	99.0446	98.9228	92.4932
.28402E+09	108.303	100.062	99.9437	93.7292
.31558E+09	108.666	100.659	100.543	94.5130
.63115E+09	108.826	101.025	100.912	95.0453
.94673E+09	107.960	101.736	101.646	97.0253
.12623E+10	105.068	99.9781	99.9056	96.1739
.15779E+10	101.379	97.1633	97.1047	94.0511
.18935E+10	97.9720	94.4738	94.4264	91.9183
.22090E+10	95.0747	92.1664	92.1277	90.0607
.25246E+10	92.6074	90.1844	90.1528	88.4433
.28402E+10	90.2555	88.2226	88.1965	86.7718
.31558E+10	88.3876	86.6752	86.6535	85.4600
.63115E+10	86.8354	85.3834	85.3653	84.3579
.94673E+10	79.5763	79.0941	79.0884	78.7603
.12623E+11	76.7280	76.3944	76.3906	76.1651
.15779E+11	75.1881	74.9169	74.9138	74.7312
.18935E+11	74.0293	73.8046	73.8021	73.6511
.22090E+11	72.8516	72.6649	72.6628	72.5377
.25246E+11	71.7872	71.6320	71.6303	71.5266
.28402E+11	70.8140	70.6850	70.6836	70.5976
.31558E+11	69.9369	69.8298	69.8286	69.7573
	69.1600	69.0709	69.0699	69.0107

 * WP Outer Surface Temperature Prof. at 90 deg. WP Top - Bot *

VARIABLE 2 IS AT NODE 2874 ITEM= TEMP COMP= NAME= otwoose

*** WARNING *** CP= 35878.820 TIME= 13:49:09
 NSOL command erases all previously stored or calculated data
 unless STORE, MERGE is used.

VARIABLE 3 IS AT NODE 2610 ITEM= TEMP COMP= NAME= otwiose

VARIABLE 4 IS AT NODE 2556 ITEM= TEMP COMP= NAME= itwoose

VARIABLE 5 IS AT NODE 2504 ITEM= TEMP COMP= NAME= itwiose

VARIABLE 6 IS AT NODE 563 ITEM= TEMP COMP= NAME= stwoose
 VARIABLE 7 IS AT NODE 2186 ITEM= TEMP COMP= NAME= stwiose
 VARIABLE 8 IS AT NODE 2150 ITEM= TEMP COMP= NAME= htwiose
 VARIABLE 9 IS AT NODE 2151 ITEM= TEMP COMP= NAME= gtwiose
 VARIABLE 10 IS AT NODE 126 ITEM= TEMP COMP= NAME= c0wiose
 VARIABLE 11 IS AT NODE 2085 ITEM= TEMP COMP= NAME= gbwiose
 VARIABLE 12 IS AT NODE 2086 ITEM= TEMP COMP= NAME= gbwoose
 VARIABLE 13 IS AT NODE 2084 ITEM= TEMP COMP= NAME= sbwiose
 VARIABLE 14 IS AT NODE 660 ITEM= TEMP COMP= NAME= sbwoose
 VARIABLE 15 IS AT NODE 2236 ITEM= TEMP COMP= NAME= ibwiose
 VARIABLE 16 IS AT NODE 2272 ITEM= TEMP COMP= NAME= ibwoose
 VARIABLE 17 IS AT NODE 2874 ITEM= TEMP COMP= NAME= obwoose

STORAGE COMPLETE FOR 40 DATA POINTS

SUMMARY OF VARIABLES STORED THIS STEP AND EXTREME VALUES						
VARI TYPE	IDENTIFIERS	NAME	MINIMUM	AT TIME	MAXIMUM	AT TIME
2 NSOL	2874 TEMP	otwoose	34.83	31.56	97.18	.6312E+09
3 NSOL	2610 TEMP	otwiose	35.20	31.56	97.29	.6312E+09
4 NSOL	2556 TEMP	itwoose	35.58	31.56	97.41	.6312E+09
5 NSOL	2504 TEMP	itwiose	35.90	31.56	97.50	.6312E+09
6 NSOL	563 TEMP	stwoose	38.94	31.56	98.35	.6312E+09
7 NSOL	2186 TEMP	stwiose	39.22	31.56	98.44	.6312E+09
8 NSOL	2150 TEMP	htwiose	48.36	31.56	101.0	.6312E+09
9 NSOL	2151 TEMP	gtwiose	53.52	31.56	102.5	.6312E+09
10 NSOL	126 TEMP	c0wiose	56.92	31.56	103.4	.6312E+09
11 NSOL	2085 TEMP	gbwiose	57.96	31.56	103.6	.6312E+09
12 NSOL	2086 TEMP	gbwoose	55.97	31.56	103.0	.6312E+09
13 NSOL	2084 TEMP	sbwiose	52.65	31.56	101.9	.6312E+09
14 NSOL	660 TEMP	sbwoose	52.51	31.56	101.8	.6312E+09
15 NSOL	2236 TEMP	ibwiose	52.28	31.56	101.7	.6312E+09
16 NSOL	2272 TEMP	ibwoose	52.08	31.56	101.6	.6312E+09
17 NSOL	2874 TEMP	obwoose	34.83	31.56	97.18	.6312E+09

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.960
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2874 TEMP otwoose	2610 TEMP otwiose	2556 TEMP itwoose	2504 TEMP itwiose	563 TEMP stwoose	2186 TEMP stwiose
.10000E-05	34.8287	35.2012	35.5766	35.9000	38.9389	39.2232
.20000E-05	34.8285	35.2010	35.5765	35.8998	38.9386	39.2229
31.558	34.8285	35.2010	35.5764	35.8997	38.9385	39.2228
.31558E+07	45.5853	45.9293	46.2752	46.5725	49.3296	49.5883
.63116E+07	51.1476	51.4735	51.8007	52.0818	54.6698	54.9130
.94673E+07	55.0624	55.3739	55.6866	55.9549	58.4138	58.6451
.12623E+08	58.1316	58.4310	58.7314	58.9890	61.3411	61.5626
.15779E+08	60.6627	60.9517	61.2414	61.4898	63.7505	63.9635
.18935E+08	62.8158	63.0955	63.3759	63.6161	65.7969	66.0026
.22090E+08	64.6879	64.9593	65.2312	65.4643	67.5741	67.7732

.25246E+08	66.3452	66.6093	66.8737	67.1002	69.1472	69.3404
.28402E+08	67.8294	68.0867	68.3443	68.5650	70.5551	70.7431
.31558E+08	69.1725	69.4237	69.6751	69.8904	71.8290	72.0122
.63115E+08	78.1938	78.4054	78.6166	78.7973	80.4057	80.5581
.94673E+08	83.3693	83.5608	83.7520	83.9153	85.3596	85.4968
.12623E+09	86.8287	87.0082	87.1873	87.3402	88.6861	88.8140
.15779E+09	89.3377	89.5089	89.6794	89.8251	91.1025	91.2240
.18935E+09	91.2291	91.3937	91.5577	91.6977	92.9223	93.0388
.22090E+09	92.7020	92.8611	93.0196	93.1549	94.3356	94.4480
.25246E+09	93.9317	94.0861	94.2398	94.3710	95.5137	95.6225
.28402E+09	94.7099	94.8601	95.0095	95.1369	96.2466	96.3523
.31558E+09	95.2371	95.3834	95.5289	95.6530	96.7330	96.8359
.63115E+09	97.1764	97.2918	97.4066	97.5045	98.3550	98.4362
.94673E+09	96.2949	96.3875	96.4796	96.5582	97.2426	97.3080
.12623E+10	94.1488	94.2238	94.2984	94.3621	94.9194	94.9726
.15779E+10	91.9976	92.0586	92.1192	92.1711	92.6267	92.6702
.18935E+10	90.1254	90.1752	90.2248	90.2672	90.6411	90.6768
.22090E+10	88.4963	88.5372	88.5779	88.6128	88.9210	88.9504
.25246E+10	86.8157	86.8495	86.8832	86.9121	87.1680	87.1924
.28402E+10	85.4964	85.5246	85.5527	85.5768	85.7906	85.8110
.31558E+10	84.3885	84.4122	84.4358	84.4560	84.6361	84.6533
.63115E+10	78.7700	78.7776	78.7851	78.7915	78.8496	78.8551
.94673E+10	76.1717	76.1768	76.1820	76.1863	76.2261	76.2298
.12623E+11	74.7365	74.7406	74.7447	74.7483	74.7804	74.7834
.15779E+11	73.6555	73.6589	73.6623	73.6652	73.6917	73.6942
.18935E+11	72.5413	72.5441	72.5469	72.5493	72.5712	72.5733
.22090E+11	71.5295	71.5319	71.5342	71.5362	71.5543	71.5560
.25246E+11	70.6001	70.6020	70.6039	70.6056	70.6206	70.6220
.28402E+11	69.7593	69.7609	69.7625	69.7638	69.7763	69.7775
.31558E+11	69.0124	69.0137	69.0150	69.0162	69.0265	69.0274

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.970
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	2150 TEMP htwiose	2151 TEMP gtwiose	126 TEMP c0wiose	2085 TEMP gbwiose	2086 TEMP gbwoose	2084 TEMP sbwiose
.10000E-05	48.3590	53.5192	56.9222	57.9651	55.9693	52.6514
.20000E-05	48.3583	53.5182	56.9209	57.9638	55.9681	52.6504
31.558	48.3581	53.5180	56.9207	57.9636	55.9679	52.6502
.31558E+07	57.8762	62.5661	65.6442	66.5314	64.6479	61.5454
.63116E+07	62.6926	67.1001	69.9866	70.7930	68.9910	66.0342
.94673E+07	66.0372	70.2292	72.9709	73.7206	71.9861	69.1467
.12623E+08	68.6341	72.6477	75.2701	75.9753	74.2994	71.5608
.15779E+08	70.7608	74.6215	77.1421	77.8108	76.1869	73.5367
.18935E+08	72.5603	76.2872	78.7190	79.3568	77.7796	75.2082
.22090E+08	74.1182	77.7263	80.0793	80.6904	79.1555	76.6553
.25246E+08	75.4964	78.9987	81.2819	81.8696	80.3728	77.9366
.28402E+08	76.7286	80.1356	82.3557	82.9227	81.4608	79.0830
.31558E+08	77.8432	81.1635	83.3264	83.8749	82.4451	80.1206
.63115E+08	85.3965	88.1593	89.9550	90.3887	89.1710	87.1983
.94673E+08	89.8408	92.3250	93.9376	94.3160	93.2072	91.4140
.12623E+09	92.8610	95.1777	96.6799	97.0255	95.9832	94.2993
.15779E+09	95.0645	97.2641	98.6896	99.0129	98.0175	96.4107
.18935E+09	96.7196	98.8289	100.195	100.502	99.5433	97.9967
.22090E+09	97.9966	100.031	101.348	101.641	100.714	99.2183
.25246E+09	99.0572	101.027	102.301	102.583	101.683	100.232
.28402E+09	99.6882	101.601	102.838	103.111	102.236	100.825
.31558E+09	100.083	101.946	103.150	103.415	102.562	101.187
.63115E+09	100.997	102.468	103.420	103.629	102.953	101.862
.94673E+09	99.3722	100.560	101.330	101.501	100.956	100.076
.12623E+10	96.6559	97.6252	98.2551	98.3976	97.9543	97.2386

.15779E+10	94.0479	94.8417	95.3582	95.4773	95.1161	94.5323
.18935E+10	91.8089	92.4613	92.8864	92.9861	92.6905	92.2122
.22090E+10	89.8841	90.4223	90.7734	90.8569	90.6141	90.2207
.25246E+10	87.9685	88.4158	88.7080	88.7785	88.5775	88.2515
.28402E+10	86.4598	86.8338	87.0782	87.1379	86.9704	86.6985
.31558E+10	85.1998	85.5149	85.7211	85.7718	85.6311	85.4025
.63115E+10	79.0315	79.1332	79.1999	79.2171	79.1724	79.0994
.94673E+10	76.3506	76.4201	76.4658	76.4778	76.4475	76.3978
.12623E+11	74.8810	74.9372	74.9742	74.9840	74.9596	74.9196
.15779E+11	73.7747	73.8211	73.8516	73.8598	73.8397	73.8068
.18935E+11	72.6399	72.6783	72.7036	72.7104	72.6938	72.6666
.22090E+11	71.6112	71.6429	71.6638	71.6695	71.6559	71.6334
.25246E+11	70.6677	70.6939	70.7113	70.7160	70.7047	70.6862
.28402E+11	69.8153	69.8370	69.8514	69.8553	69.8460	69.8307
.31558E+11	69.0588	69.0768	69.0887	69.0920	69.0843	69.0716

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***** ANSYS - ENGINEERING ANALYSIS SYSTEM REVISION 5.0A *****
 38303 VERSION=HP 9000/7XX 13:49:12 NOV 04, 1995 CP= 35881.980
 FOR SUPPORT CALL ROBERT BAHNEY PHONE (702) 794-5337 FAX (702) 794-1844

DHLW WP at 100 years

***** ANSYS POST26 VARIABLE LISTING *****

TIME	660 TEMP sbwoose	2236 TEMP ibwiose	2272 TEMP ibwoose	2874 TEMP obwoose
.10000E-05	52.5093	52.2809	52.0847	34.8287
.20000E-05	52.5083	52.2799	52.0837	34.8285
31.558	52.5081	52.2797	52.0835	34.8285
.31558E+07	61.4079	61.1871	60.9973	45.5853
.63116E+07	65.9009	65.6868	65.5027	51.1476
.94673E+07	69.0171	68.8090	68.6301	55.0624
.12623E+08	71.4346	71.2320	71.0577	58.1316
.15779E+08	73.4137	73.2160	73.0461	60.6627
.18935E+08	75.0881	74.8950	74.7291	62.8158
.22090E+08	76.5378	76.3490	76.1867	64.6879
.25246E+08	77.8216	77.6367	77.4777	66.3452
.28402E+08	78.9702	78.7889	78.6330	67.8294
.31558E+08	80.0099	79.8320	79.6789	69.1725
.63115E+08	87.1016	86.9462	86.8126	78.1938
.94673E+08	91.3246	91.1809	91.0573	83.3693
.12623E+09	94.2144	94.0779	93.9604	86.8287
.15779E+09	96.3289	96.1976	96.0845	89.3377
.18935E+09	97.9175	97.7903	97.6808	91.2291
.22090E+09	99.1414	99.0177	98.9113	92.7020
.25246E+09	100.157	100.037	99.9331	93.9317
.28402E+09	100.752	100.634	100.533	94.7099
.31558E+09	101.115	101.001	100.902	95.2371
.63115E+09	101.805	101.714	101.636	97.1764
.94673E+09	100.030	99.9573	99.8945	96.2949
.12623E+10	97.2021	97.1434	97.0929	94.1488
.15779E+10	94.5028	94.4555	94.4147	91.9976
.18935E+10	92.1883	92.1499	92.1168	90.1254
.22090E+10	90.2011	90.1698	90.1428	88.4963
.25246E+10	88.2355	88.2097	88.1875	86.8157
.28402E+10	86.6852	86.6639	86.6455	85.4964
.31558E+10	85.3914	85.3735	85.3582	84.3885
.63115E+10	79.0960	79.0904	79.0856	78.7700
.94673E+10	76.3955	76.3917	76.3885	76.1717
.12623E+11	74.9177	74.9147	74.9121	74.7365
.15779E+11	73.8052	73.8028	73.8007	73.6555
.18935E+11	72.6654	72.6634	72.6616	72.5413
.22090E+11	71.6324	71.6307	71.6293	71.5295
.25246E+11	70.6853	70.6840	70.6828	70.6001
.28402E+11	69.8300	69.8289	69.8279	69.7593
.31558E+11	69.0711	69.0701	69.0693	69.0124

***** ROUTINE COMPLETED ***** CP = 35881.990

```
*****
      End of batch input file
*****
```

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

PURGE ALL SOLUTION AND POST DATA
SAVE ALL MODEL DATA

ALL CURRENT ANSYS DATA WRITTEN TO FILE NAME= glsh21j2.db
FOR POSSIBLE RESUME FROM THIS POINT

```
NUMBER OF WARNING MESSAGES ENCOUNTERED= 112
NUMBER OF ERROR MESSAGES ENCOUNTERED= 0
```

```

*** PAGE FILE USED ***
NUMBER OF R/W OPERATIONS=      30529
MAXIMUM RECORD NUMBER   =       427
RECORD SIZE (I*4 WORDS) =    16384
PAGE FILE SIZE (MB)     =    26.688

```

```

*-----*
                        ANSYS RUN COMPLETED
*-----*

                REV. 5.0 A                                HP 9000/7XX

CP TIME      (sec) =      35906.710      TIME = 13:50:00
ELAPSED TIME (sec) =      60881.000      DATE  = 11/04/95

```