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From: L. I. Kopp, Reactor Analysis

Subject: DTK One-Dimensional Transport
Theory Code

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MASTER

Attached is a write-up on the Los Alamos DTK Neutron Transport Code.

A description of the input as well as sample input for two problems are given. Several options which have not been fully checked out yet by Nuclear Analysis are indicated by (NC) and input values suggested by Los Alamos are given in these cases.

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FORM 59373

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INFORMATION CATEGORY

WANL-TMI-1041

Authorized Classifier Date

DTK ONE-DIMENSIONAL TRANSPORT THEORY CODEREFERENCES:

- (1) LA-2260, "Numerical Solution of Transient and Steady State Neutron Transport Problems."
- (2) LAMS-2346, "The DSN and TDC Neutron Transport Codes."
- (3) LAMS-2346, Appendix 1 - "The DSN Code."
- (4) LAMS-2339, "FLOCO II Manual."
- (5) Westinghouse Nuclear Design Procedure Manual - Procedure Sheet No. 37.

1. SCOPE AND LIMITATIONS

The DTK Code solves the one dimensional neutron transport equation for various linear approximations to the angular dependence of the neutron flux.

Since DTK is a transport theory code, it is not subject to the theoretical weakness of the diffusion approximation near reactor boundaries or where absorption predominates over scattering.

2. GENERAL FORMAT

The DTK input consists of one or more input sheets from which cards are punched; each line of an input sheet becomes a data card. An examination of the input sheet shows that each line consists of eight fields (a field is a space reserved for the

entry of a piece of data). Each field contains space for eight digits. The first field sometimes contains symbols which are used to identify the data in the following fields. To the left of the first field of each line, in column one, is the numeral 9 or the letter R; these symbols identify the data on the line as decimal data or remarks respectively. To the right of the last field of each line is a card identification number.

Much of the data is entered in floating point form. No more than eight significant figures may be used per datum. Blank spaces in a field are entered as zeros by the code. The first blank field signals the end of data on a card. Instructions for entering data follow.

Fixed Point Numbers (Integers)

Fixed point numbers are written to the far right in the field in which they belong. Negative data must be prefixed by a minus sign.

Floating Point Numbers

Floating point numbers are usually entered with a decimal point. They may be entered anywhere within a field. Negative data must be prefixed by a minus sign.

CAUTION: Decimal points must not be entered in the last column of a field.

It is possible to obtain greater precision in writing outsized numbers by using two fields per datum with an exponent in the second field. In this case enter a number in the first field and the symbol "N"E to the far right of the second field. The symbol "N" stands for the power of 10 by which you wish to multiply the datum in the first field. | N| < 38.

Simplifying Tricks

Automatic interpolation is available between two floating point numbers, D_0 and D_1 . In order to construct N linear interpolants between D_0 and D_1 , in consecutive fields enter D_0 , "N" I at the extreme right of the following field, and D_1 . For the case in which D_1 is in exponent form the symbol "N" J replaces "N" I.

Automatic repeating of data is available. If the number D_0 is to be repeated N times, enter D_0 in a field; to the far right in the next field enter the symbol "N" R.

Automatic zero entry is available. The symbol "N" Z to the far right enters N zeros as data.

Automatic skipping is useful in reruns for changing a single entry in a data vector. The symbol "N" S to the far right skips the first N elements of the vector before entering any data.

DTK PARAMETERS

General Specifications

The A00 parameter sets consists of general specifications (A01 through A07).

✓ A01 - Problem Identification Number (ID)

Any fixed or floating point number to identify this case.

✓ A02 - Theory (TH)

The parameter A02 specifies whether the regular ($A02 = 0$) or adjoint ($A02 = 1$) solution of the transport equation is to be found.

✓ A03 - Type of Scattering (SCT)

Multigroup transport theory with either isotropic ($A03 = 1$) or a form of linear anisotropic ($A03 = -1$) scattering may be specified.

✓ A04 - Order of S_n Approximation (SN)

The desired order (n) of the S_n approximation is entered in A04. DTK also has the capability of using Double S_n , P_n and Double P_n quadrature directions and weights. These will be described in an addendum to this report at a later date.

✓ A05 - Geometry (GE)

This parameter specifies whether the geometry be slab ($A05 = 1$), cylindrical ($A05 = 2$), or spherical ($A05 = 3$).

✓ A06 - Left (Central) Boundary Condition (BL)

The parameter A06 specifies the boundary condition at the left boundary (center of reactor for symmetric calculations). For no reflection $A06 = 0$, for perfect reflection $A06 = 1$, and $A06 = 2$ specifies a periodic condition.

A07 - Right (Outer) Boundary Condition (BR)

The outer boundary condition is defined as in A06.

Detailed Specifications

The I00 parameter sets contain detailed problem specifications.

I01 - Number of Zones (RZ)

For this parameter, enter the number of material zones in the reactor.

One usually takes a zone to mean a reactor region with uniform material composition.

Mesh spacing may be varied within a zone.

I02 - Number of Intervals (IM)

Enter the total number of space intervals in the reactor. Note that the number of intervals is one less than the total number of points.

I03 - Input Function (INP)

This specifies whether fission density ($I03 = 0$) or neutron flux ($I03 = 1$) is to be used for the input guess.

I04 - Problem Type (EVT)

This parameter specifies whether the problem is inhomogeneous ($I04 = 0$) with fixed source or homogeneous ($I04 \neq 0$) with an eigenvalue search to be performed.

The homogeneous options are:

$I04 = 1$	Reactivity calculation (k)
$I04 = 2$	Time absorption (α)
$I04 = 3$	Concentration (c)
$I04 = 4$	Zone thickness (σ)
$I04 = 5$	Critical radius (a)

✓ I05 - First Guess of Eigenvalue (EV)

This guess is used only for concentration (I04 = 3) or critical radius (I04 = 5) searches.

Suggested guesses are:

I05 = 1.0 for I04 = 3

I05 = outer radius for I04 = 5

✓ I06 - Eigenvalue Modifier (EVM)

This parameter determines the next guess used for the eigenvalue; i.e.,

next guess = $E \pm \text{EVM}$, the code choosing the sign. The standard guesses are:

For I04 = 0	I06 = 0
I04 = 1	I06 = 0
I04 = 2	I06 = -.01
I04 = 3	I06 = -.1
I04 = 4	I06 = -.1
I04 = 5	I06 = -1.0 or -2.0

✓ I07 - Precision (EPS)

This quantity determines the precision of the calculation (ϵ).

Group Specifications

The G00 parameter set specifies the group and cross section specifications.

✓ G01 - Number of Groups (GM)

Enter the number of neutron energy groups. The group number, g , of a group ranges from $g = 1$ for the highest energy group to $g = G01$ for the lowest.

✓ G02 - Row Position of σ_{tr} in Cross Section Tables (HT)

This specifies the position of σ_{tr} in the cross section tables. σ_f is in the preceeding row (HT-1) and σ_a in HT-2. σ_a need not be entered in DTK unless absorption activities are wanted in the final printout.

✓ G03 - Row Position of σ_{gg} in Cross Section Tables (HS)

This specifies the position of the cross section for scattering within group g (σ_{gg}) in the cross section tables. The up-scattering cross sections ($\sigma_{G01 \rightarrow g} \dots \sigma_{g+1 \rightarrow g}$) are in rows HT + 1 to HS. The down scattering cross sections ($\sigma_{g-1 \rightarrow g} \dots \sigma_{1 \rightarrow g}$) are in rows HS + 1 to HL.

✓ G04 - Length of Cross Section Table (HL)

This specifies the total number of cross section types per group including up and down scattering, if any. Rows 1 to HT-2 contain "free choice" cross sections, such as absorption, which are not used in the calculation but are printed out in the activity tables as $\Sigma_{\text{free choice}} \times \emptyset$.

✓ G05 - Cylinder (or plane) Height (HGT)

A buckling correction is included to allow finite cylinder and plane calculations. The code simulates the transverse leakage by adding a correction to σ_{tr} for each energy group equal to $D B_{\perp}^2$. The input parameter is then the equivalent core height including reflector savings. The extrapolation distance, d , is calculated by the code as $(G07 \times \Sigma_{tr}^{-1})$ for each energy group and added to G05 to calculate $B_h^2 = (\pi/(G05+d))^2$ for each group.

This parameter is zero if the buckling option is not used.

✓ G06 - Plane Depth (LGTH)

This parameter is the equivalent plane depth for buckling corrections to an infinite plane calculation. It is zero if a cylinder or if the buckling option is not wanted. In running an axial traverse of a cylindrical reactor, the values of G05 and G06 should be such that $(\pi/G05+d)^2 + (\pi/G06+d)^2$ is the total radial buckling of the cylinder; i.e., $(2.405/R_{eq}+d)^2$.

✓ G07 - Buckling Constant BUCNO)

This value is used to compute the group dependent extrapolation distance, d, from $d = (G07 \times \Sigma_{tr})^{-1}$. If the buckling option is requested, G07 = 1.420892 is recommended. If the buckling option is not used, G07 = 0.

Material Specifications

The M00 parameter set is the material specification parameter set.

M01 - Number of Mixture Specifications (MX)

This is the length of the tables (I0, I1, and I2 defined later) necessary to define all the mixtures. If region-wise macroscopic cross sections are to be input, this quantity is 0 since no mixtures are to be performed by DTK.

✓ M02 - Number of Cross Section Sets from Cards (MR)

This parameter specifies the number of isotopes for which cross sections are to be input from cards.

✓ M03 - Number of Cross Section Sets from Tape (MT)

This parameter specifies the number of isotopes for which cross sections are to be input from the DTK library tape. (See Appendix 1.)

are input, M04 is equal to the number of cross section sets read from cards (M02).

M05 - Density Factor Marker (DFM)

This parameter is usually set equal to 0 and thus has no effect. If M05 = 1, a table of density factors are loaded into vector D2.

M06 - Flux Input Trigger (FIT)

This parameter specifies where the initial and final fluxes are stored.

If M06 = 0	no effect
M06 = 1	flux on tape is used as initial flux (I03 = 1)
M06 = 2	initial flux is placed on tape (I03 = 1)
M06 = 4	final flux is placed on tape
M06 = 5	both 1 and 4 (I03 = 1)
M06 = 6	both 2 and 4 (I03 = 1)

Source Specifications

The S00 parameters define the source specifications and normalization factor.

S01 - Normalization Factor (NZ)

(NC)

This parameter is used to normalize the output fission density and neutron fluxes. The converged fluxes at each mesh point are multiplied by this normalization factor and enables the user to make the output fluxes correspond to any arbitrary power level.

S02 - Parameter Source Test (PVT)

(NC)

If S02 = 0, there is no effect. If S02 = 1, the calculation assumes a fixed reactivity (k_0) given in S03. If S02 = 2, the calculation assumes a fixed time absorption (α_0) given in S03.

S03 - Parameter Source (PV) (NC)

If S02 = 0	S03 = 0
S02 = 1	S03 = k
S02 = 2	S03 = α_o^o

S04 - Fixed Distributed Source (QM) (NC)

If S04 = 0	no fixed distributed source
S04 = 1	Q_{ig} specified with EVT = 0

S05 - Type of Shell Source (QSM) (NC)

If S05 = 0	no fixed shell source
S05 = 1	isotropic shell source with EVT = 0
S05 = 2	anisotropic shell source with EVT = 0

S06 - Location of Shell Source (QSP) (NC)

If S06 = 0	no fixed shell source
S06 = i	location of shell source specified at $i = i_o$, EVT = 0

Calculation Controls

The C00 parameters specify the controls for iteration and convergence.

C01 - Inner Iterations Maximum Count (IIM)

Suggest C01 = 25.

C02 - Group Skip (GS) (NC)

This option has been included to allow simplifying those calculations for

which $(\text{source})_g / (\text{source})_{g-1} = a$.

If C02 = 0	skip no groups
C02 = 1	skip groups indicated in B2 table

C03 - Diamond Method Limit (DML)

Suggest C04 = .5.

✓ C04 - Lower Limit $\lambda-1$ (LLA) (NC)

Suggest C04 = .01.

✓ C05 - Upper Limit $\lambda-1$ (HLA) (NC)

Suggest C05 = .05.

✓ C06 - EQ Limit (EQL) (NC)

Suggest C06 = .005.

✓ C07 - New Parameter Modifier (NPM)

C07 = 1.0 for all except α calculations

C07 = .75 for α calculations

Input-Output Controls

The D00 parameters control and type of output desired.

✓ D01 - Angular Flux Print (NDP)

If D01 = 0

D01 = 1

no angular flux print

print angular flux table

✓ D02 - Balance Table Print (BTZ)

This parameter should be set equal to the total number of zones (I01) plus

1 to obtain balance table print for all zones plus the sum for the entire reactor.

✓ D03 - Activity Table Print by Zone (ACZ)

This parameter determines the type of activity tables desired, if any.

If D03 = 0 there is no activity table print. If D03 = N, the activity table is printed

by zone where table D3 and D4 (explained below) of length N give the material numbers and activity types desired.

D04 - Activity Table Print by Interval (ACR)

Same as D03 except activity tables are printed by interval if D03 $\neq$ 0.

Tables D3 and D4 as above.

D05 - Outer Iterations Maximum (OIM)

This parameter specifies the maximum number of outer iterations before the problem is automatically terminated, if not finished. D05 = 100 is recommended.

D06 - Material Buckling (MB)

A material buckling output option is available. If D06 = 1, the material buckling is calculated and printed by the Balance Summary Code according to the following relationship.

$$B^2 = \frac{\sum_g \sum_i \nu_{\sigma_f} VO_i NO_{ig} - \sum_g \sum_i \sigma_a VO_i NO_{ig}}{\frac{1}{3} \sum_g \sum_i \left[NO_{ig} VO_i / (\sigma_t + \sigma_a \text{ aniso}) \right]}$$

Storage Reserve Controls

T00 block contains 20 zeros
P00 block contains 20 zeros
V00 block contains 20 zeros
E00 block contains 30 zeros

DTK DATA BLOCKS

Unconditional Input

The following data vectors must be specified for every problem.

R0 - Radius Vector (I02 + 1 long)

R0 specifies the location of each mesh point within the reactor. The first entry in R0 is 0, the last entry in R0 is the maximum radius of the reactor. Any number of mesh intervals at any mesh spacing is permitted between these two radii; the mesh spacing or interval width is variable within a zone. The total number of entries required for R0 is, of course, one more than the total number of intervals. If uniform mesh spacing between two different radii is desired, the use of automatic interpolation renders it unnecessary to enter each individual radius.

M0 - Zone Numbers (I02 long)

This data vector specifies the zone number of each interval within the reactor. It requires one entry for each interval within the reactor. The use of the automatic repeat technique simplifies matters here greatly. For example, the sample below implies that zone one consists of the first seven intervals and zone 2 consists of the next 13 intervals.

```
*  M0  1   6R  2  12R
```

M1 - Material Numbers by Zone (I01 long)

M1 specifies the material in each zone. A negative value (-N) indicates anisotropic material and material number $N + 1$ is assumed to be the anisotropic part.

✓ 10 - Mixture Numbers (M01 long)

This vector supplies the numbers to be applied to mixtures when formed.

(See example below).

11 - Material Numbers for Mixture (M01 long)

This vector specifies the cross sections to be used in forming mixtures.

(See example below).

12 - Density for Mix(M01 long)

This specifies the number densities to be used in forming mixtures.

(See example below).

Example:

<u>10</u>	<u>11</u>	<u>12</u>	
3	0	0	Clear X-sect 3 block
3	1	.94	12 x X-sect 1 + X-sect 3 to X-sect 3
3	2	.06	12 x X-sect 2 + X-sect 3 to X-sect 3
3	0	.048	12 x X-sect 3 to X-sect 3

Final value of X-sect 3 block = .048 ($.94 \times \sigma_1 + .06 \times \sigma_2$).

For C calculations:

3	3	0	EV x X-sect 3 to X-sect 3
---	---	---	---------------------------

F0 - Input Fission Density (I02 long)

This vector specifies the fission neutrons to be used for the initial flux guess by interval (I02). If I03 $\neq$ 0, this vector is not input.

N0 - Input Fission Flux (I02 x G01 long)

This specifies the initial flux guess for each interval (I02) and each group (G01) to be used if I02 = 1. If I03 = 0 or if input guess is from tape, this vector is not input.

K7 - Fission Spectrum (G01 long)

This vector specifies the fraction of the neutron fission spectrum which appears in group g (χ_g). The number of entries equals the number of groups (G01) and the sum of K7 = 1.0.

V7 - Velocities (G01 long)

This vector specifies the group velocities in cm/sec used in a calculations only where σ is replaced by $\sigma + a/v$. For I04 $\neq$ 2, the velocities are not used but must be finite, i.e., no V7 can equal 0.

A1 - Area Factors (3 long)

These factors are the same for all problems; namely, 1.0, 6.283186, and 12.56637.

V1 - Volume Factors (3 long)

These factors are the same for all problems; namely, 1.0, 2.0, 3.0.

W0 - Weights (DM long)

These are S_n constants which depend upon the order of S_n and on the geometry of the problem. The sum of W0 must equal 1.0 and there are DM values where $DM = SN + 1$ for plane or sphere and $DM = SN (SN+4)/4$ for cylinder. (See Appendix 2.)

M7 - Direction cosines (DM long)

These are also S_n constants which depend on the order of S_n and the geometry. The sum of $M7 \times W0$ must equal 0. (See Appendix 2.)

C0 - Cross Section Matrix (G01 x G04 x M02 long)

The format of the cross section data vector is as follows for each group, beginning with the highest group.

$$\underbrace{\sigma^x \dots \sigma^y}_{\text{any "free-choice" cross sections}} \quad \sigma_f \quad \sigma_{tr} \quad \underbrace{\sigma_{G \rightarrow g} \dots \sigma_{g+1 \rightarrow g}}_{\text{up-scattering into group g}} \quad \sigma_{gg} \quad \underbrace{\sigma_{g-1 \rightarrow g} \dots \sigma_{1 \rightarrow g}}_{\text{down-scattering into group g}}$$

The order in which each isotope is read in must correspond with the I1 data vector.

Conditional Input

The following data vectors are not necessarily required in every problem.

R2 - Radius Modifiers (I01 long if I04 = 4)

The radius modifiers are used in δ -calculations ($I04 = 4$) and are used to calculate the effective mesh intervals = $R0 (1 + \delta R2)$.

Q0 - Distributed Source (I02 x G01 long if S04 $\neq$ 0)

The values of the distributed source Q_{ig} only if $S04 \neq 0$.

Q5 - Isotropic Shell Source (G01 long if S05 $\neq$ 0)

The values of the isotropic shell source if $S05 \neq 0$.

Q6 - Anisotropic Shell Source (G01 long if S05 = 2)

The values of the anisotropic shell source if $S05 = 2$. $Q6$ is positive for outward scattering and negative for inward scattering.

I3 - Nuclide Numbers (M03 long)

The nuclide numbers, in decimal, ordered as they appear on tape, to be taken from the DTK library tape. (See Appendix 1).

D3 - Material Numbers for Activity Print

The material numbers for which activities are to be printed by zone if $D03 \neq 0$. (See example below).

D4 - Type of Activity Print

Location in cross section table of activity type for which print is requested. (See example below).

Example:

D3	D4	
1	1	print σ_a activity for material 1
1	2	print σ_f activity for material 1
5	3	print σ_{tr} activity for material 5
5	4	print σ_{gg} activity for material 5

Assumes a cross section format of:

σ_a at table position 1
 σ_f at table position 2
 σ_{tr} at table position 3
 σ_{gg} at table position 4

If $D04 \neq 0$ activities will also be printed by space interval.

B2 - Group Skipping Indicators (G01 long)

(NC)

If $C02 \neq 0$ and $B2 = 0$ do normal calculations for this group. If $C02 \neq 0$ and $B2 = 1$ do group skipping for this group.

DTK OPERATING INSTRUCTIONS

1. Tapes: A-4 DTK master tape. Remove and save when thru.

2. Deck order:

1. READ FLOCO 1 binary card.

2. READ DTK 1 binary card.

3. R* 900 Problem identification, remarks, etc.

9* A00, I00, G00, M00, S00, C00, D00 Input parameters.

9* T00, P00, V00, E00 Reserve space for computed values.

If restarting a problem from a card dump, dump parameter (R* 900, 9*A00, 4 binary cards) should be placed here.

1* 4960 Transition card

9* Input data. R0, M0, M1, I0, etc.

If restarting a problem from a card dump, balance of binary cards (fluxes) should be placed here.

1* 4803 Final transition card to DTK Flow Code.

Repeat from 1. for successive problems.

4. DTK END 1 binary card. This card rewinds and unloads tape A4 and gives a program stop with 777_8 in the Storage Register.

3. Sense Switches:

UP No effect

- DOWN
1. Print monitor line on-line.
 2. Punch dump on tape. Includes R* 900, 9* A00 control, 120_8 words of parameters (4 binary cards), 9* F0, F0 block, 9* N0, N0 block, 9* B0, B0 block, 9* J0, J0 block. Writes punch dump remarks on-line and goes to card reader for next problem.
 3. Force final print and dump.
 4. Force convergence.
 5. Debugging prints.
 6. Print on-line instead of off-line.

APPENDIX I

DTK MASTER LIBRARY TAPE

CROSS SECTIONS

G. Hansen 16 Group

1	AI	106	NB
2	B	19	NI
3	BE	20	O
4	C	21	PU 239
5	CD	22	PU 240
125	CE	23	PU 240-1
6	CL	24	PU 240-2
126	CO	25	PU 240-3
131	CR	26	PU 240-4
7	D	27	PU 240-5
132	D ANISO. 1	28	PU 240-6
133	D ANISO. 2	29	PU 240-7
134	D 1/E ANISO. 1	30	PU 240-8
135	D 1/E ANISO. 2	31	PU 240-9
136	D 1/E	32	PU 240-10
8	EL X	33	PU 240-11
9	F194	34	PU 240-12
10	FE	35	PU 240-13
11	H	36	PU 240-14
12	H ANISO. 1	37	PU 240-15
13	H ANISO. 2	38	PU 240-16
14	K	39	PU 240-17
15	LI 6	40	PU 240-18
16	LI 7	41	PU 249
17	MO	42	PU 249-1
105	N	43	PU 249-2

G. Hansen 16 Group

44	PU 249-3	71	U 233-12
45	PU 249-4	72	U 235
46	PU 249-5	73	U 235Y
47	PU 249-6	107	U 235 YR
48	PU 249-7	74	U 235 1
49	PU 249-8	108	U 235 1R
50	PU 249-9	75	U 235 2
51	PU 249-10	109	U 235 2R
52	PU 249-11	76	U 235 3
53	PU 249-12	110	U 235 3R
54	PU 249-13	77	U 235 4
55	PU 249-14	111	U 235 4R
56	PU 249-15	78	U 235 5
57	PU 249-16	112	U 235 5R
127	TA	79	U 235 6
58	TH	113	U 235 6R
59	U 233	80	U 235 7
60	U 233-1	114	U 235 7R
61	U 233-2	81	U 235 8
62	U 233-3	115	U 235 8R
63	U 233-4	82	U 235 9
64	U 233-5	116	U 235 9R
65	U 233-6	83	U 235 10
66	U 233-7	117	U 235 10R
67	U 233-8	84	U 235 11
68	U 233-9	128	U 235 11R
69	U 233-10	85	U 235 12
70	U 233-11	129	U 235 12R

G. Hansen 16 Group

86	U 238
87	U238Y
130	U 238 0
88	U 238 1
118	U 238 1R
89	U 238 2
119	U 238 2R
90	U 238 3
120	U 238 3R
91	U 238 4
121	U 238 4R
92	U 238 5
122	U 238 5R
93	U 238 6
123	U 238 6R
94	U 238 7
124	U 238 7R
95	U 238 8
96	U 238 9
97	U 238 10
98	U 238 11
99	U 238 12
100	U 238 13
101	U 238 14
102	U 238 15
103	U 238 16
104	ZR

T. Frank 18 Group

256	AL	281	NB
257	BE 1	282	NI 1
258	BE 2	283	NI 2
259	C 1	284	O 1
260	CD	285	O 2
261	CU	286	SC
262	CU 1	287	SI
263	FE	288	TA
264	H 1	289	U 235 1
265	H 2	290	U 235 2
266	K	291	U 235 3
267	LI 7A	292	U 238
268	LI 7B	293	W
269	LKG 1	294	ZR
270	LKG 2		
271	LKG 3		
272	LKG 4		
273	LKG 5		
274	LKG 6		
275	LKG 7		
276	LKG 8		
277	LKG 9		
278	MO 1		
279	MO 2		
280	NA		

B. Kirk 18 Group

472	BE K
473	NB K
474	NB M

B. Kiehn 10 Group

512	AL	538	PU 239
513	B	539	PU 239 5
514	BE	540	PU 240
515	BE 2	541	PU 240 B
516	BE 3	542	PU 250
517	BI	543	T
518	C	544	TA
519	CB	545	TA S
520	CE	546	U 235
521	CR	547	U 238
522	D	548	U 238 S
523	F	549	Y
524	FE	550	ZR
525	H		
526	HG		
527	JEZ		
528	K		
529	L		
530	LA		
531	MG		
532	N		
533	NA		
534	NB		
535	NI		
536	O		
537	PB		

C. Mills 18 Group

640	AL	669	PU 239
641	B	670	PU 240
642	BE	671	SI
643	BE DB2	672	TA
644	BE O	673	U 233 A
645	BE OB	674	U 235 R
646	BI	675	U 235 T = .50
647	C	676	U 235 FOIL 1 MIL
648	C DB2	677	U 235 FOIL 2 MIL
649	D	678	U 235 FOIL 4 MIL
650	D DB2	679	U 235 FOIL 10 MIL
651	F	680	U 235 SIG.P = 100
652	¹ FE	681	U 235 SIG.P = 400
653	F.P.	682	U 235 SIG.P = 800
654	GD	683	U 238
655	H	684	U 238 SIG.P = 20
656	H ANISO. 1	685	U 238 SIG.P = 25
657	H ANISO. 2	686	U 238 SIG.P = 40
658	H DB2	687	U 238 SIG.P = 80
659	LI 6	688	U 238 SIG.P = 100
660	LI 7	689	U 238 SIG.P = 150
661	MO	690	U 238 SIG.P = 200
662	MO .01	691	U 238 SIG.P = 300
663	N	692	U 238 SIG.P = 400
664	NA	693	U 238 SIG.P = 1000
665	NB	694	U 238 SIG.P = 2000
666	O	695	U 238 SIG.P = INF.
667	OY	696	ZR
668	PB		

C. Mills 24 Group

768	AL	795	O .056
769	B	796	O .1
770	BE .025	797	OY .025
771	BE .1	798	U 235 4 MIL
772	BE .2	799	U 235 .025 SIG.P = 1600
773	BE DB SQD	800	U 235 .05 SIG.P = 1600
774	BE O DB SQD	801	U 235 .1 SIG.P = 1600
775	C .025	802	U 235 .15 SIG.P = 1600
776	C .056	803	U 235 .2 SIG.P = 1600
777	C .0788	804	U 235 .5 SIG.P = 1600
778	C .1	805	U 235 .025 SIG.P = INF.
779	C .152	806	U 235 .025 2 MIL
780	C .194	807	U 235 .056 2 MIL
781	C .280	808	U 235 .0788 2 MIL
782	C DB SQD	809	U 235 .1 2 MIL
783	D	810	TU .025
784	D DB SQD	811	U 238 .025
785	FE		
786	H .025		
787	H .034		
788	H .056		
789	H .1		
790	N		
791	NB		
792	NI		
793	O .025		
794	O .034		

APPENDIX II

LISTING OF S_N CONSTANTS
FOR PLANE AND SPHERE (PS) AND CYLINDER (C)

M7 CARDS ARE DIRECTION COSINES

WO CARDS ARE WEIGHTS

9*	M7	-1.0	N7735027	E7735027						1MS2	PS	
9*	W0	0.0	E	E						1WS2	PS	
9*	M7	-1.0	N7735027	E7735027						1 M7	S2C	
9*	W0	0	.5	.5						1 W0	S2C	
9*	M7	-1.0	R3094934	08313005	K5819889	B5819889	F8313005	I3094934	1MS6	PS		
9*	W0	0.0	+8043063	A7247208	B4709729	B4709729	A7247208	+8043063	1WS6	PS		
9*	M7	M714045	L3333333	C3333333	R428090	Q8191710	L3333333	C3333333	30M7	S	4C	
9H8191710									1M7	S4C		
9*	W0	0	A6666667	A6666667	0		A6666667	A6666667	A6666667	0W0	S	4C
9A6666666										1W0	S4	C
9*	M7	L651483	K5819889	B5819889	P302967	08313005	K5819889	B5819889	0M7S	6C		
9F8313005	R660917		R3094934	08313005	K5819889	B5819889	F8313005	I3094934	1M7S	6C		
9*	W0	0	+8043063	+8043063	0		+8623605	+8623605	+8623604	0W0	S	6C
9+8623604	0		+8043062	+8623604	+8043062		+8043062	+8623604	+8043062	1W0	S	6C
9*	M7	-1.0	R5118973	P8679579	N7735027	K1821789	B1821789	E7735027	1MS8	PS		
9G8679579	I5118973								2MS8	PS		
9*	W0	0.0	+5330038	A0117273	A3775341	B0777348	B0777348	A3775341	1WS8	PS		
9A0117273	+5330038								2WS8	PS		
9*	M7	L086067	K1821789	B1821789	0172133	N7735027	K1821789	B1821789	0M7S	8C		
9E7735027	Q164965		P8679579	N7735027	K1821789	B1821789	E7735027	G8679579	1M7S	8C		
9R759000	R5118973		P8679579	N7735027	K1821789	B1821789	E7735027	G8679579	2M7S	8C		
9I5118973									37M	S8	C	
9*	W0	0	+5330038	+5330038	0		+5058636	+5058636	+5058636	0W0S	8C	
9+5058636	0		+5058636	+3658070	+5058636		+5058636	+3658070	+5058636	1W0S	8C	
90		+5330038	+5058636	+5058636	+5330038		+5330038	+5058636	+5058636	2W0S	8C	
9+5330038										3W0	S8	C
9*	M7	-1.0	R6922337	Q7038828	P5878691	02764591	M6056619	J7407766	M	S12	PS	
9A7407766	D6056619		F2764591	G5878691	H7038828	I6922337			M	S12	PS	
9*	W0	0.0	+3188428	+5689987	+6274470	+7565162	A0677512	A6604441	W	S12	PS	
9A6604441	A0677512		+7565162	+6274470	+5689987	+3188428			W	S12	PS	
9*	M7	K461829	J7407766	A7407766	M923659	M6056619	J7407766	A7407766	0M7S	S12C		
9D6056619	O513389		02764591	M6056619	J7407766	A7407766	D6056619	F2764591	1M7S	S12C		
9P784989	P5878691		02764591	M6056619	J7407766	A7407766	D6056619	F2764591	2M7S	S12C		
9G5878691	Q876253		Q7038828	P5878691	02764591	M6056619	J7407766	A7407766	3M7S	S12C		
9D6056619	F2764591		G5878691	H7038828	R847319	R6922337	Q7038828	P5878691	4M7S	S12C		
902764591	M6056619		J7407766	A7407766	D6056619	F2764591	G5878691	H7038828	5M7S	S12C		
9I6922337									6M7	S12C		
9*	W0	0	+3188428	+3188428	0		+2844993	+2844993	+2844993	0W0S	S12C	
9+2844993	0		+2268799	+1736872	+2268799		+2268799					

9*	W0	0.0	+2275580	+3977459	+4168873	+4596055	+5263464	+6401735W	S16	PS
9+9050406	A4266428	A4266428	+9050406	+6401735	+5263464	+4596055	+4168873W	S16	PS	
9+3977459	+2275580							W	S16	PS
9*	W0	0	+2275580	+2275580	0	+1988730	+1988730	+1988730	0W0S16C	
9+1988730	0		+1502308	+1164258	+1502308	+1502308	+1164258	+1502308	1W0S16C	
90	+1366597		+0931431	+0931431	+1366597	+1366597	+0931431	+0931431	2W0S16C	
9+1366597	0		+1366597	+0881570	+0767129	+0881570	+1366597	+1366597	3W0S16C	
9+0881570	+0767129		+0881570	+1366597	0	+1502307	+0931430	+0767130	4W0S16C	
9+0767130	+0931431		+1502308	+1502308	+0931431	+0767130	+0767130	+0931431	5W0S16C	
9+1502308	0		+1988729	+1164258	+0931430	+0881570	+0931430	+1164258	6W0S16C	
9+1988729	+1988729		+1164258	+0931430	+0881570	+0931430	+1164258	+1988729	7W0S16C	
90	+2275580		+1988729	+1502307	+1366597	+1366597	+1502307	+1988729	8W0S16C	
9+2275580	+2275580		+1988729	+1502307	+1366597	+1366597	+1502307	+1988729	9W0S16C	
9I7752522									10M7S16C	
9*	M7	K108185	J4907120	A4907120	M216370	L9440532	J4907120	A4907120	0M7S16C	
9C9440532	N577733	N3748385	L9440532	J4907120	A4907120	C9440532	E3748385	1M7S16C		
90666666	04978629	N3748385	L9440532	J4907120	A4907120	C9440532	E3748385	2M7S16C		
9F4978629	P601169	P4535599	04978629	N3748385	L9440532	J4907120	A4907120	3M7S16C		
9C9440532	E3748385	F4978629	G4535599	Q432740	Q2999331	P4535599	04978629	4M7S16C		
9N3748385	L9440532	J4907120	A4907120	C9440532	E3748385	F4978629	G4535599	5M7S16C		
9H2999331	R189365	R0676470	Q2999331	P4535599	04978629	N3748385	L9440532	6M7S16C		
9J4907120	A4907120	C9440532	E3748385	F4978629	G4535599	H2999331	I0676470	7M7S16C		
9K888264	R7752522	R0676470	Q2999331	P4535599	04978629	N3748385	L9440532	8M7S16C		
9J4907120	A4907120	C9440532	E3748385	F4978629	G4535599	H2999331	I0676470	9M7S16C		
9+2275580								10W0S16C		

APPENDIX III

LISTING OF FISSION SPECTRA (K7) AND NEUTRON VELOCITIES (V7) FOR DTK CROSS SECTION LIBRARIES

FRANK	18 GROUP
HANSEN	16 GROUP
KIEHN	10 GROUP
MILLS	18 GROUP

9*	K7	.204	.344	.168	.180	.09	.014		12Z1FRNK18G
9*	V7	28.5	19.9	14.7	11.0	6.7	2.7	1.23	2FRNK18G
9.508		.186	.0858	.052	.0304	.0198	.0116	.00698	3FRNK18G
9.00426		.00275	.00193						4FRNK18G
9*	K7	.204	.344	.168	.18	.09	.014		10Z1HNSN16G
9*	V7	28.5	19.9	14.7	11.0	6.7	2.9	1.14	2HNSN16G
9.48		.206	.101	.0566	.0319	.0179	.0109	.00606	3HNSN16G
9.0022									4HNSN16G
9*	K7	.32656	.22704	.3026	.10682	.02828	.0065	.0022	1KIEN10G
9	3Z *	V7	23.888	18.0	12.4	7.52	4.56	2.76	2KIEN10G
91.677		.3710	.0398	.00338					3KIEN10G
9*	K7	.204	.344	.168	.180	.090	.014		12Z1MILL18G
9*	V7	28.5	19.9	14.7	11.0	6.7	2.7	1.23	2MILL18G
9.508		.186	.0858	.052	.0304	.0198	.0116	.00698	3MILL18G
9.00426		.00275	.00193						4MILL18G

APPENDIX IV

SAMPLE PROBLEMS

1. UCRL Hot Box Reactor with 8-group macroscopic cross sections.
2. UCRL Hot Box Reactor with 24-group DTK library cross sections (Mills).

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*NF-8020-n FOPP 601LIK059000 IV-1 02 43406FORTSYST
R* 900 STD E GROUP - C/U=301 - TEMP=0.025 °V
9* A00 301025 0 1 4 3 1 0
9* I00 1 22 0 1 0 0 .0001
9* C00 3 3 6 10
9* F00 1 0 1 0 0
9* S00 1.0
9* C00 2 0 .5 .01 .05 .005 1.0
9* D00 1 2 0 0 100 1
9* T00 207 * P00 202 * V00 207 * E00 302
I* 4960
9* R0 0.0 201 63.0 63.48
9* M0 1 21R
9* M1 1
9* K7 .75178 .24322 62
9* V7 1.0 7R
9* F0 1.0 21R
9* A1 1.0 5.293186 12.56637
9* V1 1.0 2.0 3.0
9* W0 0.0 .1666667 .3333333 .3333333 .1666667
9* M7 -1.0 -.881917 -.333333 .333333 .881917
9* C0 .000371 .00095 .15043 0.0 0.0 .12543 0.0
9 0.0 0.0 0.0 .000774 .001485 .32608 0.0 0.0
9 .31522 .024628 0.0 0.0 0.0 .007795 .010873 .37214
9 0.0 0.0 .36177 .01009 0.0 0.0 0.0 .005025
9 .01026 .36792 0.0 .000496 .184101 .002599 0.0 0.0
9 0.0 .019079 .03719 .38193 0.0 .002371 .289336 .178794
9 .000202 0.0 0.0 .02704 .05638 .38994 0.0 .006854
9 .294785 .073044 .000005 0.0 0.0 .062129 .1234 .42489
9 0.0 .032455 .324413 .065742 .000023 0.0 0.0 .10797
9 .22355 .4613 0.0 0.0 .320873 .031492 .000002 0.0
9 0.0
I* 4803

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R*      900 MILLS 24 GROUP - C/U=301 - TEMP=0.025 EV IV-2
9*      A00      301025      0      1      4      3      1      0
9*      I00      1      22      0      1      0      0      .0001
9*      G00      24      3      8      12      0      0      0
9*      M00      3      0      2      3      0      0
9*      S00 1.0
9*      C00      20      0 .5      .01      .05      .005      1.0
9*      D00      1      2      0      0      100      1
9*      T00      20/ *      P00      20/ *      V00      20/ *      E00      30/
I*      4960
9*      R0 0.0      20I 63.0      63.48
9*      M0      1      21R
9*      M1      3
9*      I0      3      3
9*      I1      0      1      2
9*      I2      0 .0823      .0002734
9*      K7 .204      .344      .168      .18      .09      .014      18Z
9*      F0 1.0      21R
9*      V7 28.5      19.9      14.7      11.0      6.7      2.7      1.237
9 .5071 .1866      .0854      .0518      .0314      .0191      .0116      .00799
9 .00738 .00651      .00575      .00477      .00372      .002896      .002367      .002088
9 .001
9*      A1 1.0      6.283186 12.56637
9*      V1 1.0      2.0      3.0
9*      W0 0.0      .1666667 .3333333 .3333333 .1666667
9*      M7 -1.0      -.881917 -.333333 .333333 .881917
9*      I3      77%      799
I*      4803

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IV-3

1 MILLS 24 GROUP - C/U=301 - TEMP=0.025 EV
0.000000(+0)

THE FOLLOWING NUCLIDES WERE REQUESTED FROM TAPE

00000 G= 30 L= 14 NUCLIDE NO.=01407 C .025 C. MILLS

00000 G= 30 L= 14 NUCLIDE NO.=01437 U235 .025 C. MILLS

IV-4

MILLS 24 GROUP - C/U=301 - TEMP=0.025 EV

A	ID	TH	SCT	SN	GE	BL	BR
I	RZ	IM	INP	EVT	EV	EVM	EPS
G	GM	HT	HS	HM	HGT	LGTH	BUCNO
M	MX	MR	MT	MM	DFM	FIT	
S	NZ	PVT	PV	QM	QSM	QSP	
C	IIM	GS	DML	LLA	HLA	EQL	NPM
D	NDP	BTZ	ACZ	ACR	OIM	MB	
1	301025	0	1	4	3	1	0
1	1	22	0	1	0	0	9.999999-05
1	24	3	8	12	0	0	0
1	3	0	2	3	0	0	
1	1.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	
1	20	0	5.000000-01	9.999999-03	4.999999-02	4.999999-03	1.000000+00
1	1	2	0	0	100	1	

MO	RO	FO	VO	AO	D2	R2	M1	
1	2	3	4	5	6	7	8	
1	1	0	1.000000+00	1.130973+02	0.000000+00	0.000000+00	0.000000+00	3
2	1	3.000000+00	1.000000+00	7.916813+02	1.130973+02	0.000000+00		
3	1	6.000000+00	1.000000+00	2.148849+03	4.523893+02	0.000000+00		
4	1	9.000000+00	1.000000+00	4.184601+03	1.017875+03	0.000000+00		
5	1	1.200000+01	1.000000+00	6.898936+03	1.809557+03	0.000000+00		
6	1	1.500000+01	1.000000+00	1.029185+04	2.827433+03	0.000000+00		
7	1	1.800000+01	1.000000+00	1.436336+04	4.071503+03	0.000000+00		
8	1	2.100000+01	1.000000+00	1.911344+04	5.541769+03	0.000000+00		
9	1	2.400000+01	1.000000+00	2.454212+04	7.238229+03	0.000000+00		
10	1	2.700000+01	1.000000+00	3.064937+04	9.160883+03	0.000000+00		
11	1	3.000000+01	1.000000+00	3.743521+04	1.130973+04	0.000000+00		
12	1	3.300000+01	1.000000+00	4.489963+04	1.368477+04	0.000000+00		
13	1	3.600000+01	1.000000+00	5.304264+04	1.628601+04	0.000000+00		
14	1	3.900000+01	1.000000+00	6.186423+04	1.911344+04	0.000000+00		
15	1	4.200000+01	1.000000+00	7.136442+04	2.216707+04	0.000000+00		
16	1	4.500000+01	1.000000+00	8.154317+04	2.544689+04	0.000000+00		
17	1	4.800000+01	1.000000+00	9.240051+04	2.895291+04	0.000000+00		
18	1	5.100000+01	1.000000+00	1.039364+05	3.268512+04	0.000000+00		
19	1	5.400000+01	1.000000+00	1.161509+05	3.664353+04	0.000000+00		
20	1	5.700000+01	1.000000+00	1.290440+05	4.082813+04	0.000000+00		
21	1	6.000000+01	1.000000+00	1.426157+05	4.523893+04	0.000000+00		
22	1	6.300000+01	1.000000+00	2.412327+04	4.987592+04	0.000000+00		
23		6.348000+01			5.063883+04			

IV-5

	I0 1		I1 2		I2 3		I3 4		M7 5		W0 6		V7 7		K7 8
1		3		0		0		775	-1.000000+00		0.000000+00		2.850000+01		2.040000-01
2		3		1		8.230000-02		799	-8.819169-01		1.666666-01		1.990000+01		3.440000-01
3		3		2		2.734000-04			-3.333330-01		3.333333-01		1.470000+01		1.680000-01
4									3.333330-01		3.333333-01		1.100000+01		1.800000-01
5									8.819169-01		1.666666-01		6.700000+00		9.000000-02
6													2.699999+00		1.399999-02
7													1.237000+00		0.000000+00
8													5.070999-01		0.000000+00
9													1.866000-01		0.000000+00
10													8.540000-02		0.000000+00
11													5.179999-02		0.000000+00
12													3.140000-02		0.000000+00
13													1.909999-02		0.000000+00
14													1.160000-02		0.000000+00
15													7.990000-03		0.000000+00
16													7.380000-03		0.000000+00
17													6.510000-03		0.000000+00
18													5.750000-03		0.000000+00
19													4.770000-03		0.000000+00
20													3.720000-03		0.000000+00
21													2.896000-03		0.000000+00
22													2.366999-03		0.000000+00
23													2.088000-03		0.000000+00
24													9.999999-04		0.000000+00

	C0 1		2		3		4		5		6		7		8
1	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
2	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
3	1.229999+00		1.420000+00		2.260000+00		2.930000+00		3.590000+00		4.250000+00		4.439999+00		4.340000+00
4	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
5	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
6	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
7	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
8	7.149999-01		1.106000+00		1.404000+00		2.326000+00		3.157000+00		3.849000+00		4.010000+00		3.969999+00
9	0.000000+00		5.149999-01		3.140000-01		8.559999-01		6.039999-01		4.330000-01		4.010000-01		4.300000-01
10	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
11	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
12	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
	9		10		11		12		13		14		15		16
1	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		5.997419-04		8.998215-04		9.998083-04
2	0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00		0.000000+00
3	4.340000+00		4.340000+00		4.340000+00		4.340000+00		4.340000+00		4.946957+00		4.580958+00		4.564300+00

IV-6

4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	1.465420-06	1.218629-05	9.944393-06
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	8.278492-05	4.110759-04	1.377154-03
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	4.286102-03	1.107241-02	2.586599-02
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	2.273147-01	2.952700-01	3.786342-01
8	3.969999+00	3.610000+00	3.610000+00	3.610000+00	3.610000+00	4.485337+00	2.202630+00	2.161480+00
9	3.700000-01	3.700000-01	7.299999-01	7.299999-01	7.299999-01	7.299999-01	3.721220-01	1.615928+00
10	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	7.846152-02
11	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
	17	18	19	20	21	22	23	24
1	1.197671-03	1.299873-03	1.599878-03	1.999884-03	2.599954-03	3.199994-03	3.599912-03	4.299998-03
2	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
3	4.543592+00	4.542161+00	4.595129+00	4.613531+00	4.650862+00	4.699572+00	4.744007+00	5.687957+00
4	2.259983-05	5.985687-05	5.963773-03	4.239301-02	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	8.892049-04	6.703161-04	1.479531-02	1.592725-01	3.271558-01	0.000000+00	0.000000+00	0.000000+00
6	4.776266-02	1.452550-02	8.164130-02	3.064603-01	9.230928-01	4.953558-01	0.000000+00	0.000000+00
7	5.514148-01	3.990230-01	7.258768-01	1.032952+00	1.483776+00	1.137532+00	4.765391-01	0.000000+00
8	2.184759+00	1.306203+00	2.912337+00	2.639697+00	2.324035+00	1.375200+00	8.750885-01	4.342214+00
9	1.579382+00	1.313411+00	1.862230+00	1.076044+00	1.005313+00	6.898862-01	5.962645-01	1.639458+00
10	4.603294-01	4.084762-01	6.223615-01	1.836127-01	1.403261-01	1.462358-01	2.250924-01	9.198160-01
11	9.782431-03	6.434574-02	1.121436-01	3.106843-02	1.055556-02	1.226915-02	3.950694-02	2.939604-01
12	0.000000+00	6.547048-04	9.508958-03	2.261838-03	1.001837-03	5.647656-04	4.371866-03	3.947673-02
	1	2	3	4	5	6	7	8
1	1.260000+00	1.300000+00	1.330000+00	1.350000+00	1.660000+00	3.150000+00	5.500000+00	1.110000+01
2	3.557000+00	3.196000+00	3.087000+00	2.988000+00	3.518000+00	6.125000+00	1.029000+01	1.936000+01
3	4.250000+00	4.530000+00	4.650000+00	5.200000+00	7.899999+00	1.240000+01	1.510000+01	2.110000+01
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
8	1.200000+00	1.770000+00	2.300000+00	3.420000+00	6.160000+00	9.200000+00	9.550000+00	9.950000+00
9	0.000000+00	2.700000-01	2.400000-01	5.499999-01	3.500000-01	8.000000-02	4.999999-02	4.999999-02
10	0.000000+00	0.000000+00	3.700000-01	6.699999-01	4.000000-01	8.000000-02	0.000000+00	0.000000+00
11	0.000000+00	0.000000+00	0.000000+00	6.499999-01	4.500000-01	7.000000-02	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	5.000000-01	7.000000-02	0.000000+00	0.000000+00
	9	10	11	12	13	14	15	16
1	2.550000+01	8.386000+01	9.067000+01	4.380000+01	3.202000+01	7.274000+01	1.466000+02	2.263000+02
2	4.287000+01	1.312199+02	1.161500+02	5.574000+01	5.946000+01	1.501800+02	3.030000+02	4.400000+02
3	3.550000+01	9.385999+01	1.006700+02	5.380000+01	4.201999+01	8.274000+01	1.566000+02	2.363000+02
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
8	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00
9	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02
10	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
11	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00

IV-7

	17	18	19	20	21	22	23	24
1	2.188000+02	2.259000+02	2.594000+02	3.678000+02	5.126000+02	6.200000+02	7.290000+02	1.087000+03
2	4.290000+02	4.530000+02	5.390000+02	7.640000+02	1.054000+03	1.275000+03	1.498000+03	2.234000+03
3	2.288000+02	2.359000+02	2.694000+02	3.778000+02	5.226000+02	6.300000+02	7.390000+02	1.097000+03
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
8	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	9.950000+00	1.000000+01
9	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02	4.999999-02
10	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
11	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
	1	2	3	4	5	6	7	8
1	3.444839-04	3.554200-04	3.636220-04	3.690900-04	4.538440-04	8.612100-04	1.503699-03	3.034740-03
2	9.724838-04	8.737863-04	8.439857-04	8.169192-04	9.618211-04	1.674575-03	2.813286-03	5.293024-03
3	1.023909-01	1.180962-01	1.872693-01	2.425606-01	2.976168-01	3.531651-01	3.695403-01	3.629507-01
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
8	5.917258-02	9.150772-02	1.161780-01	1.923648-01	2.615052-01	3.192879-01	3.326339-01	3.294513-01
9	0.000000+00	4.245831-02	2.590781-02	7.059917-02	4.980488-02	3.565777-02	3.301596-02	3.540267-02
10	0.000000+00	0.000000+00	1.011579-04	1.831780-04	1.093600-04	2.187200-05	0.000000+00	0.000000+00
11	0.000000+00	0.000000+00	0.000000+00	1.777100-04	1.230299-04	1.913800-05	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	1.367000-04	1.913800-05	0.000000+00	0.000000+00
	9	10	11	12	13	14	15	16
1	6.971700-03	2.292732-02	2.478917-02	1.197492-02	8.754268-03	1.993647-02	4.015449-02	6.195270-02
2	1.172065-02	3.587554-02	3.175541-02	1.523931-02	1.625636-02	4.105921-02	8.284020-02	1.202960-01
3	3.668377-01	3.828433-01	3.847051-01	3.718909-01	3.686702-01	4.297557-01	4.198272-01	4.402463-01
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	1.206040-07	1.002932-06	8.184235-07
5	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	6.813199-06	3.383155-05	1.133398-04
6	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	3.527462-04	9.112595-04	2.128771-03
7	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	1.870800-02	2.430072-02	3.116159-02
8	3.294513-01	2.998233-01	2.998233-01	2.998233-01	2.998233-01	3.718635-01	1.839968-01	1.806101-01
9	3.046466-02	3.046466-02	6.009266-02	6.009266-02	6.009266-02	6.009266-02	3.063931-02	1.330046-01
10	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	6.457383-03
11	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
12	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
	17	18	19	20	21	22	23	24
1	5.991867-02	6.186804-02	7.105163-02	1.007211-01	1.403588-01	1.697713-01	1.996048-01	2.975397-01
2	1.172886-01	1.238502-01	1.473626-01	2.088776-01	2.881635-01	3.485850-01	4.095531-01	6.107755-01
3	4.364915-01	4.383149-01	4.518330-01	4.829841-01	5.256447-01	5.590168-01	5.924744-01	7.680387-01
4	1.859966-06	4.926221-06	4.908185-04	3.488945-03	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	7.318156-05	5.521639-05	1.217654-03	1.310812-02	2.692492-02	0.000000+00	0.000000+00	0.000000+00
6	3.930867-03	1.195448-03	6.719079-03	2.522168-02	7.597054-02	4.076778-02	0.000000+00	0.000000+00
7	4.538144-02	3.284001-02	5.973766-02	8.501198-02	1.221148-01	9.361890-02	3.921917-02	0.000000+00
8	1.825260-01	1.596009-01	2.424057-01	2.199673-01	1.939884-01	1.158992-01	7.474012-02	3.600982-01

IV-8

9	1.299968-01	1.081074-01	1.532752-01	8.857211-02	8.275098-02	5.679131-02	4.908624-02	1.349410-01
10	3.788511-02	3.361759-02	5.122035-02	1.511133-02	1.154884-02	1.203521-02	1.852510-02	7.570086-02
11	8.050941-04	5.295654-03	9.229418-03	2.556932-03	8.687227-04	1.009751-03	3.251421-03	2.419294-02
12	0.000000+00	5.389866-05	7.825771-04	1.861492-04	8.245125-05	4.648021-05	3.598045-04	3.248935-03

	D0 1	D3 2	D4 3	Q5 4	Q6 5	B2 6
1	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
2	0.000000+00			0.000000+00	0.000000+00	0.000000+00
3				0.000000+00	0.000000+00	0.000000+00
4				0.000000+00	0.000000+00	0.000000+00
5				0.000000+00	0.000000+00	0.000000+00
6				0.000000+00	0.000000+00	0.000000+00
7				0.000000+00	0.000000+00	0.000000+00
8				0.000000+00	0.000000+00	0.000000+00
9				0.000000+00	0.000000+00	0.000000+00
10				0.000000+00	0.000000+00	0.000000+00
11				0.000000+00	0.000000+00	0.000000+00
12				0.000000+00	0.000000+00	0.000000+00
13				0.000000+00	0.000000+00	0.000000+00
14				0.000000+00	0.000000+00	0.000000+00
15				0.000000+00	0.000000+00	0.000000+00
16				0.000000+00	0.000000+00	0.000000+00
17				0.000000+00	0.000000+00	0.000000+00
18				0.000000+00	0.000000+00	0.000000+00
19				0.000000+00	0.000000+00	0.000000+00
20				0.000000+00	0.000000+00	0.000000+00
21				0.000000+00	0.000000+00	0.000000+00
22				0.000000+00	0.000000+00	0.000000+00
23				0.000000+00	0.000000+00	0.000000+00
24				0.000000+00	0.000000+00	0.000000+00

MILLS 24 GROUP - C/U=301 - TEMP=0.025 EV

	MONITOR ID	ICT	LCT	NB	EPS	EQ	EV	LA
1	301025	0	0	0	9.999999-05	0.000000+00	0.000000+00	0.000000+00
1	301025	1	224	9.999997-01	9.999999-05	0.000000+00	6.879477-01	6.879477-01
1	301025	2	489	9.999996-01	9.999999-05	0.000000+00	9.031764-01	1.312856+00
1	301025	3	731	9.999997-01	9.999999-05	0.000000+00	9.566628-01	1.059220+00
1	301025	4	949	9.999997-01	9.999999-05	0.000000+00	9.782390-01	1.022553+00
1	301025	5	1143	9.999996-01	9.999999-05	0.000000+00	9.877565-01	1.009729+00
1	301025	6	1290	9.999996-01	9.999999-05	0.000000+00	9.919191-01	1.004214+00
1	301025	7	1394	9.999997-01	9.999999-05	0.000000+00	9.937314-01	1.001827+00
1	301025	8	1474	9.999996-01	9.999999-05	0.000000+00	9.946179-01	1.000892+00
1	301025	9	1542	9.999996-01	9.999999-05	0.000000+00	9.951605-01	1.000545+00

IV-9

1	301025	10	1604	9.999997-01	9.999999-05	0.000000+00	9.955491-01	1.000390+00
1	301025	11	1659	9.999997-01	9.999999-05	0.000000+00	9.958426-01	1.000294+00
1	301025	12	1712	9.999996-01	9.999999-05	0.000000+00	9.960866-01	1.000245+00
1	301025	13	1760	9.999996-01	9.999999-05	0.000000+00	9.962858-01	1.000200+00
1	301025	14	1807	9.999997-01	9.999999-05	0.000000+00	9.964639-01	1.000178+00
1	301025	15	1850	9.999997-01	9.999999-05	0.000000+00	9.966118-01	1.000148+00
1	301025	16	1894	9.999997-01	9.999999-05	0.000000+00	9.967560-01	1.000144+00
1	301025	17	1936	9.999997-01	9.999999-05	0.000000+00	9.968800-01	1.000124+00
1	301025	18	1976	9.999997-01	9.999999-05	0.000000+00	9.969976-01	1.000117+00
1	301025	19	2015	9.999997-01	9.999999-05	0.000000+00	9.971075-01	1.000110+00
1	301025	20	2053	9.999996-01	9.999999-05	0.000000+00	9.972052-01	1.000098+00
1	301025	21	2091	9.999997-01	9.999999-05	0.000000+00	9.972977-01	1.000092+00
1	301025	22	2128	9.999997-01	9.999999-05	0.000000+00	9.973854-01	1.000087+00
1	301025	23	2165	9.999997-01	9.999999-05	0.000000+00	9.974680-01	1.000082+00
1	301025	24	2202	9.999996-01	9.999999-05	0.000000+00	9.975459-01	1.000078+00
1	301025	25	2239	9.999997-01	9.999999-05	0.000000+00	9.976197-01	1.000074+00
1	301025	26	2276	9.999997-01	9.999999-05	0.000000+00	9.976894-01	1.000069+00
1	301025	27	2313	9.999996-01	9.999999-05	0.000000+00	9.977554-01	1.000066+00
1	301025	28	2350	9.999996-01	9.999999-05	0.000000+00	9.978177-01	1.000062+00
1	301025	29	2387	9.999997-01	9.999999-05	0.000000+00	9.978768-01	1.000059+00

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	1.102504-05	1.103484-05	1.106843-05	1.106843-05	1.103484-05
2	1.084307-05	1.087420-05	1.099460-05	1.119085-05	1.125020-05
3	1.053228-05	1.058806-05	1.081277-05	1.113779-05	1.137748-05
4	1.014808-05	1.022721-05	1.055579-05	1.105053-05	1.139038-05
5	9.701242-06	9.801678-06	1.022927-05	1.087363-05	1.133570-05
6	9.198974-06	9.318398-06	9.838327-06	1.062723-05	1.120357-05
7	8.647695-06	8.783557-06	9.387398-06	1.031029-05	1.099839-05
8	8.054180-06	8.203739-06	8.881721-06	9.926704-06	1.072239-05
9	7.425593-06	7.585935-06	8.327109-06	9.480822-06	1.037884-05
10	6.769526-06	6.937588-06	7.729982-06	8.977758-06	9.971691-06
11	6.093973-06	6.266556-06	7.097300-06	8.423336-06	9.505624-06
12	5.407292-06	5.581075-06	6.436504-06	7.823990-06	8.985986-06
13	4.718175-06	4.889726-06	5.755447-06	7.186692-06	8.418730-06
14	4.035625-06	4.201418-06	5.062343-06	6.518862-06	7.810355-06
15	3.368952-06	3.525381-06	4.365719-06	5.828292-06	7.167841-06
16	2.727788-06	2.871199-06	3.674379-06	5.123070-06	6.498588-06
17	2.122132-06	2.248875-06	2.997354-06	4.411488-06	5.810353-06
18	1.562439-06	1.668967-06	2.343795-06	3.701912-06	5.111200-06
19	1.059769-06	1.142814-06	1.722433-06	3.002518-06	4.409485-06
20	6.262320-07	6.831523-07	1.140435-06	2.320394-06	3.713742-06
21	2.752381-07	3.046052-07	5.953294-07	1.659760-06	3.033445-06
22	2.819254-08	3.183809-08	7.957019-08	1.010458-06	2.373995-06
23	0.000000+00	0.000000+00	0.000000+00	9.062017-07	2.270248-06

IV-10

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	4.295253-05	4.298543-05	4.309721-05	4.309721-05	4.298543-05
2	4.232233-05	4.242805-05	4.283825-05	4.350087-05	4.370142-05
3	4.121266-05	4.140276-05	4.217090-05	4.327859-05	4.408843-05
4	3.981693-05	4.008748-05	4.121394-05	4.289755-05	4.404816-05
5	3.817267-05	3.851718-05	3.998621-05	4.217894-05	4.374152-05
6	3.630666-05	3.671772-05	3.850750-05	4.119122-05	4.313764-05
7	3.424272-05	3.471208-05	3.679474-05	3.993319-05	4.225386-05
8	3.200633-05	3.252508-05	3.486807-05	3.842062-05	4.110023-05
9	2.962463-05	3.018326-05	3.275003-05	3.667112-05	3.969053-05
10	2.712648-05	2.771501-05	3.046558-05	3.470531-05	3.804135-05
11	2.454225-05	2.515029-05	2.804183-05	3.254659-05	3.617204-05
12	2.190365-05	2.252043-05	2.550778-05	3.022075-05	3.410456-05
13	1.924340-05	1.985785-05	2.289395-05	2.775572-05	3.186320-05
14	1.659508-05	1.719581-05	2.023211-05	2.518121-05	2.947442-05
15	1.399284-05	1.456815-05	1.755495-05	2.252840-05	2.696649-05
16	1.147127-05	1.200905-05	1.489566-05	1.982961-05	2.436926-05
17	9.065349-06	9.552842-06	1.278742-05	1.711783-05	2.171386-05
18	6.810383-06	7.234020-06	9.762033-06	1.442597-05	1.903243-05
19	4.742784-06	5.087773-06	7.345883-06	1.178486-05	1.635775-05
20	2.902465-06	3.152697-06	5.047901-06	9.216802-06	1.372265-05
21	1.339862-06	1.479002-06	2.812526-06	6.716519-06	1.115999-05
22	1.486568-07	1.678005-07	4.168097-07	4.181635-06	8.691626-06
23	0.000000+00	0.000000+00	0.000000+00	3.762804-06	8.305399-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	2.097821-05	2.098813-05	2.102126-05	2.102126-05	2.098813-05
2	2.076222-05	2.079509-05	2.092428-05	2.112888-05	2.119325-05
3	2.034227-05	2.040200-05	2.064674-05	2.099449-05	2.124585-05
4	1.978175-05	1.986764-05	2.022972-05	2.075776-05	2.111359-05
5	1.909370-05	1.920413-05	1.967936-05	2.036630-05	2.084931-05
6	1.828905-05	1.842212-05	1.900457-05	1.984509-05	2.044487-05
7	1.737771-05	1.753122-05	1.821294-05	1.919555-05	1.990909-05
8	1.637072-05	1.654224-05	1.731379-05	1.842617-05	1.924797-05
9	1.528008-05	1.546696-05	1.631761-05	1.754599-05	1.846936-05
10	1.411869-05	1.431813-05	1.523609-05	1.656545-05	1.758238-05
11	1.290028-05	1.310933-05	1.408194-05	1.549620-05	1.659739-05
12	1.163924-05	1.185486-05	1.286876-05	1.435093-05	1.552590-05
13	1.035047-05	1.056953-05	1.161088-05	1.314328-05	1.438046-05
14	9.049178-06	9.268511-06	1.032316-05	1.188761-05	1.317451-05
15	7.750691-06	7.967037-06	9.020810-06	1.059888-05	1.192223-05

IV-11

16	6.470274-06	6.680217-06	7.719095-06	9.292464-06	1.063833-05
17	5.222931-06	5.422663-06	6.433034-06	7.983907-06	9.337920-06
18	4.023322-06	4.208121-06	5.176831-06	6.688637-06	8.036199-06
19	2.886033-06	3.049195-06	3.962590-06	5.421299-06	6.748138-06
20	1.827256-06	1.958156-06	2.796781-06	4.193688-06	5.487721-06
21	8.718893-07	9.533749-07	1.651788-06	3.004162-06	4.266749-06
22	9.913803-08	1.116777-07	2.702947-07	1.758829-06	3.086105-06
23	0.000000+00	0.000000+00	0.000000+00	1.544352-06	2.900050-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	3.723534-05	3.724871-05	3.729329-05	3.729329-05	3.724871-05
2	3.691582-05	3.696073-05	3.713891-05	3.741956-05	3.751186-05
3	3.625913-05	3.634122-05	3.668095-05	3.715809-05	3.750441-05
4	3.535281-05	3.547142-05	3.597607-05	3.670192-05	3.718842-05
5	3.421630-05	3.436945-05	3.503349-05	3.597596-05	3.663831-05
6	3.286729-05	3.305259-05	3.386831-05	3.502164-05	3.584301-05
7	3.132217-05	3.153681-05	3.249356-05	3.384146-05	3.481866-05
8	2.959956-05	2.984039-05	3.092554-05	3.245154-05	3.357630-05
9	2.771975-05	2.798332-05	2.918250-05	3.086803-05	3.213072-05
10	2.570474-05	2.598737-05	2.728477-05	2.910969-05	3.049871-05
11	2.357797-05	2.387578-05	2.525443-05	2.719719-05	2.869922-05
12	2.136400-05	2.167302-05	2.311507-05	2.515298-05	2.675314-05
13	1.908823-05	1.940440-05	2.089143-05	2.300095-05	2.468298-05
14	1.677642-05	1.709569-05	1.860907-05	2.076613-05	2.251266-05
15	1.445433-05	1.477265-05	1.629389-05	1.847431-05	2.026711-05
16	1.214722-05	1.246051-05	1.397168-05	1.615165-05	1.797191-05
17	9.879426-06	1.018325-05	1.166738-05	1.382416-05	1.565284-05
18	7.674161-06	7.962943-06	9.404243-06	1.151713-05	1.333531-05
19	5.554129-06	5.818912-06	7.202184-06	9.254142-06	1.104359-05
20	3.544661-06	3.768065-06	5.074968-06	7.055323-06	8.799589-06
21	1.688261-06	1.834463-06	3.001957-06	4.925771-06	6.619869-06
22	1.863037-07	2.095385-07	4.972825-07	2.678692-06	4.483776-06
23	0.000000+00	0.000000+00	0.000000+00	2.286662-06	4.142066-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	5.465671-05	5.467238-05	5.472437-05	5.472437-05	5.467238-05
2	5.424832-05	5.430178-05	5.451571-05	5.485010-05	5.496414-05
3	5.336768-05	5.346584-05	5.387563-05	5.444588-05	5.486100-05
4	5.212088-05	5.226321-05	5.287359-05	5.374141-05	5.432245-05
5	5.053297-05	5.071725-05	5.152156-05	5.264677-05	5.344004-05
6	4.862842-05	4.885199-05	4.984129-05	5.121840-05	5.220132-05
7	4.643013-05	4.668977-05	4.785144-05	4.946048-05	5.063029-05

IV-12

8	4.396451-05	4.425660-05	4.557577-05	4.739759-05	4.874352-05
9	4.126043-05	4.158096-05	4.304070-05	4.505339-05	4.656350-05
10	3.834926-05	3.869397-05	4.027563-05	4.245555-05	4.411542-05
11	3.526445-05	3.562884-05	3.731247-05	3.963435-05	4.142756-05
12	3.204107-05	3.242052-05	3.418518-05	3.662248-05	3.853084-05
13	2.871525-05	2.910507-05	3.092925-05	3.345455-05	3.545837-05
14	2.532352-05	2.571907-05	2.758114-05	3.016655-05	3.224502-05
15	2.190211-05	2.229885-05	2.417753-05	2.679523-05	2.892679-05
16	1.848620-05	1.887972-05	2.075460-05	2.337745-05	2.554017-05
17	1.510920-05	1.549502-05	1.734700-05	1.994932-05	2.212141-05
18	1.180241-05	1.217513-05	1.398675-05	1.654529-05	1.870558-05
19	8.595978-06	8.946691-06	1.070164-05	1.319705-05	1.532556-05
20	5.524269-06	5.832922-06	7.511193-06	9.931562-06	1.201044-05
21	2.637426-06	2.849982-06	4.445928-06	6.777040-06	8.784617-06
22	2.864219-07	3.216513-07	7.492366-07	3.459620-06	5.605319-06
23	0.000000+00	0.000000+00	0.000000+00	2.878356-06	5.093153-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	5.529745-05	5.531052-05	5.535366-05	5.535366-05	5.531052-05
2	5.492744-05	5.497276-05	5.515553-05	5.543906-05	5.553907-05
3	5.409580-05	5.417934-05	5.453078-05	5.501583-05	5.537011-05
4	5.289403-05	5.301548-05	5.353995-05	5.427828-05	5.477311-05
5	5.134512-05	5.150270-05	5.219439-05	5.315047-05	5.382800-05
6	4.947277-05	4.966434-05	5.051581-05	5.168625-05	5.252506-05
7	4.729927-05	4.752216-05	4.852273-05	4.989005-05	5.088881-05
8	4.485065-05	4.510186-05	4.623902-05	4.778748-05	4.893619-05
9	4.215533-05	4.243155-05	4.369104-05	4.540218-05	4.669048-05
10	3.924430-05	3.954198-05	4.090815-05	4.276221-05	4.417743-05
11	3.615062-05	3.646602-05	3.792211-05	3.989797-05	4.142587-05
12	3.290893-05	3.323819-05	3.476666-05	3.684219-05	3.846708-05
13	2.955488-05	2.989409-05	3.147698-05	3.362934-05	3.533441-05
14	2.612440-05	2.646972-05	2.808899-05	3.029510-05	3.206271-05
15	2.265308-05	2.300076-05	2.463874-05	2.687564-05	2.868770-05
16	1.917532-05	1.952178-05	2.116153-05	2.340696-05	2.524527-05
17	1.572366-05	1.606543-05	1.769117-05	1.992404-05	2.177073-05
18	1.232841-05	1.266173-05	1.425881-05	1.645998-05	1.829797-05
19	9.018178-06	9.337077-06	1.089323-05	1.304556-05	1.485860-05
20	5.827672-06	6.118173-06	7.607983-06	9.704534-06	1.148016-05
21	2.790431-06	3.000407-06	4.493392-06	6.486314-06	8.191400-06
22	2.992311-07	3.355318-07	7.676370-07	3.124896-06	4.943225-06
23	0.000000+00	0.000000+00	0.000000+00	2.535059-06	4.417666-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

IV-13

	1	2	3	4	5
1	4.690736-05	4.671771-05	4.695272-05	4.695272-05	4.691791-05
2	4.660185-05	4.663874-05	4.678683-05	4.701662-05	4.709857-05
3	4.590825-05	4.597594-05	4.626129-05	4.665415-05	4.694172-05
4	4.490080-05	4.499728-05	4.542531-05	4.602353-05	4.642460-05
5	4.359847-05	4.372633-05	4.428831-05	4.506253-05	4.561227-05
6	4.202109-05	4.217660-05	4.286857-05	4.381662-05	4.449694-05
7	4.018723-05	4.036831-05	4.118167-05	4.228927-05	4.309942-05
8	3.811895-05	3.832302-05	3.924773-05	4.050223-05	4.143402-05
9	3.583960-05	3.606426-05	3.708888-05	3.847551-05	3.952052-05
10	3.337548-05	3.361779-05	3.472978-05	3.623272-05	3.738067-05
11	3.075410-05	3.101107-05	3.219702-05	3.379938-05	3.503876-05
12	2.800441-05	2.827296-05	2.951486-05	3.120295-05	3.252114-05
13	2.515617-05	2.543318-05	2.672466-05	2.847228-05	2.985578-05
14	2.223943-05	2.252179-05	2.384441-05	2.563714-05	2.707184-05
15	1.928404-05	1.956870-05	2.090820-05	2.272773-05	2.419917-05
16	1.631917-05	1.660316-05	1.774567-05	1.977409-05	2.126775-05
17	1.337273-05	1.365334-05	1.498552-05	1.680562-05	1.830719-05
18	1.047276-05	1.074619-05	1.205492-05	1.385052-05	1.534619-05
19	7.645724-06	7.907180-06	9.180664-06	1.093606-05	1.241224-05
20	4.727186-06	5.165844-06	6.377147-06	8.084260-06	9.530440-06
21	2.348699-06	2.522126-06	3.738459-06	5.346413-06	6.730695-06
22	2.491187-07	2.792186-07	6.355215-07	2.516451-06	3.979251-06
23	0.000000+00	0.000000+00	0.000000+00	2.023227-06	3.535628-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	4.670359-05	4.671433-05	4.674981-05	4.674981-05	4.671433-05
2	4.639565-05	4.643289-05	4.658327-05	4.681667-05	4.689966-05
3	4.570001-05	4.576868-05	4.605790-05	4.645641-05	4.674818-05
4	4.463178-05	4.479167-05	4.522342-05	4.583032-05	4.623705-05
5	4.338992-05	4.351958-05	4.408912-05	4.487472-05	4.543205-05
6	4.181413-05	4.197184-05	4.267317-05	4.363516-05	4.432499-05
7	3.998286-05	4.016647-05	4.099095-05	4.211498-05	4.293654-05
8	3.771770-05	3.812480-05	3.906235-05	4.033575-05	4.128078-05
9	3.564218-05	3.587011-05	3.690924-05	3.831710-05	3.937720-05
10	3.318191-05	3.342781-05	3.455592-05	3.608235-05	3.724725-05
11	3.056416-05	3.082503-05	3.202866-05	3.365667-05	3.491486-05
12	2.781755-05	2.809027-05	2.935530-05	3.106711-05	3.240596-05
13	2.497158-05	2.525297-05	2.656487-05	2.834215-05	2.974812-05
14	2.205624-05	2.234311-05	2.368712-05	2.551122-05	2.697014-05
15	1.910167-05	1.939080-05	2.075215-05	2.260434-05	2.410162-05
16	1.613789-05	1.642606-05	1.778999-05	1.965167-05	2.117253-05
17	1.319476-05	1.347863-05	1.483044-05	1.668325-05	1.821288-05
18	1.030241-05	1.057815-05	1.190274-05	1.372867-05	1.525242-05
19	7.492386-06	7.754266-06	9.036726-06	1.081764-05	1.232062-05

IV-14

20	4.805069-06	5.041555-06	6.253514-06	7.976651-06	9.445993-06
21	2.278788-06	2.448449-06	3.646354-06	5.260568-06	6.662839-06
22	2.406437-07	2.697669-07	6.152772-07	2.476963-06	3.946009-06
23	0.000000+00	0.000000+00	0.000000+00	1.995150-06	3.510392-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	3.604617-05	3.605436-05	3.608140-05	3.608140-05	3.605436-05
2	3.580999-05	3.583843-05	3.595333-05	3.613153-05	3.619502-05
3	3.527493-05	3.532739-05	3.554844-05	3.585287-05	3.607576-05
4	3.449843-05	3.457476-05	3.490480-05	3.536840-05	3.567914-05
5	3.349500-05	3.359410-05	3.402954-05	3.462966-05	3.505553-05
6	3.227972-05	3.240030-05	3.293659-05	3.367156-05	3.419869-05
7	3.086673-05	3.100715-05	3.163776-05	3.249664-05	3.312452-05
8	2.927258-05	2.943101-05	3.014829-05	3.112149-05	3.184381-05
9	2.751527-05	2.768970-05	2.848492-05	2.956115-05	3.037155-05
10	2.561446-05	2.580272-05	2.666631-05	2.783350-05	2.872417-05
11	2.359112-05	2.379091-05	2.471262-05	2.595786-05	2.692006-05
12	2.146731-05	2.167624-05	2.264527-05	2.395501-05	2.497913-05
13	1.926589-05	1.948150-05	2.048667-05	2.184689-05	2.292262-05
14	1.701026-05	1.723007-05	1.825992-05	1.965627-05	2.077277-05
15	1.472419-05	1.494565-05	1.598859-05	1.740651-05	1.855255-05
16	1.243160-05	1.265215-05	1.369646-05	1.512133-05	1.628544-05
17	1.015657-05	1.037355-05	1.140743-05	1.282461-05	1.399516-05
18	7.923580-06	8.134002-06	9.145307-06	1.054025-05	1.170556-05
19	5.757958-06	5.957529-06	6.934677-06	8.292559-06	9.440596-06
20	3.691212-06	3.871500-06	4.792418-06	6.103279-06	7.223586-06
21	1.750737-06	1.880466-06	2.793083-06	4.016382-06	5.082296-06
22	1.849209-07	2.072787-07	4.721727-07	1.884207-06	2.997489-06
23	0.000000+00	0.000000+00	0.000000+00	1.515473-06	2.663631-06

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	1.292509-05	1.292789-05	1.293709-05	1.293709-05	1.292789-05
2	1.284262-05	1.285238-05	1.289190-05	1.295301-05	1.297495-05
3	1.265370-05	1.267172-05	1.274782-05	1.285242-05	1.292902-05
4	1.237816-05	1.240440-05	1.251807-05	1.267732-05	1.278415-05
5	1.202110-05	1.205519-05	1.220518-05	1.241130-05	1.255780-05
6	1.158787-05	1.162937-05	1.181414-05	1.206660-05	1.224791-05
7	1.108350-05	1.113185-05	1.134916-05	1.164418-05	1.186018-05
8	1.051388-05	1.056845-05	1.081567-05	1.115000-05	1.139848-05
9	9.885420-06	9.945534-06	1.021968-05	1.058944-05	1.086820-05
10	9.205143-06	9.270050-06	9.567844-06	9.968917-06	1.027526-05
11	8.480545-06	8.549457-06	8.867369-06	9.295329-06	9.626241-06

IV-15

12	7.719530-06	7.791625-06	8.125938-06	8.576136-06	8.928301-06
13	6.930310-06	7.004738-06	7.351591-06	7.819203-06	8.189063-06
14	6.121317-06	6.197215-06	6.552045-06	7.032716-06	7.416528-06
15	5.301133-06	5.377624-06	5.737603-06	6.225098-06	6.618977-06
16	4.478425-06	4.554624-06	4.915080-06	5.404921-06	5.804884-06
17	3.661900-06	3.736903-06	4.093765-06	4.580850-06	4.982849-06
18	2.860328-06	2.933167-06	3.282251-06	3.761558-06	4.161528-06
19	2.082487-06	2.151827-06	2.489611-06	2.955915-06	3.349618-06
20	1.339122-06	1.402419-06	1.720700-06	2.171384-06	2.555439-06
21	6.375664-07	6.839121-07	1.005183-06	1.424393-06	1.788933-06
22	6.748372-08	7.561094-08	1.713859-07	6.608092-07	1.041929-06
23	0.000000+00	0.000000+00	0.000000+00	5.283415-07	9.220443-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	8.946055-06	8.947982-06	8.954330-06	8.954330-06	8.947982-06
2	8.889081-06	8.895807-06	8.923042-06	8.965173-06	8.980331-06
3	8.758478-06	8.770899-06	8.823351-06	8.895414-06	8.948226-06
4	8.567889-06	8.585976-06	8.664330-06	8.774084-06	8.847697-06
5	8.320833-06	8.344331-06	8.447731-06	8.589762-06	8.690742-06
6	8.021010-06	8.049614-06	8.176998-06	8.350974-06	8.475937-06
7	7.671878-06	7.705209-06	7.855030-06	8.058350-06	8.207230-06
8	7.277510-06	7.315139-06	7.485601-06	7.716026-06	7.887293-06
9	6.842343-06	6.883795-06	7.072839-06	7.327707-06	7.519858-06
10	6.371226-06	6.415988-06	6.621355-06	6.897825-06	7.109002-06
11	5.869350-06	5.916878-06	6.136137-06	6.431164-06	6.659289-06
12	5.342193-06	5.391919-06	5.622502-06	5.932881-06	6.175670-06
13	4.795459-06	4.846794-06	5.086030-06	5.408427-06	5.663427-06
14	4.235015-06	4.287361-06	4.532502-06	4.863489-06	5.128111-06
15	3.666847-06	3.719595-06	3.967842-06	4.303925-06	4.575479-06
16	3.097003-06	3.149539-06	3.398066-06	3.735715-06	4.011437-06
17	2.531556-06	2.583255-06	2.829238-06	3.164910-06	3.441987-06
18	1.976602-06	2.026797-06	2.267362-06	2.597570-06	2.873172-06
19	1.438223-06	1.485987-06	1.718676-06	2.039855-06	2.311052-06
20	9.239466-07	9.675219-07	1.186625-06	1.496899-06	1.761375-06
21	4.390927-07	4.709522-07	6.915793-07	9.800774-07	1.231063-06
22	4.627852-08	5.184941-08	1.174585-07	4.525990-07	7.146088-07
23	0.000000+00	0.000000+00	0.000000+00	3.612273-07	6.317639-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	7.256890-06	7.258518-06	7.263894-06	7.263894-06	7.258518-06
2	7.209629-06	7.215286-06	7.238152-06	7.273611-06	7.286290-06
3	7.102264-06	7.112790-06	7.156701-06	7.217246-06	7.261612-06

IV-16

4	6.946202-06	6.961330-06	7.027100-06	7.119328-06	7.181144-06
5	6.744337-06	6.764063-06	6.850770-06	6.970145-06	7.054901-06
6	6.499685-06	6.523693-06	6.630506-06	6.776729-06	6.881630-06
7	6.215067-06	6.243035-06	6.368660-06	6.539561-06	6.664532-06
8	5.893794-06	5.925362-06	6.068289-06	6.261978-06	6.405763-06
9	5.539473-06	5.574241-06	5.732744-06	5.946987-06	6.108329-06
10	5.156052-06	5.193586-06	5.365766-06	5.598174-06	5.775528-06
11	4.747754-06	4.787598-06	4.971407-06	5.219418-06	5.411050-06
12	4.319045-06	4.360718-06	4.553994-06	4.814908-06	5.018906-06
13	3.874582-06	3.917536-06	4.118072-06	4.389075-06	4.603383-06
14	3.419166-06	3.462993-06	3.668364-06	3.946555-06	4.168997-06
15	2.957702-06	3.001834-06	3.209716-06	3.492136-06	3.720443-06
16	2.495164-06	2.539075-06	2.747063-06	3.030713-06	3.262548-06
17	2.036565-06	2.079714-06	2.285387-06	2.567252-06	2.800231-06
18	1.586993-06	1.628768-06	1.829655-06	2.106746-06	2.338460-06
19	1.151628-06	1.191197-06	1.384949-06	1.654250-06	1.882226-06
20	7.369976-07	7.727121-07	9.547569-07	1.214217-06	1.436348-06
21	3.486804-07	3.743743-07	5.544401-07	7.957180-07	1.006591-06
22	3.663277-08	4.105640-08	9.337875-08	3.700930-07	5.893744-07
23	0.000000+00	0.000000+00	0.000000+00	2.967144-07	5.226846-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	6.152833-06	6.154228-06	6.158832-06	6.158832-06	6.154228-06
2	6.112525-06	6.117368-06	6.136939-06	6.167291-06	6.178120-06
3	6.021120-06	6.030054-06	6.067709-06	6.119548-06	6.157516-06
4	5.888388-06	5.901370-06	5.957619-06	6.036575-06	6.089494-06
5	5.716787-06	5.733675-06	5.807874-06	5.910087-06	5.982626-06
6	5.508886-06	5.529436-06	5.620842-06	5.746044-06	5.835835-06
7	5.267068-06	5.291008-06	5.398516-06	5.544859-06	5.651830-06
8	4.994145-06	5.021166-06	5.143485-06	5.309349-06	5.432434-06
9	4.693180-06	4.722939-06	4.858590-06	5.042065-06	5.180191-06
10	4.367525-06	4.399651-06	4.547007-06	4.746045-06	4.897893-06
11	4.020775-06	4.054873-06	4.212178-06	4.424583-06	4.588670-06
12	3.656734-06	3.692391-06	3.857783-06	4.081235-06	4.255926-06
13	3.279377-06	3.316163-06	3.487698-06	3.719776-06	3.903306-06
14	2.892813-06	2.930289-06	3.105957-06	3.344159-06	3.534659-06
15	2.501251-06	2.538967-06	2.716711-06	2.958478-06	3.153991-06
16	2.108966-06	2.146465-06	2.324196-06	2.566928-06	2.765437-06
17	1.720289-06	1.757097-06	1.932704-06	2.173779-06	2.373217-06
18	1.339615-06	1.375207-06	1.546526-06	1.783335-06	1.981609-06
19	9.714661-07	1.005108-06	1.170084-06	1.399973-06	1.594926-06
20	6.213768-07	6.516686-07	8.064666-07	1.027616-06	1.217369-06
21	2.940407-07	3.157676-07	4.685872-07	6.739750-07	8.538953-07
22	3.096683-08	3.470922-08	7.902215-08	3.147029-07	5.015616-07
23	0.000000+00	0.000000+00	0.000000+00	2.527930-07	4.453054-07

IV-17

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	6.489817-06	6.491047-06	6.495067-06	6.495067-06	6.491047-06
2	6.451145-06	6.455002-06	6.473236-06	6.500455-06	6.510462-06
3	6.359875-06	6.367945-06	6.402189-06	6.448994-06	6.483336-06
4	6.225001-06	6.236771-06	6.287983-06	6.359231-06	6.407146-06
5	6.048942-06	6.064253-06	6.131867-06	6.224031-06	6.289871-06
6	5.834312-06	5.852973-06	5.936312-06	6.049252-06	6.130697-06
7	5.583557-06	5.605327-06	5.703392-06	5.835394-06	5.932476-06
8	5.279585-06	5.324190-06	5.435823-06	5.585482-06	5.697145-06
9	4.985574-06	5.012706-06	5.136576-06	5.302168-06	5.427439-06
10	4.645013-06	4.674346-06	4.808982-06	4.988678-06	5.126324-06
11	4.281692-06	4.312851-06	4.456663-06	4.648484-06	4.797138-06
12	3.899562-06	3.932198-06	4.083497-06	4.285351-06	4.443502-06
13	3.502851-06	3.536564-06	3.693582-06	3.903277-06	4.069300-06
14	3.095889-06	3.130281-06	3.291187-06	3.506455-06	3.678629-06
15	2.683123-06	2.717787-06	2.880716-06	3.099231-06	3.275758-06
16	2.269056-06	2.303593-06	2.466650-06	2.686059-06	2.865088-06
17	1.858174-06	1.892183-06	2.053538-06	2.271467-06	2.451102-06
18	1.454905-06	1.488007-06	1.645714-06	1.859926-06	2.038298-06
19	1.063270-06	1.094993-06	1.248130-06	1.456080-06	1.631171-06
20	6.881977-07	7.178780-07	8.614354-07	1.063072-06	1.233735-06
21	3.302421-07	3.529748-07	5.043786-07	6.899414-07	8.509825-07
22	3.499518-08	3.916189-08	8.751292-08	3.090071-07	4.773946-07
23	0.000000+00	0.000000+00	0.000000+00	2.425421-07	4.171360-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	9.102939-07	9.104716-07	9.110559-07	9.110559-07	9.104716-07
2	9.047813-07	9.054075-07	9.079533-07	9.118763-07	9.133161-07
3	8.918750-07	8.930341-07	8.979479-07	9.046661-07	9.096023-07
4	8.728519-07	8.745420-07	8.818887-07	8.921275-07	8.990032-07
5	8.480552-07	8.502533-07	8.599527-07	8.731931-07	8.826444-07
6	8.178522-07	8.205309-07	8.324857-07	8.487129-07	8.604023-07
7	7.825869-07	7.857112-07	7.997783-07	8.187442-07	8.326787-07
8	7.426677-07	7.461983-07	7.622115-07	7.837145-07	7.997432-07
9	6.985407-07	7.024336-07	7.202016-07	7.439942-07	7.619780-07
10	6.506971-07	6.549044-07	6.742161-07	7.000353-07	7.197983-07
11	5.996053-07	6.041361-07	6.247630-07	6.523244-07	6.736709-07
12	5.460072-07	5.506875-07	5.723869-07	6.013896-07	6.241034-07
13	4.903117-07	4.951457-07	5.176631-07	5.477919-07	5.716400-07
14	4.331890-07	4.381193-07	4.611917-07	4.921202-07	5.168555-07
15	3.752635-07	3.802320-07	4.035911-07	4.349850-07	4.603494-07

IV-18

16	3.171666-07	3.221157-07	3.454921-07	3.770122-07	4.027394-07
17	2.595253-07	2.643981-07	2.875260-07	3.188359-07	3.446547-07
18	2.029552-07	2.076964-07	2.303140-07	2.610843-07	2.867246-07
19	1.480173-07	1.525559-07	1.744904-07	2.043957-07	2.295761-07
20	9.543312-08	9.964608-08	1.202657-07	1.492131-07	1.737596-07
21	4.545973-08	4.862877-08	6.995591-08	9.675404-08	1.199729-07
22	4.748838-09	5.315620-09	1.191384-08	4.325883-08	6.750015-08
23	0.000000+00	0.000000+00	0.000000+00	3.395960-08	5.904527-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	6.970498-07	6.971781-07	6.975977-07	6.975977-07	6.971781-07
2	6.929532-07	6.934096-07	6.952694-07	6.981210-07	6.991752-07
3	6.832299-07	6.840755-07	6.876683-07	6.925729-07	6.961749-07
4	6.688243-07	6.700583-07	6.754326-07	6.828986-07	6.879224-07
5	6.499921-07	6.515978-07	6.586939-07	6.683506-07	6.752573-07
6	6.270123-07	6.289700-07	6.377176-07	6.495523-07	6.580949-07
7	6.001460-07	6.024302-07	6.127248-07	6.265578-07	6.367416-07
8	5.697040-07	5.722863-07	5.840067-07	5.996915-07	6.114048-07
9	5.360262-07	5.388745-07	5.518913-07	5.692379-07	5.823785-07
10	4.994872-07	5.025668-07	5.167060-07	5.355429-07	5.499813-07
11	4.604907-07	4.637643-07	4.788692-07	4.989792-07	5.145717-07
12	4.194660-07	4.228945-07	4.387877-07	4.599515-07	4.765392-07
13	3.768638-07	3.804062-07	3.969020-07	4.188894-07	4.363015-07
14	3.331509-07	3.367654-07	3.536715-07	3.762443-07	3.942997-07
15	2.888054-07	2.924497-07	3.095704-07	3.324843-07	3.509936-07
16	2.443102-07	2.479422-07	2.650793-07	2.880883-07	3.068571-07
17	2.001436-07	2.037222-07	2.206879-07	2.435426-07	2.623715-07
18	1.567735-07	1.602603-07	1.768494-07	1.993236-07	2.180185-07
19	1.146186-07	1.179649-07	1.341010-07	1.559230-07	1.742739-07
20	7.420813-08	7.735013-08	9.245637-08	1.136560-07	1.315558-07
21	3.559878-08	3.802096-08	5.402454-08	7.349602-08	9.039288-08
22	3.762700-09	4.209572-09	9.377669-09	3.257248-08	5.021412-08
23	0.000000+00	0.000000+00	0.000000+00	2.544718-08	4.373632-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	5.873652-07	5.874746-07	5.878332-07	5.878332-07	5.874746-07
2	5.838922-07	5.842802-07	5.858606-07	5.882882-07	5.891857-07
3	5.756758-07	5.763946-07	5.794472-07	5.836140-07	5.866766-07
4	5.635139-07	5.645627-07	5.691284-07	5.754756-07	5.797435-07
5	5.476232-07	5.489877-07	5.550163-07	5.632241-07	5.690932-07
6	5.282382-07	5.299018-07	5.373335-07	5.473937-07	5.546520-07
7	5.055791-07	5.075201-07	5.162662-07	5.280251-07	5.366785-07

IV-19

8	4.799077-07	4.821019-07	4.920595-07	5.053931-07	5.153465-07
9	4.515102-07	4.539304-07	4.649812-07	4.797363-07	4.909034-07
10	4.207024-07	4.233191-07	4.353322-07	4.513462-07	4.636171-07
11	3.878245-07	3.906060-07	4.034397-07	4.205364-07	4.337892-07
12	3.532386-07	3.561514-07	3.696550-07	3.876479-07	4.017478-07
13	3.173245-07	3.203341-07	3.343493-07	3.530428-07	3.678446-07
14	2.804760-07	2.835468-07	2.979104-07	3.171018-07	3.324515-07
15	2.430961-07	2.461720-07	2.607377-07	2.802193-07	2.959561-07
16	2.055911-07	2.086766-07	2.232371-07	2.427993-07	2.587577-07
17	1.683626-07	1.714029-07	1.858171-07	2.052508-07	2.212620-07
18	1.318033-07	1.347654-07	1.488659-07	1.679743-07	1.838732-07
19	9.626477-08	9.910570-08	1.128123-07	1.313807-07	1.469911-07
20	6.220639-08	6.486529-08	7.771227-08	9.573320-08	1.109627-07
21	2.973225-08	3.176535-08	4.525584-08	6.184968-08	7.623906-08
22	3.118092-09	3.488744-09	7.780519-09	2.735311-08	4.236123-08
23	0.000000+00	0.000000+00	0.000000+00	2.135556-08	3.690113-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	3.915809-07	3.916535-07	3.918915-07	3.918915-07	3.916535-07
2	3.892708-07	3.895283-07	3.905775-07	3.921892-07	3.927858-07
3	3.838015-07	3.842786-07	3.863052-07	3.890707-07	3.911041-07
4	3.757022-07	3.763984-07	3.794297-07	3.836428-07	3.864758-07
5	3.651168-07	3.660227-07	3.700254-07	3.754733-07	3.793697-07
6	3.522016-07	3.533061-07	3.582406-07	3.649184-07	3.697369-07
7	3.371027-07	3.383915-07	3.441989-07	3.520045-07	3.577495-07
8	3.199945-07	3.214515-07	3.280639-07	3.369150-07	3.435232-07
9	3.010675-07	3.026747-07	3.100133-07	3.198086-07	3.272228-07
10	2.805320-07	2.822698-07	2.902479-07	3.008795-07	3.090267-07
11	2.586147-07	2.604621-07	2.689855-07	2.803365-07	2.891358-07
12	2.355569-07	2.374917-07	2.464604-07	2.584069-07	2.677689-07
13	2.116120-07	2.136111-07	2.229202-07	2.353323-07	2.451605-07
14	1.870425-07	1.890823-07	1.986233-07	2.113664-07	2.215585-07
15	1.621169-07	1.641737-07	1.738361-07	1.867724-07	1.972216-07
16	1.371058-07	1.391559-07	1.488291-07	1.618195-07	1.724158-07
17	1.122761-07	1.142966-07	1.238740-07	1.367801-07	1.474116-07
18	8.788852-08	8.985744-08	9.922839-08	1.119203-07	1.224776-07
19	6.417687-08	6.606534-08	7.517644-08	8.751239-08	9.787940-08
20	4.145224-08	4.321955-08	5.175565-08	6.372988-08	7.384636-08
21	1.979461-08	2.114566-08	3.010055-08	4.112199-08	5.068166-08
22	2.071538-09	2.317676-09	5.166040-09	1.813028-08	2.809082-08
23	0.000000+00	0.000000+00	0.000000+00	1.413751-08	2.445165-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

IV-20

	1	2	3	4	5
1	5.308524-07	5.309472-07	5.312575-07	5.312575-07	5.309472-07
2	5.277790-07	5.281171-07	5.294965-07	5.316104-07	5.323975-07
3	5.204428-07	5.210696-07	5.237359-07	5.273696-07	5.300422-07
4	5.095431-07	5.104583-07	5.144476-07	5.199816-07	5.237066-07
5	4.952718-07	4.964630-07	5.017312-07	5.088863-07	5.140122-07
6	4.779389-07	4.792917-07	4.857872-07	4.945593-07	5.008968-07
7	4.574409-07	4.591366-07	4.667823-07	4.770363-07	4.845934-07
8	4.343128-07	4.362305-07	4.449371-07	4.565663-07	4.652584-07
9	4.087116-07	4.108276-07	4.204921-07	4.333632-07	4.431154-07
10	3.809213-07	3.832099-07	3.937183-07	4.076902-07	4.184062-07
11	3.512484-07	3.536820-07	3.649108-07	3.798300-07	3.914031-07
12	3.200193-07	3.225689-07	3.343865-07	3.500904-07	3.624027-07
13	2.875772-07	2.902124-07	3.024808-07	3.187987-07	3.317232-07
14	2.542777-07	2.569676-07	2.695441-07	2.862991-07	2.997009-07
15	2.204845-07	2.231976-07	2.359373-07	2.529483-07	2.666866-07
16	1.865639-07	1.892694-07	2.020264-07	2.191111-07	2.330413-07
17	1.528761-07	1.555439-07	1.681804-07	1.851563-07	1.991310-07
18	1.197735-07	1.223756-07	1.347412-07	1.514420-07	1.653189-07
19	8.756045-08	9.006620-08	1.021098-07	1.183388-07	1.319632-07
20	5.667511-08	5.902942-08	7.028676-08	8.606874-08	9.937108-08
21	2.714439-08	2.896876-08	4.092752-08	5.540037-08	6.795723-08
22	2.848913-09	3.186317-09	7.074012-09	2.422469-08	3.730747-08
23	0.000000+00	0.000000+00	0.000000+00	1.880371-08	3.236505-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	2.377560-07	2.377952-07	2.379225-07	2.379225-07	2.377952-07
2	2.364337-07	2.365749-07	2.371528-07	2.380335-07	2.383658-07
3	2.332198-07	2.334821-07	2.346009-07	2.361212-07	2.372401-07
4	2.284105-07	2.287937-07	2.304687-07	2.327825-07	2.343438-07
5	2.220894-07	2.225885-07	2.248008-07	2.277923-07	2.299422-07
6	2.143491-07	2.149582-07	2.176864-07	2.213544-07	2.240122-07
7	2.052766-07	2.059880-07	2.091998-07	2.134876-07	2.166575-07
8	1.949763-07	1.957813-07	1.994394-07	2.043032-07	2.079485-07
9	1.835623-07	1.844510-07	1.885125-07	1.938964-07	1.979858-07
10	1.711611-07	1.721227-07	1.765400-07	1.823854-07	1.868780-07
11	1.579093-07	1.589324-07	1.636537-07	1.698966-07	1.747473-07
12	1.439526-07	1.450251-07	1.499954-07	1.565677-07	1.617270-07
13	1.294445-07	1.305536-07	1.357151-07	1.425454-07	1.479596-07
14	1.145438-07	1.156766-07	1.209694-07	1.279838-07	1.335963-07
15	9.941334-08	1.005566-07	1.059203-07	1.130429-07	1.187944-07
16	8.421685-08	8.535782-08	9.073056-08	9.788554-08	1.037155-07
17	6.911492-08	7.024092-08	7.556723-08	8.267720-08	8.852353-08
18	5.426535-08	5.536541-08	6.057631-08	6.757576-08	7.338017-08
19	3.979948-08	4.085942-08	4.595519-08	5.275075-08	5.844576-08

IV-21

20	2.590090-08	2.691411-08	3.165079-08	3.828709-08	4.385314-08
21	1.220577-08	1.331732-08	1.850618-08	2.454772-08	2.978952-08
22	1.322994-09	1.478513-09	3.253026-09	1.055979-08	1.603346-08
23	0.000000+00	0.000000+00	0.000000+00	8.113424-09	1.380558-08

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	8.976804-08	8.978134-08	8.982433-08	8.982433-08	8.978134-08
2	8.929287-08	8.934165-08	8.954218-08	8.984545-08	8.996187-08
3	8.811123-08	8.820206-08	8.859102-08	8.911758-08	8.950546-08
4	8.632728-08	8.646016-08	8.704281-08	8.784344-08	8.838569-08
5	8.397168-08	8.414490-08	8.491457-08	8.594961-08	8.669692-08
6	8.107889-08	8.129041-08	8.223974-08	8.350915-08	8.443261-08
7	7.768129-08	7.792847-08	7.904624-08	8.053017-08	8.163182-08
8	7.381791-08	7.409776-08	7.537113-08	7.705476-08	7.832122-08
9	6.953151-08	6.984064-08	7.125472-08	7.311869-08	7.453915-08
10	6.486955-08	6.520426-08	6.674258-08	6.876668-08	7.032667-08
11	5.938335-08	6.023968-08	6.188432-08	6.404640-08	6.573023-08
12	5.462776-08	5.500143-08	5.673330-08	5.900993-08	6.080013-08
13	4.916047-08	4.954722-08	5.134630-08	5.371262-08	5.559063-08
14	4.354145-08	4.393671-08	4.578216-08	4.821267-08	5.015866-08
15	3.783197-08	3.823118-08	4.010221-08	4.257049-08	4.456379-08
16	3.209397-08	3.249268-08	3.436728-08	3.684744-08	3.886709-08
17	2.638770-08	2.678146-08	2.864195-08	3.110625-08	3.313045-08
18	2.077334-08	2.115866-08	2.297683-08	2.540525-08	2.741455-08
19	1.529676-08	1.566897-08	1.745729-08	1.981071-08	2.178009-08
20	1.002723-08	1.038918-08	1.203544-08	1.434739-08	1.627482-08
21	4.895446-09	5.198598-09	7.074980-09	9.159464-09	1.096975-08
22	5.237307-10	5.846140-10	1.271053-09	3.861171-09	5.759289-09
23	0.000000+00	0.000000+00	0.000000+00	2.926402-09	4.909598-09

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	2.217148-08	2.217453-08	2.218432-08	2.218432-08	2.217453-08
2	2.205811-08	2.206940-08	2.211597-08	2.218605-08	2.221333-08
3	2.177156-08	2.179263-08	2.188311-08	2.200523-08	2.209530-08
4	2.133622-08	2.136708-08	2.150266-08	2.168828-08	2.181433-08
5	2.075956-08	2.079980-08	2.097892-08	2.121883-08	2.139269-08
6	2.004998-08	2.009914-08	2.032009-08	2.061441-08	2.082915-08
7	1.921542-08	1.927288-08	1.953306-08	1.987710-08	2.013334-08
8	1.826545-08	1.833054-08	1.862697-08	1.901738-08	1.931186-08
9	1.721060-08	1.728252-08	1.761174-08	1.804401-08	1.837425-08
10	1.606253-08	1.614043-08	1.649863-08	1.696809-08	1.733067-08
11	1.483388-08	1.491685-08	1.529986-08	1.580138-08	1.619264-08

IV-22

12	1.353816-08	1.362522-08	1.402862-08	1.455675-08	1.497262-08
13	1.218961-08	1.227973-08	1.269887-08	1.324788-08	1.368401-08
14	1.080300-08	1.089515-08	1.132519-08	1.188913-08	1.234092-08
15	9.393468-09	9.486579-09	9.922706-09	1.049546-08	1.095808-08
16	7.976320-09	8.069364-09	8.506358-09	9.081959-09	9.550560-09
17	6.566345-09	6.658269-09	7.092345-09	7.664217-09	8.133672-09
18	5.178032-09	5.268676-09	5.692394-09	6.256335-09	6.722292-09
19	3.823861-09	3.910817-09	4.329455-09	4.875227-09	5.331540-09
20	2.519375-09	2.604935-09	2.987160-09	3.525549-09	3.972630-09
21	1.239411-09	1.313498-09	1.761448-09	2.243990-09	2.663222-09
22	1.333059-10	1.486966-10	3.203229-10	9.307996-10	1.372210-09
23	0.000000+00	0.000000+00	0.000000+00	6.972414-10	1.160264-09

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	8.218078-09	8.219126-09	8.222473-09	8.222473-09	8.219126-09
2	8.177409-09	8.181348-09	8.197637-09	8.221999-09	8.231597-09
3	8.072946-09	8.080307-09	8.111998-09	8.154669-09	8.186160-09
4	7.913326-09	7.924113-09	7.971618-09	8.036409-09	8.080555-09
5	7.701274-09	7.715349-09	7.778111-09	7.861869-09	7.922770-09
6	7.439877-09	7.457079-09	7.534503-09	7.637268-09	7.712474-09
7	7.132056-09	7.152173-09	7.243347-09	7.363478-09	7.453221-09
8	6.781345-09	6.804137-09	6.908024-09	7.044365-09	7.147475-09
9	6.391621-09	6.416816-09	6.532206-09	6.683177-09	6.798790-09
10	5.967199-09	5.994499-09	6.120060-09	6.284038-09	6.410941-09
11	5.512750-09	5.541832-09	5.676112-09	5.851302-09	5.988212-09
12	5.033271-09	5.063798-09	5.205244-09	5.389748-09	5.535231-09
13	4.534026-09	4.565639-09	4.712634-09	4.904447-09	5.056973-09
14	4.020496-09	4.052832-09	4.203665-09	4.400719-09	4.558677-09
15	3.498269-09	3.530954-09	3.683982-09	3.884116-09	4.045809-09
16	2.973046-09	3.005723-09	3.159027-09	3.360207-09	3.523952-09
17	2.450270-09	2.482561-09	2.635023-09	2.834824-09	2.998794-09
18	1.935628-09	1.967286-09	2.115818-09	2.313074-09	2.475818-09
19	1.432906-09	1.463448-09	1.610975-09	1.801433-09	1.960663-09
20	9.488688-10	9.791781-10	1.112361-09	1.301195-09	1.457361-09
21	4.710101-10	4.981864-10	6.586409-10	8.263553-10	9.725298-10
22	5.123633-11	5.710567-11	1.219241-10	3.386136-10	4.930246-10
23	0.000000+00	0.000000+00	0.000000+00	2.512425-10	4.138617-10

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	1.401669-08	1.401795-08	1.402182-08	1.402182-08	1.401795-08
2	1.395642-08	1.396153-08	1.398296-08	1.401400-08	1.402690-08
3	1.378977-08	1.379940-08	1.384134-08	1.389731-08	1.393874-08

IV-23

4	1.352905-08	1.354321-08	1.360615-08	1.369051-08	1.374906-08
5	1.317861-08	1.319712-08	1.328029-08	1.338964-08	1.347033-08
6	1.274353-08	1.276620-08	1.286881-08	1.300296-08	1.310258-08
7	1.222865-08	1.225520-08	1.237606-08	1.253299-08	1.265183-08
8	1.163987-08	1.166999-08	1.180774-08	1.198595-08	1.212235-08
9	1.098368-08	1.101702-08	1.117010-08	1.136751-08	1.152032-08
10	1.026733-08	1.030350-08	1.047013-08	1.068469-08	1.085225-08
11	9.498675-09	9.537283-09	9.715621-09	9.944925-09	1.012550-08
12	8.686223-09	8.726789-09	8.914688-09	9.156346-09	9.348044-09
13	7.838818-09	7.880878-09	8.076426-09	8.327656-09	8.528401-09
14	6.965819-09	7.008913-09	7.209452-09	7.467844-09	7.675546-09
15	6.076639-09	6.120251-09	6.324379-09	6.586542-09	6.798850-09
16	5.191203-09	5.224904-09	5.428643-09	5.692946-09	5.907818-09
17	4.288420-09	4.331602-09	4.536198-09	4.797527-09	5.012225-09
18	3.408944-09	3.451518-09	3.647651-09	3.908014-09	4.121229-09
19	2.547442-09	2.588137-09	2.789592-09	3.037051-09	3.244742-09
20	1.721359-09	1.761896-09	1.931745-09	2.184103-09	2.388706-09
21	8.927954-10	9.359129-10	1.162292-09	1.375393-09	1.565736-09
22	1.041990-10	1.156667-10	2.364436-10	5.375101-10	7.411152-10
23	0.000000+00	0.000000+00	0.000000+00	3.828717-10	6.015691-10

NEUTRON BALANCE, LINE FOR EACH GROUP PLUS LINE FOR SUM

1.FXD SOURCE 2.FISSIONS IN 3.IN SCATT. 4.SELF SCATT. 5.OUT SC ATT. 6.ABS.NEUTS 7.NET LEAK 8.NET BALANCE
9.ZONE NO. 10.TOT FLUX 11.TOT DENS. 12.RT. FLUX 13.RT. FLOW 14.RT.CURRENT 15.RT.LEAKAGE 16.FISS.NEUTS

	1	2	3	4	5	6	7	8
1	0.000000+00	2.040000-01	-2.596527-06	2.491904-01	1.805525-01	1.450707-03	2.199670-02	1.000012+00
2	0.000000+00	3.440000-01	1.787944-01	1.513664+00	4.339329-01	5.879140-03	8.299035-02	1.000015+00
3	0.000000+00	1.679999-01	4.289756-01	9.261097-01	5.638035-01	2.898602-03	3.027502-02	1.000002+00
4	0.000000+00	1.800000-01	5.665509-01	2.693564+00	6.976930-01	5.168138-03	4.369624-02	1.000008+00
5	0.000000+00	9.000000-02	7.008517-01	5.335340+00	7.275050-01	9.259518-03	5.410456-02	1.000022+00
6	0.000000+00	1.400000-02	7.282578-01	6.551555+00	6.774635-01	1.767139-02	4.714520-02	1.000030+00
7	0.000000+00	0.000000+00	6.774451-01	5.766131+00	6.136968-01	2.606628-02	3.770017-02	1.000026+00
8	0.000000+00	0.000000+00	6.136766-01	5.668062+00	5.241309-01	5.221134-02	3.735435-02	1.000032+00
9	0.000000+00	0.000000+00	5.241168-01	4.362996+00	4.034502-01	9.232774-02	2.835282-02	1.000026+00
10	0.000000+00	0.000000+00	4.034483-01	1.421522+00	2.849114-01	1.087030-01	9.835698-03	1.000004+00
11	0.000000+00	0.000000+00	2.849101-01	9.825873-01	1.969369-01	8.123961-02	6.734808-03	1.000004+00
12	0.000000+00	0.000000+00	1.969357-01	7.961871-01	1.595773-01	3.179965-02	5.559924-03	1.000006+00
13	0.000000+00	0.000000+00	1.595762-01	6.743188-01	1.351516-01	1.968882-02	4.736849-03	1.000007+00
14	0.000000+00	0.000000+00	1.414464-01	8.798682-01	8.980712-02	4.717178-02	4.469501-03	1.000013+00
15	0.000000+00	0.000000+00	7.886094-02	6.103942-02	6.491388-02	1.332092-02	6.305609-04	1.000056+00
16	0.000000+00	0.000000+00	6.638849-02	4.585798-02	5.019301-02	1.573015-02	4.687179-04	1.000051+00
17	0.000000+00	0.000000+00	5.471113-02	3.903949-02	4.150360-02	1.281567-02	3.948206-04	1.000054+00
18	0.000000+00	0.000000+00	3.998933-02	2.275046-02	3.091052-02	8.819040-03	2.615439-04	1.000044+00
19	0.000000+00	0.000000+00	4.079920-02	4.682688-02	2.673082-02	1.372544-02	3.466995-04	1.000092+00
20	0.000000+00	0.000000+00	2.289059-02	1.902116-02	1.403413-02	8.709623-03	1.484083-04	1.000068+00

IV-24

21	0.000000+00	0.000000+00	1.087519-02	6.330298-03	6.242486-03	4.580237-03	5.300865-05	1.000048+00
22	0.000000+00	0.000000+00	3.582553-03	9.337680-04	2.202273-03	1.367800-03	1.255913-05	1.000022+00
23	0.000000+00	0.000000+00	1.550260-03	2.231496-04	9.498308-04	5.959550-04	4.494083-06	1.000012+00
24	0.000000+00	0.000000+00	2.083050-03	1.833039-03	5.619829-04	1.514592-03	6.631843-06	1.000075+00
25	0.000000+00	9.999999-01	5.926714+00	3.806495+01	5.926855+00	5.827152-01	4.172796-01	1.000019+00
	9	10	11	12	13	14	15	16
1	1	4.211248+00	1.477631-01	6.804419-07	4.343841-07	4.343841-07	2.199670-02	4.095370-03
2	1	1.654138+01	8.312255-01	2.638501-06	1.638867-06	1.638867-06	8.299035-02	1.445364-02
3	1	7.971471+00	5.422769-01	9.981260-07	5.978619-07	5.978619-07	3.027502-02	6.727808-03
4	1	1.400237+01	1.272943+00	1.452565-06	8.628999-07	8.628999-07	4.369624-02	1.143881-02
5	1	2.040242+01	3.045138+00	1.808311-06	1.068440-06	1.068440-06	5.410456-02	1.962348-02
6	1	2.051926+01	7.599729+00	1.581297-06	9.310089-07	9.310089-07	4.714520-02	3.436105-02
7	1	1.733476+01	1.401355+01	1.263680-06	7.444913-07	7.444913-07	3.770017-02	4.876764-02
8	1	1.720455+01	3.392733+01	1.250115-06	7.376623-07	7.376623-07	3.735435-02	9.106410-02
9	1	1.324321+01	7.097115+01	9.490964-07	5.599028-07	5.599028-07	2.835282-02	1.552192-01
10	1	4.741201+00	5.551758+01	3.297879-07	1.942323-07	1.942323-07	9.835698-03	1.700931-01
11	1	3.277221+00	6.326682+01	2.257031-07	1.329969-07	1.329969-07	6.734808-03	1.040695-01
12	1	2.655521+00	8.457074+01	1.860189-07	1.097956-07	1.097956-07	5.559924-03	4.046832-02
13	1	2.249054+00	1.177515+02	1.584819-07	9.354184-08	9.354184-08	4.716849-03	3.656143-02
14	1	2.366104+00	2.039745+02	1.503700-07	8.826233-08	8.826233-08	4.469501-03	9.715039-02
15	1	3.317417-01	4.151961+01	2.116074-08	1.245212-08	1.245212-08	6.305609-04	2.748155-02
16	1	2.539059-01	3.440459+01	1.577178-08	9.256097-09	9.256097-09	4.687179-04	3.054386-02
17	1	2.138844-01	3.285475+01	1.326871-08	7.796796-09	7.796796-09	3.948206-04	2.508621-02
18	1	1.425459-01	2.479060+01	8.787782-09	5.164889-09	5.164889-09	2.615439-04	1.765434-02
19	1	1.931756-01	4.049804+01	1.166208-08	6.846514-09	6.846514-09	3.466995-04	2.846686-02
20	1	8.647267-02	2.324534+01	5.005406-09	2.930721-09	2.930721-09	1.484083-04	1.806220-02
21	1	3.263234-02	1.126807+01	1.793733-09	1.046798-09	1.046798-09	5.300865-05	9.403454-03
22	1	8.056719-03	3.403768+00	4.257912-10	2.480140-10	2.480140-10	1.255913-05	2.808451-03
23	1	2.985674-03	1.479920+00	1.527244-10	8.874776-11	8.874776-11	4.494083-06	1.222792-03
24	1	5.090387-03	5.090387+00	2.278854-10	1.309636-10	1.309636-10	6.631843-06	3.109084-03
25	1	1.479903+02	8.759374+02	1.375075-05	8.240310-06	8.240310-06	4.172796-01	9.979327-01
	1	2	3	4	5	6	7	8
1	0.000000+00	2.040000-01	-2.596527-06	2.491904-01	1.805525-01	1.450707-03	2.199670-02	1.000012+00
2	0.000000+00	3.440000-01	1.787944-01	1.513664+00	4.339329-01	5.879140-03	8.299035-02	1.000015+00
3	0.000000+00	1.679999-01	4.289756-01	9.261097-01	5.638035-01	2.898602-03	3.027502-02	1.000002+00
4	0.000000+00	1.800000-01	5.665509-01	2.693564+00	6.976930-01	5.168138-03	4.369624-02	1.000008+00
5	0.000000+00	9.000000-02	7.008517-01	5.335340+00	7.275050-01	9.259518-03	5.410456-02	1.000022+00
6	0.000000+00	1.400000-02	7.282578-01	6.551555+00	6.774635-01	1.767139-02	4.714520-02	1.000030+00
7	0.000000+00	0.000000+00	6.774451-01	5.766131+00	6.136968-01	2.606628-02	3.770017-02	1.000026+00
8	0.000000+00	0.000000+00	6.136766-01	5.668062+00	5.241309-01	5.221134-02	3.735435-02	1.000032+00
9	0.000000+00	0.000000+00	5.241168-01	4.362996+00	4.034502-01	9.232774-02	2.835282-02	1.000026+00
10	0.000000+00	0.000000+00	4.034483-01	1.421522+00	2.849114-01	1.087030-01	9.835698-03	1.000004+00
11	0.000000+00	0.000000+00	2.849101-01	9.825873-01	1.969369-01	8.123961-02	6.734808-03	1.000004+00
12	0.000000+00	0.000000+00	1.969357-01	7.961871-01	1.595773-01	3.179965-02	5.559924-03	1.000006+00
13	0.000000+00	0.000000+00	1.595762-01	6.743188-01	1.351516-01	1.968882-02	4.736849-03	1.000007+00
14	0.000000+00	0.000000+00	1.414464-01	8.798682-01	8.980712-02	4.717178-02	4.469501-03	1.000013+00
15	0.000000+00	0.000000+00	7.886094-02	6.103942-02	6.491388-02	1.332092-02	6.305609-04	1.000056+00
16	0.000000+00	0.000000+00	6.638849-02	4.585798-02	5.019301-02	1.573015-02	4.687179-04	1.000051+00

IV-25

17	0.000000+00	0.000000+00	5.471113-02	3.903949-02	4.150360-02	1.281567-02	3.948206-04	1.000054+00
18	0.000000+00	0.000000+00	3.998933-02	2.275046-02	3.091052-02	8.819040-03	2.615439-04	1.000044+00
19	0.000000+00	0.000000+00	4.079920-02	4.682688-02	2.673082-02	1.372544-02	3.466995-04	1.000092+00
20	0.000000+00	0.000000+00	2.289059-02	1.902116-02	1.403413-02	8.709623-03	1.484083-04	1.000068+00
21	0.000000+00	0.000000+00	1.087519-02	6.330298-03	6.242486-03	4.580237-03	5.300865-05	1.000048+00
22	0.000000+00	0.000000+00	3.582553-03	9.337680-04	2.202273-03	1.367800-03	1.255913-05	1.000022+00
23	0.000000+00	0.000000+00	1.550260-03	2.231496-04	9.498308-04	5.959550-04	4.494083-06	1.000012+00
24	0.000000+00	0.000000+00	2.083050-03	1.833039-03	5.619829-04	1.514592-03	6.631843-06	1.000075+00
25	0.000000+00	9.999999-01	5.926714+00	3.806495+01	5.926855+00	5.827152-01	4.172796-01	1.000019+00
9	10	11	12	13	14	15	16	
1	0.000000+00	4.211248+00	1.477631-01	6.804419-07	4.343841-07	4.343841-07	2.199670-02	4.095370-03
2	0.000000+00	1.654138+01	8.312255-01	2.638501-06	1.638867-06	1.638867-06	8.299035-02	1.445364-02
3	0.000000+00	7.971471+00	5.422769-01	9.981260-07	5.978619-07	5.978619-07	3.027502-02	6.727808-03
4	0.000000+00	1.400237+01	1.272943+00	1.452565-06	8.628999-07	8.628999-07	4.369624-02	1.143881-02
5	0.000000+00	2.040242+01	3.045138+00	1.808311-06	1.068440-06	1.068440-06	5.410456-02	1.962348-02
6	0.000000+00	2.051926+01	7.599729+00	1.581297-06	9.310089-07	9.310089-07	4.714520-02	3.436105-02
7	0.000000+00	1.733476+01	1.401355+01	1.263680-06	7.444913-07	7.444913-07	3.770017-02	4.876764-02
8	0.000000+00	1.720455+01	3.392733+01	1.250115-06	7.376623-07	7.376623-07	3.735435-02	9.106410-02
9	0.000000+00	1.324321+01	7.097115+01	9.490964-07	5.599028-07	5.599028-07	2.835282-02	1.552192-01
10	0.000000+00	4.741201+00	5.551758+01	3.297879-07	1.942323-07	1.942323-07	9.835698-03	1.700931-01
11	0.000000+00	3.217221+00	6.326682+01	2.257031-07	1.329969-07	1.329969-07	6.734808-03	1.040695-01
12	0.000000+00	2.655521+00	8.457074+01	1.860189-07	1.097956-07	1.097956-07	5.559924-03	4.046832-02
13	0.000000+00	2.249054+00	1.177515+02	1.584819-07	9.354184-08	9.354184-08	4.736849-03	3.656143-02
14	0.000000+00	2.366104+00	2.039745+02	1.503700-07	8.826233-08	8.826233-08	4.469501-03	9.715039-02
15	0.000000+00	3.317417-01	4.151961+01	2.116074-08	1.245212-08	1.245212-08	6.305609-04	2.748155-02
16	0.000000+00	2.539059-01	3.440459+01	1.577178-08	9.256097-09	9.256097-09	4.687179-04	3.054386-02
17	0.000000+00	2.138844-01	3.285475+01	1.326871-08	7.796796-09	7.796796-09	3.948206-04	2.508621-02
18	0.000000+00	1.425459-01	2.479060+01	8.787782-09	5.164889-09	5.164889-09	2.615439-04	1.765434-02
19	0.000000+00	1.931756-01	4.049804+01	1.166208-08	6.846514-09	6.846514-09	3.466995-04	2.846686-02
20	0.000000+00	8.647267-02	2.324534+01	5.005406-09	2.930721-09	2.930721-09	1.484083-04	1.806220-02
21	0.000000+00	3.263234-02	1.126807+01	1.793733-09	1.046798-09	1.046798-09	5.300865-05	9.403454-03
22	0.000000+00	8.056719-03	3.403768+00	4.257912-10	2.480140-10	2.480140-10	1.255913-05	2.808451-03
23	0.000000+00	2.985674-03	1.429920+00	1.527244-10	8.874776-11	8.874776-11	4.494083-06	1.222792-03
24	0.000000+00	5.090387-03	5.090387+00	2.278854-10	1.309636-10	1.309636-10	6.631843-06	3.109084-03
25	0.000000+00	1.479903+02	8.759374+02	1.375075-05	8.240310-06	8.240310-06	4.172796-01	9.979327-01

NEUTRON BALANCE, LINE FOR EACH GROUP PLUS LINE FOR SUM

	1.FXD SOURCE	2.FISSIONS IN	3.IN SCATT.	4.SELF SCATT.	5.OUT SC ATT.	6.ABS.NEUTS	7.NET LEAK	8.NET BALANCE
	1	2	3	4	5	6	7	8
1	0.000000+00	2.040000-01	-3.725290-09	2.491904-01	1.805525-01	1.450707-03	2.199670-02	9.999998-01
2	0.000000+00	3.440000-01	1.788025-01	1.513664+00	4.339329-01	5.879140-03	8.299035-02	9.999998-01
3	0.000000+00	1.680000-01	4.289772-01	9.261097-01	5.638035-01	2.898602-03	3.027502-02	9.999998-01
4	0.000000+00	1.800000-01	5.665576-01	2.693564+00	6.976930-01	5.168138-03	4.369624-02	9.999997-01
5	0.000000+00	9.000000-02	7.008693-01	5.335340+00	7.275049-01	9.259518-03	5.410456-02	9.999996-01
6	0.000000+00	1.400000-02	7.282803-01	6.551555+00	6.774634-01	1.767139-02	4.714520-02	9.999995-01
7	0.000000+00	0.000000+00	6.774635-01	5.766131+00	6.136967-01	2.606628-02	3.770017-02	9.999995-01

IV-26

8	0.000000+00	0.000000+00	6.136968-01	5.668062+00	5.241309-01	5.221134-02	3.735435-02	9.999995-01
9	0.000000+00	0.000000+00	5.241309-01	4.362996+00	4.034502-01	9.232774-02	2.835282-02	9.999995-01
10	0.000000+00	0.000000+00	4.034503-01	1.421522+00	2.849114-01	1.087030-01	9.835698-03	9.999997-01
11	0.000000+00	0.000000+00	2.849114-01	9.825873-01	1.969369-01	8.123962-02	6.734808-03	9.999997-01
12	0.000000+00	0.000000+00	1.969369-01	7.961871-01	1.595773-01	3.179965-02	5.559924-03	9.999997-01
13	0.000000+00	0.000000+00	1.595773-01	6.743188-01	1.351516-01	1.968882-02	4.736849-03	9.999997-01
14	0.000000+00	0.000000+00	1.414484-01	8.798682-01	8.980713-02	4.717178-02	4.469501-03	9.999996-01
15	0.000000+00	0.000000+00	7.886537-02	6.103942-02	6.491388-02	1.332092-02	6.305609-04	9.999999-01
16	0.000000+00	0.000000+00	6.639189-02	4.585798-02	5.019301-02	1.573015-02	4.687179-04	9.999998-01
17	0.000000+00	0.000000+00	5.471410-02	3.903949-02	4.150360-02	1.281567-02	3.948206-04	9.999999-01
18	0.000000+00	0.000000+00	3.999111-02	2.275046-02	3.091052-02	8.819040-03	2.615439-04	9.999998-01
19	0.000000+00	0.000000+00	4.080296-02	4.682688-02	2.673082-02	1.372544-02	3.466995-04	9.999999-01
20	0.000000+00	0.000000+00	2.289217-02	1.902116-02	1.403413-02	8.709623-03	1.484083-04	9.999999-01
21	0.000000+00	0.000000+00	1.087573-02	6.330298-03	6.242486-03	4.580237-03	5.300865-05	9.999999-01
22	0.000000+00	0.000000+00	3.582633-03	9.337680-04	2.202273-03	1.367800-03	1.255913-05	9.999999-01
23	0.000000+00	0.000000+00	1.550280-03	2.231496-04	9.498308-04	5.959550-04	4.494083-06	9.999999-01
24	0.000000+00	0.000000+00	2.083207-03	1.833039-03	5.619830-04	1.514592-03	6.631843-06	9.999999-01
25	0.000000+00	1.000000+00	5.926852+00	3.806495+01	5.926855+00	5.827152-01	4.172796-01	9.999997-01

MATERIAL BUCKLING

1 2.143695-03

MILLS 24 GROUP - C/U=301 - TEMP=0.025 EV

	MONITOR ID	ICT	LCT	NB	EPS	EQ	EV	LA
1	301025	30	2424	9.999997-01	9.999999-05	0.000000+00	9.978768-01	1.000056+00

FINAL PRINT FOLLOWS

	MO	R1	R3	F0	V0	A0
	1	2	3	4	5	6
1	1	0	1.500000+00	2.718644-06	1.130973+02	0.000000+00
2	1	3.000000+00	4.500000+00	2.704638-06	7.916813+02	1.130973+02
3	1	6.000000+00	7.500000+00	2.670664-06	2.148849+03	4.523893+02
4	1	9.000000+00	1.050000+01	2.618852-06	4.184601+03	1.017875+03
5	1	1.200000+01	1.350000+01	2.549762-06	6.898936+03	1.809557+03
6	1	1.500000+01	1.650000+01	2.464423-06	1.029185+04	2.827433+03

IV-27

7	1	1.800000+01	1.950000+01	2.363774-06	1.436336+04	4.071503+03
8	1	2.100000+01	2.250000+01	2.248988-06	1.911344+04	5.541769+03
9	1	2.400000+01	2.550000+01	2.121358-06	2.454212+04	7.238229+03
10	1	2.700000+01	2.850000+01	1.982313-06	3.064937+04	9.160883+03
11	1	3.000000+01	3.150000+01	1.833400-06	3.743521+04	1.130973+04
12	1	3.300000+01	3.450000+01	1.676259-06	4.489963+04	1.368477+04
13	1	3.600000+01	3.750000+01	1.512608-06	5.304264+04	1.628601+04
14	1	3.900000+01	4.050000+01	1.344221-06	6.186423+04	1.911344+04
15	1	4.200000+01	4.350000+01	1.172903-06	7.136442+04	2.216707+04
16	1	4.500000+01	4.650000+01	1.000481-06	8.154317+04	2.544689+04
17	1	4.800000+01	4.950000+01	8.287665-07	9.240051+04	2.895291+04
18	1	5.100000+01	5.250000+01	6.595708-07	1.039364+05	3.268512+04
19	1	5.400000+01	5.550000+01	4.944919-07	1.161509+05	3.664353+04
20	1	5.700000+01	5.850000+01	3.359191-07	1.290440+05	4.082813+04
21	1	6.000000+01	6.150000+01	1.789960-07	1.426157+05	4.523893+04
22	1	6.300000+01	6.324000+01	8.524792-08	2.412329+04	4.987592+04
23		6.348000+01				5.063883+04

	NO							
	1	2	3	4	5	6	7	8
1	1.106989-05	4.309729-05	2.101299-05	3.727168-05	5.468665-05	5.531139-05	4.691589-05	4.671336-05
2	1.103016-05	4.293315-05	2.091875-05	3.709277-05	5.441394-05	5.502864-05	4.667438-05	4.647316-05
3	1.089141-05	4.239573-05	2.065721-05	3.662829-05	5.373212-05	5.433897-05	4.608918-05	4.589014-05
4	1.068112-05	4.157897-05	2.025841-05	3.592021-05	5.269247-05	5.328712-05	4.519683-05	4.500129-05
5	1.039969-05	4.048682-05	1.972592-05	3.497518-05	5.130555-05	5.188449-05	4.400702-05	4.381607-05
6	1.005253-05	3.913955-05	1.906863-05	3.380842-05	4.959305-05	5.015250-05	4.253779-05	4.235236-05
7	9.643359-06	3.755204-05	1.829395-05	3.243303-05	4.757423-05	4.811063-05	4.080554-05	4.062639-05
8	9.176968-06	3.574323-05	1.741114-05	3.086550-05	4.527329-05	4.578329-05	3.883088-05	3.865848-05
9	8.658783-06	3.373452-05	1.643059-05	2.912417-05	4.271703-05	4.319739-05	3.663642-05	3.647097-05
10	8.094851-06	3.154978-05	1.536388-05	2.722943-05	3.993515-05	4.038268-05	3.424717-05	3.408851-05
11	7.491792-06	2.921510-05	1.422359-05	2.520337-05	3.695973-05	3.737125-05	3.169003-05	3.153763-05
12	6.856732-06	2.675854-05	1.302320-05	2.306953-05	3.382481-05	3.419701-05	2.899338-05	2.884635-05
13	6.197243-06	2.420977-05	1.177690-05	2.085257-05	3.056587-05	3.089515-05	2.618663-05	2.604376-05
14	5.521286-06	2.159985-05	1.049943-05	1.857791-05	2.721922-05	2.750149-05	2.329971-05	2.315961-05
15	4.837161-06	1.896085-05	9.205860-06	1.627127-05	2.382126-05	2.405177-05	2.036251-05	2.022394-05
16	4.153467-06	1.632550-05	7.911344-06	1.395819-05	2.040775-05	2.058089-05	1.740444-05	1.726673-05
17	3.479041-06	1.372664-05	6.630810-06	1.166335-05	1.701282-05	1.712199-05	1.445384-05	1.431769-05
18	2.822815-06	1.119579-05	5.378364-06	9.409680-06	1.366787-05	1.370588-05	1.153801-05	1.140642-05
19	2.193396-06	8.759314-06	4.165994-06	7.216949-06	1.039987-05	1.035805-05	8.680998-06	8.560959-06
20	1.597232-06	6.425154-06	2.996570-06	5.094835-06	7.234117-06	7.114549-06	5.920138-06	5.822751-06
21	1.036176-06	4.146117-06	1.815671-06	2.946254-06	4.035435-06	3.851253-06	3.165415-06	3.110449-06
22	7.223784-07	2.823944-06	1.103732-06	1.646721-06	2.099546-06	1.879300-06	1.512041-06	1.491746-06
	9	10	11	12	13	14	15	16
1	3.605312-05	1.292677-05	8.947154-06	7.258142-06	6.153978-06	6.489642-06	9.102958-07	6.970094-07
2	3.586741-05	1.285986-05	8.900769-06	7.220609-06	6.122170-06	6.455582-06	9.055206-07	6.933416-07
3	3.541717-05	1.269838-05	8.788930-06	7.129799-06	6.045113-06	6.374332-06	8.941202-07	6.846147-07
4	3.473069-05	1.245211-05	8.618380-06	6.991348-06	5.927624-06	6.250355-06	8.767306-07	6.712989-07

IV-28

5	3.381528-05	1.212373-05	8.390963-06	6.806715-06	5.770938-06	6.085060-06	8.535433-07	6.535457-07
6	3.268465-05	1.171812-05	8.110058-06	6.578650-06	5.577385-06	5.880848-06	8.248971-07	6.316118-07
7	3.135124-05	1.123975-05	7.778740-06	6.309639-06	5.349071-06	5.639944-06	7.911024-07	6.057354-07
8	2.983065-05	1.069419-05	7.400869-06	6.002807-06	5.088642-06	5.365132-06	7.525497-07	5.762149-07
9	2.813997-05	1.008757-05	6.980674-06	5.661585-06	4.799007-06	5.059469-06	7.096674-07	5.433781-07
10	2.629820-05	9.426661-06	6.522843-06	5.289775-06	4.483393-06	4.726356-06	6.629322-07	5.075899-07
11	2.432565-05	8.718764-06	6.032427-06	4.891477-06	4.145285-06	4.369473-06	6.128604-07	4.692454-07
12	2.224393-05	7.771622-06	5.514791-06	4.471058-06	3.788398-06	3.992748-06	5.600033-07	4.287669-07
13	2.007554-05	7.193321-06	4.975549-06	4.033091-06	3.416633-06	3.600315-06	5.049412-07	3.865989-07
14	1.784363-05	6.392205-06	4.420505-06	3.582317-06	3.034043-06	3.196469-06	4.482777-07	3.432041-07
15	1.557180-05	5.576792-06	3.855595-06	3.123596-06	2.644790-06	2.785628-06	3.906331-07	2.990573-07
16	1.328383-05	4.755707-06	3.286839-06	2.661866-06	2.253119-06	2.372283-06	3.326367-07	2.546408-07
17	1.100362-05	3.937608-06	2.720281-06	2.202104-06	1.863318-06	1.960907-06	2.749161-07	2.104316-07
18	8.755273-06	3.131234-06	2.161994-06	1.749321-06	1.479724-06	1.556014-06	2.180935-07	1.669093-07
19	6.561590-06	2.344544-06	1.617504-06	1.308236-06	1.106446-06	1.161267-06	1.626890-07	1.244514-07
20	4.455681-06	1.589502-06	1.095106-06	8.856909-07	7.493343-07	7.827688-07	1.095321-07	8.371547-08
21	2.374935-06	8.428276-07	5.793251-07	4.698880-07	3.982107-07	4.085161-07	5.709856-08	4.348158-08
22	1.134342-06	3.967215-07	2.717326-07	2.227906-07	1.895510-07	1.843180-07	2.584379-08	1.941288-08
1	5.873371-07	3.915600-07	5.308043-07	2.377161-07	8.974490-08	2.216443-08	8.215030-09	1.400880-08
2	5.842464-07	3.894985-07	5.280042-07	2.364567-07	8.926696-08	2.204595-08	8.171002-09	1.393315-08
3	5.768923-07	3.845961-07	5.213622-07	2.334839-07	8.814526-08	2.176899-08	8.068377-09	1.375842-08
4	5.656730-07	3.771174-07	5.112278-07	2.289464-07	8.643237-08	2.134594-08	7.911567-09	1.349108-08
5	5.507141-07	3.671459-07	4.977161-07	2.228974-07	8.414925-08	2.078211-08	7.702598-09	1.313497-08
6	5.322324-07	3.548257-07	4.810207-07	2.154227-07	8.132783-08	2.008532-08	7.444345-09	1.269479-08
7	5.104279-07	3.402900-07	4.613219-07	2.066029-07	7.799866-08	1.926314-08	7.139619-09	1.217540-08
8	4.855519-07	3.237062-07	4.388458-07	1.965391-07	7.419978-08	1.832495-08	6.791897-09	1.158269-08
9	4.578801-07	3.052577-07	4.138405-07	1.853422-07	6.997300-08	1.728107-08	6.405001-09	1.092316-08
10	4.277200-07	2.851494-07	3.865833-07	1.731360-07	6.536506-08	1.614304-08	5.983209-09	1.020410-08
11	3.954043-07	2.636031-07	3.573743-07	1.600549-07	6.042663-08	1.492338-08	5.531157-09	9.433398-09
12	3.612890-07	2.408560-07	3.265350-07	1.462427-07	5.521199-08	1.363548-08	5.053815-09	8.619528-09
13	3.257488-07	2.171581-07	2.944041-07	1.318511-07	4.977839-08	1.229350-08	4.556421-09	7.771375-09
14	2.891737-07	1.927694-07	2.613342-07	1.170381-07	4.418545-08	1.091214-08	4.044436-09	6.898333-09
15	2.519641-07	1.679568-07	2.276868-07	1.019652-07	3.849413-08	9.506463-09	3.523425-09	6.009737-09
16	2.145256-07	1.429904-07	1.938278-07	8.679657-08	3.276646-08	8.091801-09	2.999099-09	5.115598-09
17	1.772600-07	1.181374-07	1.601174-07	7.169192-08	2.706214-08	6.682791-09	2.476828-09	4.224613-09
18	1.405668-07	9.366291-08	1.269156-07	5.681390-08	2.144353-08	5.295013-09	1.962484-09	3.347520-09
19	1.047668-07	6.977994-08	9.450319-08	4.228000-08	1.595122-08	3.937893-09	1.459381-09	2.489039-09
20	7.041121-08	4.685911-08	6.339111-08	2.832147-08	1.067224-08	2.632549-09	9.753634-10	1.663276-09
21	3.652772-08	2.427279-08	3.272275-08	1.452935-08	5.437137-09	1.334229-09	4.926595-10	8.318092-10
22	1.631079-08	1.081065-08	1.442197-08	6.264172-09	2.280901-09	5.481583-10	1.989627-10	3.143335-10

IV-29

1 STD 8 GROUP - C/L=301 - TEMP=0.025 EV
0.000000+00

THE FOLLOWING NUCLIDES WERE REQUESTED FROM TAPE

STD 8 GROUP - C/L=301 - TEMP=0.025 LV

A	ID	TH	SGT	SN	GE	BL	BR
I	RZ	IM	INP	EVT	EV	EVM	EPS
G	GM	HT	HS	FM	HGT	LGTH	BUCNO
M	MX	MR	MT	MM	DFM	FIT	
S	NZ	PVT	PV	QM	QSM	QSP	
C	IIM	CS	DML	LLA	HLA	EQL	NPM
D	NDP	CTZ	ACZ	ACR	OIM	MB	
1	301025	0	1	4	3	1	0
1	1	22	C	1	0	0	9.999999-05
1	8	3	6	10	0	0	0
1	0	1	0	1	0	0	
1	1.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	
1	20	0	5.000000-01	9.999999-03	4.999999-02	4.999999-03	1.000000+00
1	1	2	0	0	100	1	

MC	RC	FO	VO	AO	D2	R2	M1
1	2	3	4	5	6	7	8
1	1	0	1.000000+00	1.130973+02	0.000000+00	0.000000+00	1
2	1	3.000000+00	1.000000+00	7.916813+02	1.130973+02	0.000000+00	
3	1	6.000000+00	1.000000+00	2.148849+03	4.523893+02	0.000000+00	
4	1	9.000000+00	1.000000+00	4.184601+03	1.017875+03	0.000000+00	
5	1	1.200000+01	1.000000+00	6.898936+03	1.809557+03	0.000000+00	
6	1	1.500000+01	1.000000+00	1.029185+04	2.827433+03	0.000000+00	
7	1	1.800000+01	1.000000+00	1.436336+04	4.071503+03	0.000000+00	
8	1	2.100000+01	1.000000+00	1.911344+04	5.541769+03	0.000000+00	
9	1	2.400000+01	1.000000+00	2.454212+04	7.238229+03	0.000000+00	
10	1	2.700000+01	1.000000+00	3.064937+04	9.160883+03	0.000000+00	
11	1	3.000000+01	1.000000+00	3.743521+04	1.130973+04	0.000000+00	
12	1	3.300000+01	1.000000+00	4.489963+04	1.368477+04	0.000000+00	
13	1	3.600000+01	1.000000+00	5.304264+04	1.628601+04	0.000000+00	
14	1	3.900000+01	1.000000+00	6.186423+04	1.911344+04	0.000000+00	
15	1	4.200000+01	1.000000+00	7.136442+04	2.216707+04	0.000000+00	
16	1	4.500000+01	1.000000+00	8.154317+04	2.544689+04	0.000000+00	
17	1	4.800000+01	1.000000+00	9.240051+04	2.895291+04	0.000000+00	
18	1	5.100000+01	1.000000+00	1.039364+05	3.268512+04	0.000000+00	
19	1	5.400000+01	1.000000+00	1.161509+05	3.664353+04	0.000000+00	
20	1	5.700000+01	1.000000+00	1.290440+05	4.082813+04	0.000000+00	
21	1	6.000000+01	1.000000+00	1.426157+05	4.523893+04	0.000000+00	
22	1	6.300000+01	1.000000+00	2.412329+04	4.987592+04	0.000000+00	
23		6.348000+01			5.063883+04		

	I0	I1	I2	I3	IV-31 M7	W0	V7	K7
1	0.CCCCCC+00	0.000000+00	0.CC0000+00	0.000000+00	-1.000000+00	0.000000+00	1.000000+00	7.517799-01
2					-8.819169-01	1.666666-01	1.000000+00	2.482200-01
3					-3.333330-01	3.333333-01	1.000000+00	0.000000+00
4					3.333330-01	3.333333-01	1.000000+00	0.000000+00
5					8.819169-01	1.666666-01	1.000000+00	0.000000+00
6							1.000000+00	0.000000+00
7							1.000000+00	0.000000+00
8							1.000000+00	0.000000+00
	C0							
1	1	2	3	4	5	6	7	8
1	3.710000-04	7.740000-04	7.795000-03	5.024999-03	1.907900-02	2.704000-02	6.212900-02	1.079700-01
2	9.500000-04	1.485000-03	1.087300-02	1.025999-02	3.719000-02	5.638000-02	1.234000-01	2.235500-01
3	1.504300-01	3.260800-01	3.721400-01	3.679200-01	3.819799-01	3.899400-01	4.248900-01	4.613000-01
4	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
5	0.000000+00	0.000000+00	0.000000+00	4.960000-04	2.371000-03	6.854000-03	3.245499-02	0.000000+00
6	1.254300-01	3.152200-01	3.617700-01	1.841009-01	2.893360-01	2.947850-01	3.244129-01	3.208730-01
7	0.000000+00	2.462799-02	1.009000-02	2.598999-03	1.787940-01	7.304400-02	6.574200-02	3.149200-02
8	0.000000+00	0.000000+00	0.000000+00	0.000000+00	2.020000-04	4.999999-06	2.300000-05	2.000000-06
9	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
10	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00
	C0	C3	D4	G5	G6	B2		
1	1	2	3	4	5	6		
1	0.CC0000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00	0.000000+00		
2	0.CC0000+00			0.000000+00	0.000000+00	0.000000+00		
3				0.000000+00	0.000000+00	0.000000+00		
4				0.000000+00	0.000000+00	0.000000+00		
5				0.000000+00	0.000000+00	0.000000+00		
6				0.000000+00	0.000000+00	0.000000+00		
7	STD 8 GROUP - C/L=301 - TEMP=0.025 EV			0.000000+00	0.000000+00	0.000000+00		
8				0.000000+00	0.000000+00	0.000000+00		
	MCNITER ID	ICT	LCT	NB	EPS	EQ	EV	LA
1	3C1025	0	0	C	9.999999-05	0.000000+00	0.000000+00	0.000000+00
1	3C1025	1	77	9.999993-01	9.999999-05	0.000000+00	6.911160-01	6.911160-01
1	3C1025	2	166	9.999992-01	9.999999-05	0.000000+00	8.691541-01	1.257609+00
1	3C1025	3	250	9.999992-01	9.999999-05	0.000000+00	9.213089-01	1.060006+00
1	3C1025	4	327	9.999992-01	9.999999-05	0.000000+00	9.473764-01	1.028293+00
1	3C1025	5	398	9.999992-01	9.999999-05	0.000000+00	9.623368-01	1.015791+00
1	3C1025	6	466	9.999992-01	9.999999-05	0.000000+00	9.715274-01	1.009550+00
1	3C1025	7	531	9.999992-01	9.999999-05	0.000000+00	9.773660-01	1.006009+00
1	3C1025	8	594	9.999991-01	9.999999-05	0.000000+00	9.812321-01	1.003955+00
1	3C1025	9	656	9.999992-01	9.999999-05	0.000000+00	9.838815-01	1.002700+00
1	3C1025	10	715	9.999992-01	9.999999-05	0.000000+00	9.857440-01	1.001893+00
1	3C1025	11	765	9.999992-01	9.999999-05	0.000000+00	9.869991-01	1.001273+00
1	3C1025	12	806	9.999992-01	9.999999-05	0.000000+00	9.878399-01	1.000851+00
1	3C1025	13	841	9.999992-01	9.999999-05	0.000000+00	9.884452-01	1.000612+00
1	3C1025	14	870	9.999991-01	9.999999-05	0.000000+00	9.888789-01	1.000438+00
1	3C1025	15	896	9.999992-01	9.999999-05	0.000000+00	9.892323-01	1.000357+00
1	3C1025	16	918	9.999992-01	9.999999-05	0.000000+00	9.894908-01	1.000261+00
1	3C1025	17	938	9.999991-01	9.999999-05	0.000000+00	9.896919-01	1.000203+00
1	3C1025	18	955	9.999992-01	9.999999-05	0.000000+00	9.898491-01	1.000158+00
1	3C1025	19	968	9.999991-01	9.999999-05	0.000000+00	9.899639-01	1.000116+00
1	3C1025	20	978	9.999992-01	9.999999-05	0.000000+00	9.900443-01	1.000081+00

IV-32

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	6.828215-05	6.832333-05	6.846296-05	6.846296-05	6.832333-05
2	6.744462-05	6.757807-05	6.809903-05	6.893704-05	6.919782-05
3	6.590250-05	6.614389-05	6.712539-05	6.852775-05	6.955248-05
4	6.390196-05	6.424766-05	6.569449-05	6.782933-05	6.927414-05
5	6.149212-05	6.193507-05	6.383002-05	6.660875-05	6.857058-05
6	5.871072-05	5.924265-05	6.156099-05	6.496375-05	6.740238-05
7	5.559192-05	5.620340-05	5.891240-05	6.289360-05	6.579780-05
8	5.217320-05	5.285388-05	5.591477-05	6.042472-05	6.377410-05
9	4.849498-05	4.923365-05	5.260243-05	5.758536-05	6.135486-05
10	4.460069-05	4.538543-05	4.901360-05	5.440851-05	5.856785-05
11	4.053654-05	4.135476-05	4.518996-05	5.093126-05	5.544508-05
12	3.635116-05	3.718966-05	4.117624-05	4.719435-05	5.202246-05
13	3.209530-05	3.294025-05	3.701972-05	4.324170-05	4.833950-05
14	2.782152-05	2.865844-05	3.276977-05	3.911995-05	4.443887-05
15	2.358408-05	2.439762-05	2.847745-05	3.487796-05	4.036598-05
16	1.943854-05	2.021256-05	2.419499-05	3.056633-05	3.616855-05
17	1.544406-05	1.615948-05	1.997542-05	2.623689-05	3.189617-05
18	1.166015-05	1.229639-05	1.587170-05	2.194207-05	2.759985-05
19	8.152440-06	8.684485-06	1.193316-05	1.773315-05	2.333168-05
20	4.995888-06	5.393137-06	8.191802-06	1.365314-05	1.914380-05
21	2.290821-06	2.517387-06	4.578144-06	9.706007-06	1.508829-05
22	2.477777-07	2.794181-07	6.855559-07	5.709761-06	1.119077-05
23	0.000000+00	0.000000+00	0.000000+00	5.046614-06	1.058061-05

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
	IV-33				
1	1.794595-04	1.795059-04	1.796594-04	1.796594-04	1.795059-04
2	1.781954-04	1.783554-04	1.789980-04	1.799978-04	1.803444-04
3	1.754065-04	1.757009-04	1.769348-04	1.786448-04	1.798904-04
4	1.714132-04	1.718409-04	1.736812-04	1.762834-04	1.780261-04
5	1.662930-04	1.668475-04	1.692746-04	1.726474-04	1.750301-04
6	1.601233-04	1.607971-04	1.637849-04	1.679146-04	1.708665-04
7	1.529769-04	1.537604-04	1.572720-04	1.620986-04	1.656136-04
8	1.449380-04	1.458210-04	1.498124-04	1.552802-04	1.593252-04
9	1.360959-04	1.370703-04	1.414913-04	1.475357-04	1.520751-04
10	1.265638-04	1.276090-04	1.324042-04	1.389553-04	1.439456-04
11	1.164387-04	1.175452-04	1.226549-04	1.296375-04	1.350294-04
12	1.058394-04	1.069932-04	1.123543-04	1.196893-04	1.254279-04
13	9.488521-05	9.607214-05	1.016192-04	1.092241-04	1.152501-04
14	8.369787-05	8.490354-05	9.057034-05	9.836085-05	1.046110-04
15	7.239944-05	7.360972-05	7.933012-05	8.722122-05	9.363016-05
16	6.110989-05	6.231104-05	6.802068-05	7.592846-05	8.242914-05
17	4.994478-05	5.112312-05	5.676094-05	6.460454-05	7.112986-05
18	3.901356-05	4.015376-05	4.566306-05	5.336745-05	5.985163-05
19	2.842090-05	2.949925-05	3.482859-05	4.232818-05	4.870799-05
20	1.828503-05	1.924822-05	2.432583-05	3.158065-05	3.780104-05
21	8.735834-06	9.415181-06	1.437054-05	2.176862-05	2.722891-05
22	9.433121-07	1.058518-06	2.442783-06	1.052770-05	1.685326-05
23	0.000000+00	0.000000+00	0.000000+00	8.648969-06	1.518351-05

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	1.460342-04	1.460668-04	1.461744-04	1.461744-04	1.460668-04
2	1.450861-04	1.451996-04	1.456586-04	1.463697-04	1.466236-04
3	1.429296-04	1.431391-04	1.440227-04	1.452387-04	1.461287-04
4	1.397939-04	1.400990-04	1.414188-04	1.432708-04	1.445121-04
5	1.357371-04	1.361334-04	1.378752-04	1.402730-04	1.419749-04
6	1.308197-04	1.313020-04	1.334479-04	1.363853-04	1.384923-04
7	1.250982-04	1.256601-04	1.281842-04	1.316176-04	1.341781-04
8	1.186396-04	1.192738-04	1.221454-04	1.260369-04	1.289256-04
9	1.115170-04	1.122153-04	1.153994-04	1.197037-04	1.229454-04
10	1.038107-04	1.045643-04	1.080222-04	1.126908-04	1.162542-04
11	9.560702-05	9.640665-05	1.000965-04	1.050770-04	1.089268-04
12	8.699715-05	8.783298-05	9.171080-05	9.694811-05	1.010452-04
13	7.807599-05	7.893800-05	8.295787-05	8.839456-05	9.269692-05
14	6.894083-05	6.981886-05	7.393400-05	7.951115-05	8.397426-05
15	5.968983-05	6.057376-05	6.473715-05	7.039521-05	7.497288-05
16	5.042066-05	5.130047-05	5.546554-05	6.114523-05	6.579033-05
17	4.122925-05	4.209491-05	4.621625-05	5.185940-05	5.652457-05
18	3.220960-05	3.305029-05	3.708293-05	4.263383-05	4.727246-05
19	2.345452-05	2.425462-05	2.815916-05	3.356314-05	3.812853-05
20	1.507846-05	1.580611-05	1.949773-05	2.472545-05	2.918043-05
21	7.173812-06	7.701957-06	1.139833-05	1.628888-05	2.053002-05

IV-34

22	7.595009-07	8.512096-07	1.935842-06	7.630284-06	1.207982-05
23	0.000000+00	0.000000+00	0.000000+00	6.126649-06	1.072227-05

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	2.053279-06	2.053744-06	2.055281-06	2.055281-06	2.053744-06
2	2.039843-06	2.041458-06	2.047986-06	2.058112-06	2.061724-06
3	2.009391-06	2.012372-06	2.024933-06	2.042226-06	2.054889-06
4	1.965172-06	1.969511-06	1.988271-06	2.014617-06	2.032268-06
5	1.908006-06	1.913641-06	1.938400-06	1.972508-06	1.996709-06
6	1.838743-06	1.845602-06	1.876104-06	1.917889-06	1.947850-06
7	1.758183-06	1.766172-06	1.802049-06	1.850892-06	1.886590-06
8	1.667263-06	1.676279-06	1.717097-06	1.772457-06	1.813535-06
9	1.567014-06	1.576942-06	1.622201-06	1.683435-06	1.729536-06
10	1.458564-06	1.469278-06	1.518429-06	1.584847-06	1.635526-06
11	1.343126-06	1.354492-06	1.406943-06	1.477801-06	1.532558-06
12	1.221980-06	1.233861-06	1.288983-06	1.363499-06	1.421780-06
13	1.096461-06	1.108714-06	1.165857-06	1.243214-06	1.304422-06
14	9.679357-07	9.804159-07	1.038914-06	1.118275-06	1.181779-06
15	8.377829-07	8.503463-07	9.095327-07	9.900503-07	1.055194-06
16	7.073779-07	7.198812-07	7.790917-07	8.599231-07	9.260379-07
17	5.780752-07	5.903735-07	6.489570-07	7.292742-07	7.956868-07
18	4.512107-07	4.631444-07	5.204558-07	5.994588-07	6.655045-07
19	3.281260-07	3.394615-07	3.948951-07	4.718101-07	5.368258-07
20	2.105046-07	2.207659-07	2.731275-07	3.474574-07	4.108968-07
21	9.984492-08	1.072355-07	1.591931-07	2.287582-07	2.891825-07
22	1.052373-08	1.179578-08	2.686163-08	1.071661-07	1.704321-07
23	0.000000+00	0.000000+00	0.000000+00	8.610466-08	1.513805-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	4.275527-06	4.276453-06	4.279504-06	4.279504-06	4.276453-06
2	4.248228-06	4.251462-06	4.264553-06	4.284800-06	4.292067-06
3	4.185723-06	4.191696-06	4.216909-06	4.251563-06	4.276941-06
4	4.094568-06	4.103267-06	4.140937-06	4.193713-06	4.229104-06
5	3.976429-06	3.987733-06	4.037456-06	4.105779-06	4.154322-06
6	3.833060-06	3.846823-06	3.908096-06	3.991804-06	4.051896-06
7	3.666105-06	3.682145-06	3.754227-06	3.852080-06	3.923690-06
8	3.477505-06	3.495614-06	3.577641-06	3.688565-06	3.770968-06
9	3.269383-06	3.289333-06	3.380309-06	3.503022-06	3.595498-06
10	3.044078-06	3.065617-06	3.164445-06	3.297570-06	3.399226-06
11	2.804097-06	2.826961-06	2.932456-06	3.074511-06	3.184342-06
12	2.552099-06	2.576010-06	2.686916-06	2.836336-06	2.953231-06
13	2.290850-06	2.315522-06	2.430537-06	2.585691-06	2.708451-06

IV-35

14	2.023190-06	2.048334-06	2.166123-06	2.325337-06	2.452696-06
15	1.751994-06	1.777319-06	1.896539-06	2.058116-06	2.188759-06
16	1.480131-06	1.505350-06	1.624661-06	1.786907-06	1.919491-06
17	1.210438-06	1.235260-06	1.353350-06	1.514593-06	1.647763-06
18	9.457182-07	9.698334-07	1.085375-06	1.244004-06	1.376426-06
19	6.887449-07	7.117162-07	8.236003-07	9.779733-07	1.108285-06
20	4.423687-07	4.639423-07	5.694796-07	7.188154-07	8.459655-07
21	2.108806-07	2.262259-07	3.326868-07	4.717867-07	5.926017-07
22	2.231432-08	2.500226-08	5.668730-08	2.190051-07	3.454475-07
23	0.000000+00	0.000000+00	0.000000+00	1.751481-07	3.057663-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLCK FOR EACH GROUP

	1	2	3	4	5
1	3.378756-06	3.379470-06	3.381820-06	3.381820-06	3.379470-06
2	3.357491-06	3.359988-06	3.370103-06	3.385736-06	3.391375-06
3	3.308564-06	3.313178-06	3.332671-06	3.359431-06	3.379041-06
4	3.237035-06	3.243757-06	3.272890-06	3.313654-06	3.340994-06
5	3.144198-06	3.152937-06	3.191401-06	3.244169-06	3.281690-06
6	3.031421-06	3.042066-06	3.089476-06	3.154143-06	3.200588-06
7	2.899982-06	2.912393-06	2.968184-06	3.043793-06	3.099154-06
8	2.751397-06	2.765416-06	2.828926-06	2.914657-06	2.978371-06
9	2.587325-06	2.602776-06	2.673242-06	2.768113-06	2.839630-06
10	2.409594-06	2.426285-06	2.502864-06	2.605821-06	2.684452-06
11	2.220170-06	2.237898-06	2.319679-06	2.429583-06	2.514556-06
12	2.021140-06	2.039690-06	2.125706-06	2.241355-06	2.331814-06
13	1.814681-06	1.833832-06	1.923078-06	2.043213-06	2.138236-06
14	1.603033-06	1.622561-06	1.714002-06	1.837333-06	1.935941-06
15	1.388468-06	1.408148-06	1.500742-06	1.625954-06	1.727131-06
16	1.173266-06	1.192872-06	1.285576-06	1.411354-06	1.514059-06
17	9.596859-07	9.789924-07	1.070778-06	1.195817-06	1.298999-06
18	7.499648-07	7.687331-07	8.585619-07	9.816005-07	1.084216-06
19	5.463050-07	5.642026-07	6.512257-07	7.709714-07	8.719536-07
20	3.514720-07	3.678692-07	4.498870-07	5.657514-07	6.642977-07
21	1.672960-07	1.793591-07	2.625003-07	3.702428-07	4.637980-07
22	1.764877-08	1.977057-08	4.471569-08	1.704270-07	2.682479-07
23	0.000000+00	0.000000+00	0.000000+00	1.357610-07	2.368372-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLCK FOR EACH GROUP

	1	2	3	4	5
1	2.332472-06	2.332915-06	2.334366-06	2.334366-06	2.332915-06
2	2.318623-06	2.320191-06	2.326569-06	2.336368-06	2.339962-06
3	2.286033-06	2.288937-06	2.301254-06	2.318095-06	2.330448-06
4	2.237914-06	2.242152-06	2.260581-06	2.286229-06	2.303463-06
5	2.175109-06	2.180626-06	2.204972-06	2.238169-06	2.261857-06

IV-36

6	2.098527-06	2.105256-06	2.135286-06	2.175991-06	2.205310-06
7	2.009014-06	2.016870-06	2.052234-06	2.099846-06	2.134816-06
8	1.907583-06	1.916468-06	1.956759-06	2.010783-06	2.051037-06
9	1.795346-06	1.805152-06	1.849897-06	1.909723-06	1.954921-06
10	1.673534-06	1.684142-06	1.732817-06	1.797794-06	1.847502-06
11	1.543476-06	1.554758-06	1.606796-06	1.676216-06	1.729949-06
12	1.406590-06	1.418413-06	1.473206-06	1.546320-06	1.603539-06
13	1.264362-06	1.276587-06	1.333502-06	1.409522-06	1.469645-06
14	1.118330-06	1.130816-06	1.189199-06	1.267312-06	1.329721-06
15	9.700627-07	9.826641-07	1.041853-06	1.121228-06	1.185280-06
16	8.211352-07	8.337106-07	8.930392-07	9.728419-07	1.037875-06
17	6.731095-07	6.855184-07	7.443427-07	8.237381-07	8.890819-07
18	5.275244-07	5.396300-07	5.972678-07	6.754715-07	7.404679-07
19	3.858009-07	3.974253-07	4.535216-07	5.296464-07	5.935913-07
20	2.497414-07	2.606119-07	3.133722-07	3.873638-07	4.498499-07
21	1.197662-07	1.280570-07	1.835020-07	2.518590-07	3.110220-07
22	1.268044-08	1.419202-08	3.176022-08	1.131828-07	1.751983-07
23	0.000000+00	0.000000+00	0.000000+00	8.898541-08	1.532755-07

NEUTRON FLUX BY RADIUS AND DIRECTION, BLOCK FOR EACH GROUP

	1	2	3	4	5
1	5.155217-07	5.156097-07	5.158970-07	5.158970-07	5.156097-07
2	5.126281-07	5.129439-07	5.142335-07	5.162036-07	5.169389-07
3	5.056725-07	5.062588-07	5.087546-07	5.121526-07	5.146484-07
4	4.953068-07	4.961639-07	4.999016-07	5.050768-07	5.085617-07
5	4.817068-07	4.828238-07	4.877649-07	4.944631-07	4.992606-07
6	4.650641-07	4.664283-07	4.725277-07	4.807471-07	4.866847-07
7	4.455573-07	4.471520-07	4.543410-07	4.639603-07	4.710476-07
8	4.234015-07	4.252078-07	4.334062-07	4.443301-07	4.524911-07
9	3.988338-07	4.008303-07	4.099446-07	4.220524-07	4.312202-07
10	3.721182-07	3.742812-07	3.842075-07	3.973708-07	4.074580-07
11	3.435414-07	3.458456-07	3.564701-07	3.705483-07	3.814576-07
12	3.134105-07	3.158290-07	3.270303-07	3.418734-07	3.534966-07
13	2.820498-07	2.845545-07	2.962047-07	3.116546-07	3.238742-07
14	2.497964-07	2.523584-07	2.643248-07	2.802174-07	2.929083-07
15	2.164958-07	2.195860-07	2.317336-07	2.479003-07	2.609317-07
16	1.839976-07	1.865869-07	1.987786-07	2.150497-07	2.282869-07
17	1.511469-07	1.537068-07	1.658144-07	1.820176-07	1.953227-07
18	1.187841-07	1.212893-07	1.331645-07	1.491457-07	1.623863-07
19	8.720121-08	8.961980-08	1.012374-07	1.167978-07	1.298239-07
20	5.678112-08	5.908599-08	6.997321-08	8.517681-08	9.793047-08
21	2.742264-08	2.924448-08	4.107745-08	5.504400-08	6.710097-08
22	2.909979-09	3.253831-09	7.203977-09	2.414056-08	3.681898-08
23	0.000000+00	0.000000+00	0.000000+00	1.871612-08	3.190374-08

IV-37

NEUTRON BALANCE, LINE FOR EACH GROUP PLUS LINE FOR SUM

1.FXD SCURCF 2.FISSIONS IN 3.IN SCATT. 4.SELF SCATT. 5.OUT SC ATT. 6.ABS.NEUTS 7.NET LEAK 8.NET BALANCE
 9.ZONE NO. 10.TOT FLUX 11.TOT DENS. 12.RT. FLUX 13.RT. FLOW 14.RT.CURRENT 15.RT.LEAKAGE 16.FISS.NEUTS

	1	2	3	4	5	6	7	8
1	0.000000+00	7.517800-01	-5.370379-05	3.234243+00	6.350649-01	9.566326-03	1.071486-01	1.000071+00
2	0.000000+00	2.482199-01	6.347386-01	2.094443+01	6.701527-01	5.142756-02	1.616777-01	1.000339+00
3	0.000000+00	0.000000+00	6.700980-01	1.940154+01	1.380962-01	4.180420-01	1.142798-01	1.000477+00
4	0.000000+00	0.000000+00	1.401478-01	1.387620-01	1.347620-01	3.787483-03	1.611227-03	1.000092+00
5	0.000000+00	0.000000+00	1.484883-01	4.536943-01	1.153538-01	2.991689-02	3.261359-03	1.000294+00
6	0.000000+00	0.000000+00	1.203679-01	3.651819-01	8.438138-02	3.349735-02	2.526692-03	1.000311+00
7	0.000000+00	0.000000+00	8.759541-02	2.776234-01	3.281712-02	5.316823-02	1.641541-03	1.000359+00
8	0.000000+00	0.000000+00	2.694476-02	6.080256-02	6.150308-03	2.045934-02	3.427730-04	1.000284+00
9	0.000000+00	1.000000+00	1.828327+00	4.487629+01	1.816778+00	6.198651-01	3.924898-01	1.000285+00
	9	10	11	12	13	14	15	16
1	1	2.578524+01	2.578524+01	3.445639-06	2.115937-06	2.115937-06	1.071486-01	2.449598-02
2	1	6.644387+01	6.644387+01	5.413576-06	3.192762-06	3.192762-06	1.616777-01	9.866915-02
3	1	5.362950+01	5.362950+01	3.829261-06	2.256763-06	2.256763-06	1.142798-01	5.831136-01
4	1	7.537280-01	7.537280-01	5.393165-08	3.181803-08	3.181803-08	1.611227-03	7.733250-03
5	1	1.568053+00	1.568053+00	1.093437-07	6.440432-08	6.440432-08	3.261359-03	5.831590-02
6	1	1.238807+00	1.238807+00	8.472656-08	4.989634-08	4.989634-08	2.526692-03	6.984397-02
7	1	8.557715-01	8.557715-01	5.520773-08	3.241664-08	3.241664-08	1.641541-03	1.056022-01
8	1	1.894910-01	1.894910-01	1.155600-08	6.768976-09	6.768976-09	3.427730-04	4.236072-02
9	1	1.504644+02	1.504644+02	1.300324-05	7.750768-06	7.750768-06	3.924898-01	9.901347-01
	1	2	3	4	5	6	7	8
1	0.000000+00	7.517800-01	-5.370379-05	3.234243+00	6.350649-01	9.566326-03	1.071486-01	1.000071+00
2	0.000000+00	2.482199-01	6.347386-01	2.094443+01	6.701527-01	5.142756-02	1.616777-01	1.000339+00
3	0.000000+00	0.000000+00	6.700980-01	1.940154+01	1.380962-01	4.180420-01	1.142798-01	1.000477+00
4	0.000000+00	0.000000+00	1.401478-01	1.387620-01	1.347620-01	3.787483-03	1.611227-03	1.000092+00
5	0.000000+00	0.000000+00	1.484883-01	4.536943-01	1.153538-01	2.991689-02	3.261359-03	1.000294+00
6	0.000000+00	0.000000+00	1.203679-01	3.651819-01	8.438138-02	3.349735-02	2.526692-03	1.000311+00
7	0.000000+00	0.000000+00	8.759541-02	2.776234-01	3.281712-02	5.316823-02	1.641541-03	1.000359+00
8	0.000000+00	0.000000+00	2.694476-02	6.080256-02	6.150308-03	2.045934-02	3.427730-04	1.000284+00
9	0.000000+00	1.000000+00	1.828327+00	4.487629+01	1.816778+00	6.198651-01	3.924898-01	1.000285+00
	9	10	11	12	13	14	15	16
1	0.000000+00	2.578524+01	2.578524+01	3.445639-06	2.115937-06	2.115937-06	1.071486-01	2.449598-02
2	0.000000+00	6.644387+01	6.644387+01	5.413576-06	3.192762-06	3.192762-06	1.616777-01	9.866915-02
3	0.000000+00	5.362950+01	5.362950+01	3.829261-06	2.256763-06	2.256763-06	1.142798-01	5.831136-01
4	0.000000+00	7.537280-01	7.537280-01	5.393165-08	3.181803-08	3.181803-08	1.611227-03	7.733250+03
5	0.000000+00	1.568053+00	1.568053+00	1.093437-07	6.440432-08	6.440432-08	3.261359-03	5.831590-02
6	0.000000+00	1.238807+00	1.238807+00	8.472656-08	4.989634-08	4.989634-08	2.526692-03	6.984397-02
7	0.000000+00	8.557715-01	8.557715-01	5.520773-08	3.241664-08	3.241664-08	1.641541-03	1.056022-01
8	0.000000+00	1.894910-01	1.894910-01	1.155600-08	6.768976-09	6.768976-09	3.427730-04	4.236072-02
9	0.000000+00	1.504644+02	1.504644+02	1.300324-05	7.750768-06	7.750768-06	3.924898-01	9.901347-01

IV-38

NEUTRON BALANCE, LINE FOR EACH GROUP PLUS LINE FOR SUM

	1.FXD SOURCE	2.FISSIONS IN	3.IN SCATT.	4.SELF SCATT.	5.OUT SC ATT.	6.ABS.NEUTS	7.NET LEAK	8.NET BALANCE
	1	2	3	4	5	6	7	8
1	0.000000+00	7.517800-01	0.000000+00	3.234243+00	6.350648-01	9.566326-03	1.071486-01	9.999997-01
2	0.000000+00	2.482199-01	6.350390-01	2.094443+01	6.701527-01	5.142756-02	1.616777-01	9.999988-01
3	0.000000+00	0.000000+00	6.704186-01	1.940154+01	1.380959-01	4.180420-01	1.142798-01	9.999986-01
4	0.000000+00	0.000000+00	1.401607-01	1.387620-01	1.347620-01	3.787483-03	1.611227-03	9.999999-01
5	0.000000+00	0.000000+00	1.485321-01	4.536943-01	1.153538-01	2.991689-02	3.261359-03	9.999998-01
6	0.000000+00	0.000000+00	1.204054-01	3.651819-01	8.438138-02	3.349735-02	2.526692-03	9.999998-01
7	0.000000+00	0.000000+00	8.762691-02	2.776234-01	3.281712-02	5.316823-02	1.641541-03	9.999998-01
8	0.000000+00	0.000000+00	2.695243-02	6.080256-02	6.150310-03	2.045934-02	3.427730-04	9.999998-01
9	0.000000+00	1.000000+00	1.829135+00	4.487629+01	1.816778+00	6.198651-01	3.924898-01	9.999992-01

MATERIAL BUCKLING

1 2.091751-03

STD 8 GROUP - C/L=301 - TEMP=0.025 EV

	MONITOR ID	ICT	LCT	NR	EPS	EQ	EV	LA
1	301025	21	989	9.999992-01	9.999999-05	0.000000+00	9.900443-01	1.000091+00

FINAL PRINT FOLLOWS

	MC	R1	R3	FC	V0	A0
	1	2	3	4	5	6
1	1	0	1.500000+00	2.693394-06	1.130973+02	0.000000+00
2	1	3.000000+00	4.500000+00	2.679569-06	7.916813+02	1.130973+02
3	1	6.000000+00	7.500000+00	2.645988-06	2.148849+03	4.523893+02
4	1	9.000000+00	1.050000+01	2.594765-06	4.184601+03	1.017875+03
5	1	1.200000+01	1.350000+01	2.526439-06	6.898936+03	1.809557+03
6	1	1.500000+01	1.650000+01	2.442019-06	1.029185+04	2.827433+03
7	1	1.800000+01	1.950000+01	2.342418-06	1.436336+04	4.071503+03
8	1	2.100000+01	2.250000+01	2.228791-06	1.911344+04	5.541769+03
9	1	2.400000+01	2.550000+01	2.102410-06	2.454212+04	7.238229+03
10	1	2.700000+01	2.850000+01	1.964695-06	3.064937+04	9.160883+03
11	1	3.000000+01	3.150000+01	1.817183-06	3.743521+04	1.130973+04
12	1	3.300000+01	3.450000+01	1.661515-06	4.489963+04	1.368477+04

IV-39

13	1	3.600000+01	3.750000+01	1.499414-06	5.304264+04	1.628601+04
14	1	3.700000+01	4.050000+01	1.332657-06	6.186423+04	1.911344+04
15	1	4.200000+01	4.350000+01	1.163054-06	7.136442+04	2.216707+04
16	1	4.500000+01	4.650000+01	9.924176-07	8.154317+04	2.544689+04
17	1	4.800000+01	4.950000+01	8.225338-07	9.240051+04	2.895291+04
18	1	5.100000+01	5.250000+01	6.551549-07	1.039364+05	3.268512+04
19	1	5.400000+01	5.550000+01	4.918168-07	1.161509+05	3.664353+04
20	1	5.700000+01	5.850000+01	3.347664-07	1.290440+05	4.082813+04
21	1	6.000000+01	6.150000+01	1.789634-07	1.426157+05	4.523893+04
22	1	6.300000+01	6.324000+01	8.572949-08	2.412329+04	4.987592+04
23		6.348000+01				5.063883+04

	NO							
	1	2	3	4	5	6	7	8
1	6.844554-05	1.795284-04	1.460593-04	2.053666-06	4.276097-06	3.379105-06	2.332443-06	5.154637-07
2	6.815422-05	1.786202-04	1.453059-04	2.043080-06	4.253984-06	3.361622-06	2.320342-06	5.127898-07
3	6.729767-05	1.763789-04	1.434818-04	2.017428-06	4.200604-06	3.319522-06	2.291443-06	5.064503-07
4	6.599605-05	1.729598-04	1.406996-04	1.978310-06	4.119183-06	3.255300-06	2.247333-06	4.967686-07
5	6.425647-05	1.683987-04	1.369888-04	1.926134-06	4.010587-06	3.169638-06	2.188490-06	4.838502-07
6	6.210898-05	1.627648-04	1.324044-04	1.861674-06	3.876414-06	3.063783-06	2.115747-06	4.678721-07
7	5.957668-05	1.561205-04	1.269963-04	1.785630-06	3.718120-06	2.938871-06	2.029870-06	4.489978-07
8	5.668925-05	1.485442-04	1.208276-04	1.698889-06	3.537540-06	2.796339-06	1.931825-06	4.274347-07
9	5.348013-05	1.401228-04	1.139676-04	1.602426-06	3.336697-06	2.637769-06	1.822682-06	4.034117-07
10	4.998665-05	1.309527-04	1.064938-04	1.497325-06	3.117842-06	2.464924-06	1.703633-06	3.771863-07
11	4.624963-05	1.211390-04	9.848974-05	1.384762-06	2.883415-06	2.279717-06	1.575978-06	3.490394-07
12	4.231259-05	1.107931-04	9.004465-05	1.265990-06	2.636015-06	2.084190-06	1.441107-06	3.192733-07
13	3.822328-05	1.000321-04	8.125193-05	1.142321-06	2.378365-06	1.880485-06	1.300487-06	2.882082-07
14	3.402926-05	8.897663-05	7.220790-05	1.015106-06	2.113278-06	1.670820-06	1.155639-06	2.561781-07
15	2.978151-05	7.774842-05	6.301031-05	8.857213-07	1.843614-06	1.457455-06	1.008121-06	2.235263-07
16	2.553200-05	6.646853-05	5.375692-05	7.555392-07	1.572241-06	1.242664-06	8.595092-07	1.906020-07
17	2.133367-05	5.525419-05	4.454392-05	6.259167-07	1.301994-06	1.028704-06	7.113615-07	1.577491-07
18	1.723938-05	4.421560-05	3.546533-05	4.981813-07	1.035680-06	8.178188-07	5.652441-07	1.253175-07
19	1.329797-05	3.344858-05	2.660505-05	3.735442-07	7.758039-07	6.119995-07	4.224405-07	9.356923-08
20	9.533401-06	2.306538-05	1.808661-05	2.537628-07	5.261894-07	4.143406-07	2.851445-07	6.299207-08
21	5.869567-06	1.264793-05	9.639142-06	1.352170-07	2.791341-07	2.189123-07	1.490898-07	3.261252-08
22	3.744555-06	6.361185-06	4.586571-06	6.448946-08	1.314914-07	1.022219-07	6.754358-08	1.434149-08

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