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FORMATION OF TRANSURANIUM
ISOTOPES IN POWER REACTORS

By
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January 1966

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Richland, Washington

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BNWL-140 (Rev. 1)
ISOTOPES SEPARATION
(TID - 4500)

FORMATION OF TRANSURANIUM ISOTOPES IN POWER REACTORS

By

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Advanced Concepts and Analysis Section
Mathematics Department

January 1966

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RICHLAND, WASHINGTON

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In the tables of this report where the isotopic concentrations are given as a function of time after discharge, the load factor is 80 percent and the thermal-to-electrical efficiency is 33.3 percent.

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FORMATION OF TRANSURANIUM ISOTOPES IN POWER REACTORS⁽¹⁾

In recent years there has been an increased interest in the use of transuranium isotopes for special power applications. Moreover, as the civilian power reactor economy expands, a large quantity of such isotopes will be formed in reactors using slightly enriched uranium fuel and, more particularly, in reactors which recycle the higher isotopes they form. This report, consisting mainly of computer printouts, indicates the yields of transuranium isotopes from different fueling methods. Since water reactors will be the predominate type of power reactor for at least a decade, most of the values presented here are derived from simulated water reactors.

The computer used in this study was an IEM 7090. The computer code used was ALTHAEA, developed by Pacific Northwest Laboratory for use in plutonium recycle studies and described in the Hanford report HW-77923^(2,3). The cross section values are based on data taken from the RBU Nuclear Data library (HW-77389)⁽⁴⁾.

The isotopes formed from each of the 24 cases considered in this report appear in the two tables titled "FUEL PROPERTIES" and "PROPERTIES OF SPECIAL PRODUCTS." The fuel enrichments for these cases are shown in Table I, titled "REACTOR TYPES AND FUELING METHODS." These enrichments are such that the reactivity limited fuel lifetime yields an exposure of 24,000 to 25,000 MWd/MT--a goal exposure considered as optimum by recent water reactor studies. In the two tables of properties, half-life periods are given for the more important isotopes, and isotopic formation data, shown in different units so as to aid the reader, are given for fuel burnup at 5,000; 10,000; 15,000; and 20,000 MWd/MT as well as for lifetime.* All fuels are considered as being separated into chemical element groups 120 days after fuel discharge. The concentrations of isotopes and their decay products, along with other data, are tabulated as a function of time. The isotopic concentrations discharged are tabulated as a function of time after discharge. Since concentrations in fuel using a zirconium matrix are expressed in grams per ton having a density equal to that of U²³⁸, all fuels are shown as generating the same amount of heat. This means that the isotopic production rate of one fueling method can be compared with that of another method for the same exposure of MWd/MT. Besides giving the percent of element composition, the tables list the g/MW_e-yr, the thermal watts/MW_e-yr, and the g/MWh (which may be multiplied by \$/g to obtain the fuel cost credit in mills/kWh_e). All data are based on a thermal-to-electrical efficiency of 33 percent.

Case 1000 shows the isotopes formed in a slightly enriched uranium PWR that is patterned after the PWR described in the Westinghouse report (WCAP-2385) titled "1000 MW_e CLOSED-CYCLE WATER REACTOR STUDY." The plutonium recovered is then successively recycled in Cases 1001 through 1003 with supplementary enrichments of U²³⁵.

Cases 1100 through 1103 deal with the boiling water reactor described in the General Electric report (GE-4476) titled "1000 MW_e BOILING WATER PLANT FEASIBILITY STUDY." In these cases, the recycle conditions simulated are the same as those in Cases 1000 through 1003.

Cases 2001 through 2003 show the results obtained by successively recycling plutonium, americium, and U²³⁸ without the use of special encapsulation.

In Cases 3000 through 3003, natural uranium is enriched with plutonium (1.1% Pu²³⁸, 62.0% Pu²³⁹, 22.8% Pu²⁴⁰, 11.0% Pu²⁴¹, and 3.1% Pu²⁴²); in each of these four cases, the fuel element spacing is different--and this affects the formation of isotopes. These different spacings are simulated by using a different constant neutron spectrum.

(1) Except for more up-to-date cross section data, especially the n-2n cross section of U²³⁸, from which Np²³⁷ is formed, all cases in this revision are identical with those in the BNWL-140 report of July 1965.

(2) HW-77923, ALTHAEA (To be published).

(3) BNSA-61, A System of Chained Computer Codes for Reactor Fuel Cycle Analysis, May 1965. Pacific Northwest Laboratory, P. O. Box 999, Richland, Washington. This paper, describing the ALTHAEA code and its applications to fuel cycle analysis, was presented at the American Nuclear Conference On the Application of Computing Methods to Reactor Problems held in Argonne, Illinois on May 17-19, 1965.

(4) HW-77389, Westcott Parameters Derived From the RBU Basic Library for A-4 Cutoff, by R. C. Likala, April 25, 1963.

(5) In this report all units expressed in tons are to be understood as metric tons.

*The accuracy of calculating isotope concentrations as a function of fuel exposure depends on the accuracy of the assumed Mev per fission. In this report, U²³⁵, Pu²³⁹, and Pu²⁴¹ are assumed to have a Mev per fission of 194, 201, and 205 respectively; from the isotope concentrations listed in this report, one can also calculate isotope concentrations as a function of the percent of initial fissile material depleted.

Cases 4000 and 5000 have a constant neutron spectrum, but with variations in the initial plutonium composition. Case 3002 is similar to these cases in that it has the same constant spectrum; it differs from them in its initial plutonium composition.

Case 6000 shows how removing natural uranium increases the formation of transuranium isotopes. It should be mentioned, however, that this method of maximizing plutonium neutron absorption usually increases the fuel-cycle cost.

Cases 7000 and 7001 show how much Np^{237} could be formed if fully enriched uranium were used. (In this report, Np^{237} is considered as a product which must first be isolated from plutonium or uranium and then irradiated to form Pu^{238} . In the Hanford report HW-SA-3140, titled "CALCULATION OF PRODUCTION AND OF INDIFFERENCE PRICING OF TRANSURANIUM ISOTOPES," the relative values of isotopes leading to the formation of transuranium heat sources are discussed at length.)

Case 8000 considers Np^{237} formation in a zoned spectrum reactor using 80 percent enriched uranium in a zirconium matrix. To allow for proper control, the reactor in Case 8000 requires more U^{238} than the reactor in Case 7000.

Case 9000 uses a plutonium enrichment with a small amount of U^{238} for control purposes in a zoned spectrum reactor.

Cases 9800 and 9900 involve target irradiation in a pressurized water reactor. The fuel exposure refers to adjacent fuel rods that have sufficient enrichment to supply excess neutrons to the target material. In these cases, summarized data are printed out in the PROPERTIES OF SPECIAL PRODUCTS table for every 2500 MWd/MU. The data presented at fuel discharge refer only to the target material.

Table II summarizes for each case the Np^{237} , Am^{241} , Am^{243} , Cm^{242} , and Cm^{244} formed 306 days (two Cm^{242} half-life periods) after discharge. The amount of isotopes formed is expressed in grams/MW_e-yr, which may also be interpreted as kilograms produced per year in a 1000 MW_e power plant.

TABLE I
REACTOR TYPES AND FUELING METHODS

Case Number	Reactor	Fuel Enrichment, Weight Percent	Fuel
1000	SPWR ⁽¹⁾	2.92 (U ²³⁵)	Slightly enriched uranium
1001	SPWR	3.12 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1000
1002	SPWR	3.28 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1001
1003	SPWR	3.38 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1002
1100	SEWR ⁽²⁾	2.42 (U ²³⁵)	Slightly enriched uranium
1101	SEWR	2.66 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1100
1102	SEWR	2.87 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1101
1103	SEWR	2.97 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium recycled from Case 1102
2001	SPWR	3.27 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium, americium, and U ²³⁶ recycled from Case 1000
2002	SPWR	3.62 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium, americium, and U ²³⁶ recycled from Case 2001
2003	SPWR	3.87 (U ²³⁵ + Pu)	Slightly enriched uranium, with plutonium, americium, and U ²³⁶ recycled from Case 2002
3000	SPWR with spectrum fixed at (r = 0.05) ⁽³⁾	1.94 (Pu + natural U)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) in natural U
3001	SPWR with spectrum fixed at (r = 0.15)	2.30 (Pu + natural U)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) in natural U
3002	SPWR with spectrum fixed at (r = 0.25)	2.82 (Pu + natural U)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) in natural U
3003	SPWR with spectrum fixed at (r = 0.35)	3.47 (Pu + natural U)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) in natural U
4000	SPWR with spectrum fixed at (r = 0.25)	2.67 (Pu + natural U)	Pu(94% Pu ²³⁹ , 5% Pu ²⁴⁰ , 1% Pu ²⁴¹ , 0% Pu ²⁴²) in natural uranium
5000	SPWR with spectrum fixed at (r = 0.25)	2.99 (Pu + natural U)	Pu(2.1% Pu ²³⁸ , 48.3% Pu ²³⁹ , 24.8% Pu ²⁴⁰ , 15.2% Pu ²⁴¹ , 9.6% Pu ²⁴²) in natural U
6000	SPWR with spectrum fixed at (r = 0.25)	2.44 (Plutonium)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) in zirconium
7000	SPWR with spectrum fixed at (r = 0.25)	3.16 (U ²³⁵)	Fully enriched uranium in zirconium
7001	SPWR with spectrum fixed at (r = 0.25)	3.21 (U ²³⁵)	Fully enriched uranium in zirconium, with uranium recycle from Case 7000
8000	Zone spectrum ⁽⁴⁾	2.34 (U ²³⁵)	Enriched uranium, 80% U ²³⁵ , fueled at 20% theoretical density
9000	Zone spectrum	1.84 (Pu + natural U)	Pu(1.1% Pu ²³⁸ , 62.0% Pu ²³⁹ , 22.8% Pu ²⁴⁰ , 11.0% Pu ²⁴¹ , 3.1% Pu ²⁴²) enriched natural uranium, fueled at 25% of theoretical density
9800	SPWR	5.68 (U ²³⁵)	Am ²⁴¹ target in zirconium. Am ²⁴¹ makes up 0.75% of heavy metal in core
9900	SPWR	3.77 (U ²³⁵)	Np ²³⁷ target in zirconium. Np ²³⁷ makes up 0.75% of heavy metal in core

(1) SPWR, simulated pressurized water reactor, specific power 20 MW/MT.

(2) SEWR, simulated boiling water reactor, specific power 12 MW/MT.

(3) The neutron spectrum is described by the spectral index (r); $r = \phi_{epithermal} / [\phi_{thermal} + b\phi_{epithermal}]$ where b is a flux-shape equal to 1.176.

(4) A zone spectrum reactor is similar to a spectral shift reactor except that the reactor core is made up of discrete zones or regions with different fuel-to-moderator ratios. The moderator is D₂O in all zones.

TABLE II

SUMMARY OF ISOTOPE PRODUCTION

206 days after separations
(326 days after fuel discharges)

Case Number	Np ²³⁷ g/MWe-yr	Pu ²³⁸ ⁽¹⁾ g/MWe-yr	Am ²⁴¹ g/MWe-yr	Am ²⁴³ g/MWe-yr	Am ²⁴³ Am ²⁴¹ + Am ²⁴³	Cm ²⁴² g/MWe-yr	Cm ²⁴⁴ g/MWe-yr	Cm ²⁴⁴ Cm ²⁴² + Cm ²⁴⁴
					(%)			(%)
1000	17.2	0.18	2.83	2.25	44.3	0.13	0.44	77.3
1001	14.5	0.55	6.97	11.39	62.0	0.39	3.92	90.9
1002	13.9	0.74	9.43	20.22	68.2	0.53	7.50	93.4
1003	13.7	0.83	10.76	26.41	71.1	0.59	9.89	94.3
1100	14.8	0.20	3.40	2.51	42.6	0.14	0.47	76.8
1101	13.0	0.50	8.18	11.75	59.0	0.36	3.78	91.3
1102	12.6	0.64	10.79	20.05	65.0	0.46	6.97	93.8
1103	12.5	0.71	12.16	25.83	68.0	0.51	9.11	94.7
2001	27.2	0.64	7.68	12.20	61.4	0.46	4.86	91.4
2002	33.0	0.95	11.17	24.85	69.0	0.68	12.6	94.9
2003	37.4	1.16	13.82	37.13	72.9	0.83	20.2	96.0
3000	4.3	0.59	3.62	13.97	79.5	0.42	2.76	86.7
3001	5.4	0.90	8.19	20.84	71.8	0.65	5.63	89.7
3002	5.6	1.23	14.31	24.75	63.4	0.88	7.59	89.6
3003	5.5	1.56	21.98	27.96	56.0	1.12	9.12	89.1
4000	6.0	0.56	7.20	6.67	48.1	0.40	1.39	77.7
5000	5.3	1.64	19.83	50.45	71.8	1.18	15.36	92.9
6000	0.04	2.00	2.17	65.91	96.8	1.43	51.73	97.3
7000	48.8	24.07 ⁽²⁾	0.05	1.68	96.7	0.01	2.30	99.4
7001	68.7	32.99 ⁽³⁾	0.07	1.73	96.3	0.02	1.98	99.2
8000	72.3	23.52 ⁽⁴⁾	1.11	4.47	80.08	0.15	1.81	92.3
9000	6.8	1.21 ⁽⁵⁾	5.60	29.8	84.2	0.87	16.79	95.1
9800	-----	161.34 ⁽⁶⁾	-----	5.00	5.43	6.52	1.42	17.89
9900	258.0	77.3 ⁽⁶⁾	-----	-----	-----	-----	-----	-----

(1) Plutonium²³⁸ produced from Cm²⁴² decay (α), purity $\left[\text{Pu}^{238} / (\text{Pu}^{238} + \text{Pu}^{240}) \right]$ is usually above 80 percent.

(2) Plutonium²³⁸ produced from Np²³⁷; purity 65%.

(3) Plutonium²³⁸ produced from Np²³⁷; purity 68%.

(4) Plutonium²³⁸ produced from Np²⁴²; purity 15%.

(5) Plutonium²³⁸ produced from Cm²⁴² decay both in and out of the reactor (target makes up 7 percent of fuel volume).

(6) Plutonium²³⁸ produced from Np²³⁷; purity 85% (target makes up 7 percent of fuel volume).

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1000

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24686.0	INITIAL FLUX, N/SO CM-SEC	1.63E 13	FISSILE RATIO	0.60	U235 IN TAILS/U235 ENR	0.42
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SO CM-SEC	1.56E 13	INITIAL CONV RATIO	0.59	KG NATURAL/KG PRODUCED	5.883
RESIDENCE TIME, YRS	3.38	MAX FLUX/MIN FLUX	1.09	NONFUEL X-SECT 1/CM	0.065	KG NAT U/MWE-YR	100.251
TOTAL ENRICHMENT	2.92	AVG NEUTRON TEMP, C	387.	FUEL DENSITY	9.26	AVERAGE R	0.251
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.69	WATTS/CC	185.12	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.284	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.000	REACTIVITY CHANGE/MWD, MK	0.0083

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	681	0	0	476	0	0.	1338	0	1219	0
AVERAGE	0.	701	0	0	483	0	0.	1199	0	1137	0
FINAL	0.	706	0	0	492	0	0.	1154	0	1116	0
ABSORPTION-INITIAL	42.19	767	276	182	587	130	12.09	2133	2909	1706	414
AVERAGE	46.60	792	305	196	602	113	13.28	1875	1838	1575	458
FINAL	47.57	798	312	200	617	101	13.49	1797	1271	1542	456
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.329	0.	0.	-0.	0.	-0.	0.
AVERAGE	0.	0.000	0.	0.	0.213	0.	0.	0.112	0.	0.012	0.
FINAL	0.	0.000	0.	0.	0.125	0.	0.	0.159	0.	0.030	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.406	-0.	0.275	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.266	0.005	0.299	0.175	0.034	0.017	0.001
FINAL	0.000	0.000	0.000	0.000	0.156	0.008	0.300	0.248	0.062	0.041	0.003
ALPHA	0.	0.126	0.	0.	0.233	0.	0.	0.594	0.	0.403	0.
AVERAGE	0.	0.130	0.	0.	0.246	0.	0.	0.564	0.	0.384	0.
FINAL	0.	0.130	0.	0.	0.254	0.	0.	0.557	0.	0.382	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	56.5	0.	10.2	30.0	0.	3.3	0.
ETA	0.	2.21	0.	0.	1.95	0.	1.85	0.	0.	2.19	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.47	0.	1.27	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.591	0.	-0.	0.

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*** FUEL PROPERTIES ***

CASE NUMBER 1000

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	2.92	0.	0.	-0.	0.	-0.	0.
FINAL	0.	0.00	0.	0.	1.07	0.	0.	0.59	0.	0.12	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	2.9	-0.	97.1	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	1.1	0.3	98.5	62.6	22.2	12.2	3.0
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.2698	-0.	8.9897	-0.	-0.	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0989	0.0304	8.7921	0.0547	0.0194	0.0107	0.0026
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.1	-5460.2	972.5	-6312.7	1747.1	620.9	342.8	84.6
GM/MWE-YR	0.0	0.0	0.0	0.0	-819.0	145.9	-946.9	262.1	93.1	51.4	12.7
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0935	0.0167	-0.1081	0.0299	0.0106	0.0059	0.0014
GM/TON	0.0	0.0	0.0	0.5	-18463.9	3288.5	-21346.6	5907.9	2099.6	1159.0	286.0
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.1	3160.2	972.5	280916.	1747.1	620.9	342.8	84.6
GM/MWE-YR	0.	0.0	0.0	0.0	474.0	145.9	42136.	262.	93.	51.	13.
GM/TON	0.	0.0	0.0	0.5	10686.3	3288.5	949925.	5907.9	2099.6	1159.0	286.0

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1000

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24686.0 INITIAL ENRICH. 2.92 POWER DENS, MW/T 0. AV. NEUTRON TEMPERATURE, C 387.
 RESIDENCE TIME, YRS 3.38 AVERAGE R 0.251 KW/GRAMS FISSILE 0.69 AVERAGE FLUX, NEUT/SQ CM-SEC 1.56E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	197.37	113.42	68.16	IN U-233	-0.	0.00	0.00
FROM PU-239	-0.	70.61	103.01	IN U-234	-0.	0.00	0.00
FROM PU-241	-0.	8.03	20.36	IN U-238	59.98	59.43	52.21
TOTAL	197.37	192.06	191.52	IN PU-240	-0.	6.72	10.78
				TOTAL	59.98	66.15	62.99
NET FROM U-238	14.15	13.67	13.53				
NET FROM U-238	0.	0.	0.				
TOTAL	211.53	205.73	205.06				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.98	1.36
IN U-235	81.09	46.65	28.00	IN PU-242	-0.	0.17	0.52
IN PU-239	-0.	24.51	35.70	IN SPECIAL PRODUCTS	-0.	0.38	0.96
IN PU-241	-0.	2.65	6.72	TOTAL	-0.	1.53	2.84
TOTAL	81.09	73.82	70.43				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	4.60	4.20	3.67
IN PU-239	-0.	13.76	19.89	IN OTHER F.P.	0.	9.42	12.28
TOTAL	-0.	13.76	19.89	IN STRUCT. + MOD. + IMPUR.	9.51	8.67	7.58
				CONTROL + LEAKAGE	16.21	15.77	15.72
				TOTAL	30.32	38.05	39.25
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL	21.23	0.	-0.03
IN U-235	18.91	11.41	7.11	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	-0.	1.01	2.56	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	18.91	12.43	9.68	TOTAL ABSORPTION + LEAKAGE	211.53	205.73	205.06
TOTAL FISSILE ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	59.98	66.15	62.99

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	245	1553	476	7172	18	1255	14	406	0
AVERAGE	248	1507	497	7148	18	1251	13	403	0
FINAL	251	1507	518	7130	18	1248	13	401	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	0.4242	0.0066	0.0009	0.0000	0.0005	0.0000	0.0000	0.0145	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	100.0	87.0	12.4	0.5	94.1	0.1	5.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	66.9	1.0	0.1	0.0	0.1	0.0	0.0	2.3	-0.
GM/MWE-YR	10.04	0.16	0.02	0.00	0.01	0.00	0.00	0.34	-0.
GM/MWH	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.
GM/TON	45.8	0.7	0.1	0.0	0.1	0.0	0.0	1.6	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	1.3	0.0	0.0	0.2	0.

EXPOSURE 10000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1000		
ISOTOPES		NP237	AM241	AM243.	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		245	1953	476	7172	18	1255	14	406	0
AVERAGE		249	1507	512	7136	18	1249	13	401	0
FINAL		252	1509	536	7120	18	1247	13	400	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL		0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		1.1010	0.0533	0.0174	0.0005	0.0070	0.0000	0.0012	0.0722	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		100.0	75.0	24.3	0.7	85.6	0.2	14.2	100.0	0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		86.8	4.2	1.4	0.0	0.6	0.0	0.1	5.7	-0.
GM/MWE-YR		13.03	0.63	0.21	0.01	0.08	0.00	0.01	0.85	-0.
GM/MWH		0.0015	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	-0.
GM/TON		119.0	5.8	1.9	0.1	0.8	0.0	0.1	7.8	-0.
WATTS/MWE-YR		0.	0.1	0.0	0.0	10.0	0.0	0.0	0.5	0.

EXPOSURE 15000.0 MWH/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 1000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		245	1553	476	7172	18	1255	14	406	0
AVERAGE		250	1507	521	7130	18	1248	13	401	0
FINAL		252	1506	543	7122	18	1247	13	400	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL		0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		1.9297	0.1519	0.0837	0.0018	0.0275	0.0001	0.0091	0.1940	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		100.0	64.2	35.1	0.8	75.1	0.2	24.7	100.0	0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0000	0.0000	0.0000	0.0033	0.0000	0.0000	0.0001	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		101.5	8.0	4.4	0.1	1.4	0.0	0.5	10.2	-0.
GM/MWE-YR		15.22	1.20	0.66	0.01	0.22	0.00	0.07	1.53	-0.
GM/MWH		0.0017	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	-0.
GM/TON		208.5	16.4	9.0	0.2	3.0	0.0	1.0	21.0	-0.
WATTS/MWE-YR		0.	0.1	0.0	0.0	26.0	0.0	0.2	0.9	0.

EXPOSURE 20000.0 MW/D/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 1000		
ISOTOPIES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	245	1553	476	7172	18	1255	14	406	0
AVERAGE	250	1506	527	7129	18	1248	13	400	0
FINAL	252	1499	544	7129	18	1248	13	400	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	2.8528	0.2894	0.2387	0.0039	0.0646	0.0003	0.0368	0.3995	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	54.6	44.7	0.7	63.7	0.3	36.0	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0078	0.0000	0.0001	0.0002	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	112.5	11.4	9.4	0.2	2.5	0.0	1.5	15.8	-0.
GM/MWE-YR	16.88	1.71	1.41	0.02	0.38	0.00	0.22	2.36	-0.
GM/MWH	0.0019	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0003	-0.
GM/TON	308.2	31.3	25.8	0.4	7.0	0.0	4.0	43.2	-0.
WATTS/MWE-YR	0.	0.2	0.0	0.0	45.9	0.0	0.6	1.3	0.

EXPOSURE 24686.0 MW/D/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 1000		
ISOTOPIES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	245	1553	476	7172	18	1255	14	406	0
AVERAGE	250	1504	530	7130	18	1248	13	400	0
FINAL	251	1491	541	7137	18	1249	13	401	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	3.7669	0.4353	0.4934	0.0062	0.1126	0.0006	0.0991	0.6797	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	46.8	52.6	0.7	53.2	0.3	46.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0135	0.0000	0.0003	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	120.4	13.9	15.8	0.2	3.6	0.0	3.2	21.7	-0.
GM/MWE-YR	18.05	2.09	2.36	0.03	0.54	0.00	0.48	3.26	-0.
GM/MWH	0.0021	0.0002	0.0003	0.0000	0.0001	0.0000	0.0001	0.0004	-0.
GM/TON	407.0	47.0	53.3	0.7	12.2	0.1	10.7	73.4	-0.
WATTS/MWE-YR	0.	0.2	0.0	0.0	64.7	0.0	1.3	1.8	0.

GRADED FINAL K 1.083 *** AFTER DISCHARGE,BEFORE SEPARATION *** CASE NUMBER 1000

EXPOSURE 24686.0 MWD/Y POWER DENS 25.00 MW/T RESIDENCE TIME 3.38 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER REACTOR DISCHARGE	UNITS OF 0.45	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
YEAR HALF-LIFE	DAYS	*** GM/TON ***										
0.	0.	3288.54	406.99	73.43	5907.9	2099.6	1159.0	286.0	47.04	53.31	12.16	10.71
0.09	15.0	3288.54	406.99	74.16	5907.9	2099.7	1156.5	286.0	49.57	53.31	11.41	10.69
0.18	30.0	3288.54	406.99	74.84	5907.9	2099.7	1154.0	286.0	52.09	53.31	10.71	10.68
0.28	45.0	3288.54	406.99	75.48	5907.9	2099.7	1151.4	286.0	54.61	53.31	10.05	10.66
0.37	60.0	3288.54	407.00	76.08	5907.9	2099.7	1148.9	286.0	57.13	53.31	9.42	10.64
0.55	90.0	3288.54	407.01	77.16	5907.9	2099.8	1143.9	286.0	62.14	53.31	8.30	10.61
0.74	120.0	3288.54	407.01	78.10	5907.9	2099.8	1138.9	286.0	67.13	53.31	7.30	10.57
0.92	150.0	3288.54	407.02	78.92	5907.9	2099.8	1133.9	286.0	72.10	53.31	6.43	10.54
1.10	180.0	3288.54	407.03	79.64	5907.9	2099.9	1129.0	286.0	77.04	53.31	5.66	10.50
2.21	360.0	3288.54	407.10	82.36	5907.9	2100.1	1099.7	286.0	106.25	53.31	2.63	10.30
4.41	720.0	3288.54	407.30	83.78	5907.9	2100.4	1043.4	286.0	162.33	53.30	0.57	9.91
6.13	1000.0	3288.54	407.51	83.68	5907.9	2100.7	1001.6	286.0	203.90	53.30	0.17	9.62

*** GM/MWE-YEAR ***												
0.	0.	146.116	18.083	3.263	262.50	93.29	51.50	12.71	2.090	2.369	0.540	0.476
0.09	15.0	146.116	18.083	3.295	262.50	93.29	51.39	12.71	2.202	2.369	0.507	0.475
0.18	30.0	146.116	18.083	3.325	262.50	93.29	51.27	12.71	2.315	2.369	0.476	0.474
0.28	45.0	146.116	18.084	3.354	262.50	93.29	51.16	12.71	2.427	2.369	0.446	0.474
0.37	60.0	146.116	18.084	3.380	262.50	93.29	51.05	12.71	2.538	2.369	0.419	0.473
0.55	90.0	146.116	18.084	3.428	262.50	93.30	50.83	12.71	2.761	2.369	0.369	0.471
0.74	120.0	146.116	18.084	3.470	262.50	93.30	50.60	12.71	2.983	2.369	0.324	0.470
0.92	150.0	146.116	18.085	3.507	262.50	93.30	50.38	12.71	3.203	2.369	0.286	0.468
1.10	180.0	146.116	18.085	3.539	262.50	93.30	50.16	12.71	3.423	2.369	0.251	0.467
2.21	360.0	146.116	18.088	3.659	262.50	93.31	48.86	12.71	4.721	2.368	0.117	0.458
4.41	720.0	146.116	18.097	3.723	262.50	93.33	46.36	12.71	7.213	2.368	0.025	0.440
6.13	1000.0	146.116	18.107	3.718	262.50	93.34	44.50	12.71	9.060	2.368	0.008	0.427

GRADED FINAL K 1.083 *** AFTER DISCHARGE,BEFORE SEPARATION *** CASE NUMBER 1000

TIME AFTER REACTOR DISCHARGE	UNITS OF 0.45	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
YEAR HALF-LIFE	DAYS	*** GM/MWH ***										
0.	0.	0.0167	0.0021	0.0004	0.0299	0.0106	0.0059	0.0014	0.0002	0.0003	0.0001	0.0001
0.09	15.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0059	0.0014	0.0003	0.0003	0.0001	0.0001
0.18	30.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0058	0.0014	0.0003	0.0003	0.0001	0.0001
0.28	45.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0058	0.0014	0.0003	0.0003	0.0001	0.0001
0.37	60.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0058	0.0014	0.0003	0.0003	0.0000	0.0001
0.55	90.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0058	0.0014	0.0003	0.0003	0.0000	0.0001
0.74	120.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0058	0.0014	0.0003	0.0003	0.0000	0.0001
0.92	150.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0057	0.0014	0.0004	0.0003	0.0000	0.0001
1.10	180.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0057	0.0014	0.0004	0.0003	0.0000	0.0001
2.21	360.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0056	0.0014	0.0005	0.0003	0.0000	0.0001
4.41	720.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0053	0.0014	0.0008	0.0003	0.0000	0.0001
6.13	1000.0	0.0167	0.0021	0.0004	0.0299	0.0106	0.0051	0.0014	0.0010	0.0003	0.0000	0.0000

*** WATTS/MWE-YEAR ***												
0.	0.	0.	0.	1.8271	0.	0.	0.	0.	0.023	0.	64.85	1.332
0.09	15.0	0.	0.	1.8452	0.	0.	0.	0.	0.024	0.	60.85	1.330
0.18	30.0	0.	0.	1.8622	0.	0.	0.	0.	0.025	0.	57.09	1.328
0.28	45.0	0.	0.	1.8781	0.	0.	0.	0.	0.027	0.	53.56	1.326
0.37	60.0	0.	0.	1.8929	0.	0.	0.	0.	0.028	0.	50.25	1.324
0.55	90.0	0.	0.	1.9198	0.	0.	0.	0.	0.030	0.	44.23	1.320
0.74	120.0	0.	0.	1.9432	0.	0.	0.	0.	0.033	0.	38.94	1.315
0.92	150.0	0.	0.	1.9638	0.	0.	0.	0.	0.035	0.	34.28	1.311
1.10	180.0	0.	0.	1.9816	0.	0.	0.	0.	0.038	0.	30.17	1.307
2.21	360.0	0.	0.	2.0492	0.	0.	0.	0.	0.052	0.	14.04	1.282
4.41	720.0	0.	0.	2.0846	0.	0.	0.	0.	0.079	0.	3.04	1.233
6.13	1000.0	0.	0.	2.0820	0.	0.	0.	0.	0.100	0.	0.92	1.196

GRADED FINAL K 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 1000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***											
0.	0.34	100.00	0.77	62.02	22.04	12.17	3.00	46.87	53.13	53.18	46.82
0.09	0.34	100.00	0.78	62.03	22.05	12.14	3.00	48.18	51.82	51.63	48.37
0.18	0.34	100.00	0.79	62.04	22.05	12.12	3.00	49.42	50.58	50.07	49.93
0.28	0.34	100.00	0.79	62.05	22.05	12.09	3.00	50.60	49.40	48.52	51.48
0.37	0.34	100.00	0.80	62.07	22.06	12.07	3.00	51.73	48.27	48.97	53.03
0.55	0.34	100.00	0.81	62.09	22.07	12.02	3.01	53.82	46.18	43.89	56.11
0.74	0.34	100.00	0.82	62.12	22.08	11.98	3.01	55.74	44.26	40.85	59.15
0.92	0.34	100.00	0.83	62.14	22.09	11.93	3.01	57.49	42.51	37.89	62.11
1.10	0.34	100.00	0.84	62.17	22.10	11.88	3.01	59.10	40.90	35.01	64.99
2.21	0.34	100.00	0.87	62.35	22.16	11.61	3.02	66.59	33.41	20.35	79.65
4.41	0.34	100.00	0.89	62.71	22.29	11.07	3.04	75.28	24.72	5.44	94.56
6.13	0.34	100.00	0.89	62.98	22.40	10.88	3.05	79.28	20.72	1.77	98.23

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1000

EXPOSURE 24686.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.38 YNS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
			U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.	3189.89	931794.1	386.66	75.76	5730.6	2036.8	1104.7	277.5	0.	0.
0.83	135.0	15.0	3189.89	931794.1	386.66	75.73	5730.6	2036.8	1102.3	277.5	0.00	2.42
1.00	163.0	43.0	3189.89	931794.1	386.66	75.69	5730.6	2036.8	1097.8	277.5	0.00	6.91
2.00	326.0	206.0	3189.89	931794.1	386.66	75.42	5730.6	2036.8	1072.0	277.5	0.01	32.71
3.00	489.0	369.0	3189.89	931794.1	386.66	75.16	5730.6	2036.8	1046.8	277.5	0.04	57.88
4.00	652.0	532.0	3189.89	931794.1	386.66	74.90	5730.6	2036.8	1022.2	277.5	0.09	82.44
5.00	815.0	695.0	3189.89	931794.1	386.66	74.64	5730.6	2036.8	998.2	277.5	0.16	106.41
6.00	978.0	858.0	3189.89	931794.1	386.66	74.38	5730.6	2036.8	974.7	277.5	0.24	129.79
7.00	1141.0	1021.0	3189.89	931794.1	386.66	74.12	5730.6	2036.8	951.8	277.5	0.33	152.61

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
			0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	63.77	50.64	0.	0.	6.94	10.04	0.	0.
0.83	135.0	15.0	63.77	50.64	0.00	0.00	6.51	10.03	0.43	0.02
1.00	163.0	43.0	63.76	50.64	0.01	0.00	5.78	10.00	1.16	0.05
2.00	326.0	206.0	63.72	50.64	0.05	0.00	2.89	9.82	4.04	0.22
3.00	489.0	369.0	63.68	50.64	0.10	0.00	1.45	9.65	5.47	0.39
4.00	652.0	532.0	63.63	50.64	0.14	0.01	0.72	9.48	6.17	0.56
5.00	815.0	695.0	63.59	50.64	0.18	0.01	0.36	9.32	6.51	0.73
6.00	978.0	858.0	63.55	50.63	0.23	0.01	0.18	9.16	6.66	0.89
7.00	1141.0	1021.0	63.50	50.63	0.27	0.01	0.09	9.00	6.73	1.05

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 1000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	141.73	41401.42	17.18	3.37	254.62	90.50	49.09	12.33	0.	0.
0.83	135.0	15.0	141.73	41401.42	17.18	3.36	254.62	90.50	48.98	12.33	0.00	0.11
1.00	163.0	43.0	141.73	41401.42	17.18	3.36	254.62	90.50	48.78	12.33	0.00	0.31
2.00	326.0	206.0	141.73	41401.42	17.18	3.35	254.62	90.50	47.63	12.33	0.00	1.45
3.00	489.0	369.0	141.73	41401.42	17.18	3.34	254.62	90.50	46.51	12.33	0.00	2.57
4.00	652.0	532.0	141.73	41401.42	17.18	3.33	254.62	90.50	45.42	12.33	0.00	3.66
5.00	815.0	695.0	141.73	41401.42	17.18	3.32	254.62	90.50	44.35	12.33	0.01	4.73
6.00	978.0	858.0	141.73	41401.42	17.18	3.30	254.62	90.50	43.31	12.33	0.01	5.77
7.00	1141.0	1021.0	141.73	41401.42	17.18	3.29	254.62	90.50	42.29	12.33	0.01	6.78

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	2.83	2.25	0.	0.	0.31	0.45	0.	0.
0.83	135.0	15.0	2.83	2.25	0.00	0.0000	0.29	0.45	0.02	0.00
1.00	163.0	43.0	2.83	2.25	0.00	0.0000	0.26	0.44	0.05	0.00
2.00	326.0	206.0	2.83	2.25	0.00	0.0001	0.13	0.44	0.18	0.01
3.00	489.0	369.0	2.83	2.25	0.00	0.0002	0.06	0.43	0.24	0.02
4.00	652.0	532.0	2.83	2.25	0.01	0.0003	0.03	0.42	0.27	0.02
5.00	815.0	695.0	2.83	2.25	0.01	0.0004	0.02	0.41	0.29	0.03
6.00	978.0	858.0	2.82	2.25	0.01	0.0005	0.01	0.41	0.30	0.04
7.00	1141.0	1021.0	2.82	2.25	0.01	0.0006	0.00	0.40	0.30	0.05

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 1000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0056	0.0014	0.	0.
0.83	135.0	15.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0056	0.0014	0.0000	0.0000
1.00	163.0	43.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0056	0.0014	0.0000	0.0000
2.00	326.0	206.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0054	0.0014	0.0000	0.0002
3.00	489.0	369.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0053	0.0014	0.0000	0.0003
4.00	652.0	532.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0052	0.0014	0.0000	0.0004
5.00	815.0	695.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0051	0.0014	0.0000	0.0005
6.00	978.0	858.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0049	0.0014	0.0000	0.0007
7.00	1141.0	1021.0	0.0162	+0.3479	0.0020	0.0004	0.0290	0.0103	0.0048	0.0014	0.0000	0.0008

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0003	0.0003	0.	0.	0.0000	0.0001	0.	0.
0.83	135.0	15.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
1.00	163.0	43.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
2.00	326.0	206.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3.00	489.0	369.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4.00	652.0	532.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5.00	815.0	695.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6.00	978.0	858.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.00	1141.0	1021.0	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1000

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	1.8850	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	1.8843	0.	0.	0.	0.	0.	0.001
1.00	163.0	43.0	0.	0.	0.	1.8832	0.	0.	0.	0.	0.	0.003
2.00	326.0	206.0	0.	0.	0.	1.8767	0.	0.	0.	0.	0.	0.016
3.00	489.0	369.0	0.	0.	0.	1.8702	0.	0.	0.	0.	0.	0.028
4.00	652.0	532.0	0.	0.	0.	1.8637	0.	0.	0.	0.	0.	0.040
5.00	815.0	695.0	0.	0.	0.	1.8572	0.	0.	0.	0.	0.	0.052
6.00	978.0	858.0	0.	0.	0.	1.8508	0.	0.	0.	0.	0.	0.063
7.00	1141.0	1021.0	0.	0.	0.	1.8444	0.	0.	0.	0.	0.	0.075

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.031	0.	0.	0.	36.99	1.290	0.	0.
0.83	135.0	15.0	0.031	0.	0.	0.	34.71	1.248	0.0107	0.
1.00	163.0	43.0	0.031	0.	0.	0.	30.81	1.244	0.0288	0.
2.00	326.0	206.0	0.031	0.	0.	0.	15.41	1.222	0.1005	0.
3.00	489.0	369.0	0.031	0.	0.	0.	7.70	1.201	0.1360	0.
4.00	652.0	532.0	0.031	0.	0.	0.	3.85	1.180	0.1535	0.
5.00	815.0	695.0	0.031	0.	0.	0.	1.93	1.159	0.1619	0.
6.00	978.0	858.0	0.031	0.	0.	0.	0.96	1.139	0.1658	0.
7.00	1141.0	1021.0	0.031	0.	0.	0.	0.48	1.119	0.1675	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1000

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.34	99.66	100.00	0.82	62.12	22.08	11.98	3.01	100.00	100.00
0.83	135.0	15.0	0.34	99.66	100.00	0.82	62.13	22.08	11.95	3.01	100.00	100.00
1.00	163.0	43.0	0.34	99.66	100.00	0.82	62.17	22.09	11.91	3.01	100.00	100.00
2.00	326.0	206.0	0.34	99.66	100.00	0.82	62.34	22.16	11.66	3.02	100.00	100.00
3.00	489.0	369.0	0.34	99.66	100.00	0.82	62.51	22.22	11.42	3.03	100.00	100.00
4.00	652.0	532.0	0.34	99.66	100.00	0.82	62.68	22.28	11.18	3.03	100.00	100.00
5.00	815.0	695.0	0.34	99.66	100.00	0.82	62.85	22.34	10.95	3.04	100.00	100.00
6.00	978.0	858.0	0.34	99.66	100.00	0.82	63.02	22.40	10.72	3.05	100.00	100.00
7.00	1141.0	1021.0	0.34	99.66	100.00	0.82	63.18	22.45	10.49	3.06	100.00	100.00

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	55.74	44.26	100.00	100.00	40.85	59.15	0.	0.
0.83	135.0	15.0	55.74	44.26	100.00	100.00	39.36	60.64	96.35	3.65
1.00	163.0	43.0	55.73	44.27	100.00	100.00	36.63	63.37	96.15	3.85
2.00	326.0	206.0	55.72	44.28	100.00	100.00	22.73	77.27	94.82	5.18
3.00	489.0	369.0	55.70	44.30	100.00	100.00	13.02	86.98	93.31	6.69
4.00	652.0	532.0	55.69	44.31	100.00	100.00	7.08	92.92	91.68	8.32
5.00	815.0	695.0	55.67	44.33	100.00	100.00	3.73	96.27	89.97	10.03
6.00	978.0	858.0	55.66	44.34	100.00	100.00	1.94	98.06	88.25	11.75
7.00	1141.0	1021.0	55.64	44.36	100.00	100.00	0.99	99.01	86.54	13.46

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 1000

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 410.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1001

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24404.0	INITIAL FLUX, N/SO CM-SEC	1.16E 13	FISSILE RATIO	0.63	U235 IN TAILS/U235 ENR	0.39
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SO CM-SEC	6.35E 12	INITIAL CONV RATIO	0.59	KG NATURAL/KG PRODUCED	4.893
RESIDENCE TIME, YRS	3.34	MAX FLUX/MIN FLUX	2.25	NONFUEL X-SECT 1/CM	0.071	KG NAT U/MWE-YR	101.116
TOTAL ENRICHMENT	3.12	AVG NEUTRON TEMP, C	392.	FUEL DENSITY	9.26	AVERAGE R	0.295
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.64	WATTS/CC	185.10	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.199	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.009	REACTIVITY CHANGE/MWD, MK	0.0078

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	734	0	0	467	0	0.	1176	0	1093	0
AVERAGE	0.	733	0	0	478	0	0.	1153	0	1088	0
FINAL	0.	728	0	0	488	0	0.	1141	0	1089	0
ABSORPTION-INITIAL	54.00	832	355	217	587	173	16.60	1837	1435	1507	527
AVERAGE	53.76	832	354	217	602	140	15.39	1798	1317	1499	507
FINAL	52.38	825	345	214	616	120	14.90	1776	1201	1502	475
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.271	0.	0.	0.157	0.	0.027	0.
AVERAGE	0.	0.000	0.	0.	0.192	0.	0.	0.177	0.	0.041	0.
FINAL	0.	0.000	0.	0.	0.126	0.	0.	0.185	0.	0.052	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.340	-0.	0.353	0.246	0.068	0.037	0.003
AVERAGE	0.000	0.000	0.000	0.000	0.241	0.005	0.345	0.276	0.080	0.057	0.006
FINAL	0.000	0.000	0.000	0.000	0.159	0.007	0.330	0.288	0.088	0.072	0.009
ALPHA	INITIAL	0.	0.134	0.	0.	0.257	0.	0.	0.562	0.	0.379
AVERAGE	0.	0.134	0.	0.	0.260	0.	0.	0.559	0.	0.378	0.
FINAL	0.	0.133	0.	0.	0.262	0.	0.	0.557	0.	0.379	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	41.4	0.	10.5	39.0	0.	9.1	0.
ETA	0.	2.21	0.	0.	1.93	0.	0.	1.85	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.98	0.	1.34	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.483	0.	0.109	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1001

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	2.44	0.	0.	0.57	0.	0.11	0.
FINAL	0.	0.00	0.	0.	1.09	0.	0.	0.69	0.	0.21	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	2.5	-0.	97.5	63.0	22.3	11.6	3.0
FINAL	100.0	0.0	100.0	0.0	1.1	0.3	98.6	53.5	24.2	15.8	6.5
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.2263	-0.	8.9502	0.0531	0.0189	0.0099	0.0026
FINAL	0.0000	0.0000	0.0000	0.0000	0.1005	0.0236	8.7645	0.0643	0.0292	0.0192	0.0079
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.7	4062.7	762.1	-6002.1	364.2	335.1	299.4	171.4
GM/MWE-YR	0.0	0.0	0.0	0.1	609.4	114.3	-900.3	54.6	50.3	44.9	25.7
GM/MMH	0.0000	0.0000	0.0000	0.0000	-0.0696	0.0130	-0.1028	0.0062	0.0097	0.0051	0.0029
GM/TON	0.0	0.0	0.0	2.2	13582.4	2547.7	-20065.8	1217.6	1120.2	1000.8	573.0
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.7	3249.4	762.1	283246.	2078.8	944.3	618.9	254.4
GM/MWE-YR	0.	0.0	0.0	0.1	487.4	114.3	42489.	312.	142.	93.	38.
GM/TON	0.	0.0	0.0	2.2	10863.4	2547.7	946937.	6949.7	3157.0	2069.1	850.4

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1001

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24404.0 INITIAL ENRICH. 3.12 POWER DENS, MW/T 139.79 AV. NEUTRON TEMPERATURE, C 392.
 RESIDENCE TIME, YRS 3.34 AVERAGE R 0.295 KW/GRAMS FISSILE 0.64 AVERAGE FLUX, NEUT/SQ CM-SEC 6.35E 12

BASIS: 100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	105.76	81.19	59.03	FERTILE CAPTURE			
FROM PU-239	72.78	88.97	102.91	IN U-232	-0.	0.00	0.00
FROM PU-241	13.13	21.74	30.46	IN U-234	-0.	0.00	0.00
TOTAL	191.67	191.90	192.40	IN U-238	49.65	54.54	49.15
NET FROM U-238	13.65	13.57	13.51	IN PU-240	9.54	12.58	13.10
NET FROM U-238	0.	0.	0.	TOTAL	59.19	67.12	62.25
TOTAL	205.33	205.47	205.91				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.72	1.07
IN U-235	43.45	33.37	24.25	IN PU-242	0.47	0.99	1.38
IN PU-239	25.23	30.84	35.67	IN SPECIAL PRODUCTS	0.10	1.01	1.81
IN PU-241	4.33	7.17	10.05	TOTAL	0.57	2.72	4.26
TOTAL	73.01	71.38	69.97				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	3.91	4.40	4.13
IN PU-239	14.18	17.24	19.85	IN OTHER F.P.	0.	8.59	11.23
TOTAL	14.18	17.24	19.85	IN STRUCT. + MOD. + IMPUR.	6.13	6.89	6.48
				CONTROL + LEAKAGE	15.74	15.75	15.78
AS CAPTURE FORMING NON-FERTILE ISOTOPES				TOTAL	25.77	35.63	37.63
IN U-235	11.17	8.66	6.36	NEUTRONS INTO OR FROM OTHER FUEL	19.79	0.	1.76
IN PU-241	1.64	2.71	3.81	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
TOTAL	12.81	11.38	10.17	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	TOTAL ABSORPTION + LEAKAGE	205.33	205.47	205.91
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	59.19	67.12	62.25

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	268	1761	618	6979	17	1222	13	386	0
AVERAGE	267	1629	620	6985	17	1223	13	386	0
FINAL	267	1610	622	6994	17	1224	13	387	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	0.3715	0.3361	0.3617	0.0034	0.0388	0.0001	0.0277	0.6903	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	48.1	51.4	0.5	58.5	0.1	41.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0047	0.0000	0.0001	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	58.6	53.0	57.1	0.5	6.1	0.0	4.4	-7.5	-0.
GM/MWE-YR	8.79	7.95	8.56	0.08	0.92	0.00	0.66	-1.12	-0.
GM/MWH	0.0010	0.0009	0.0010	0.0000	0.0001	0.0000	0.0001	-0.0001	-0.
GM/TON	40.1	36.3	39.1	0.4	4.2	0.0	3.0	-5.1	-0.
WATTS/MWE-YR	0.	0.9	0.1	0.0	110.3	0.0	1.8	-0.6	0.

EXPOSURE 10000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 1001			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		268	1761	618	6979	17	1222	13	386	0
AVERAGE		266	1617	620	6993	17	1224	13	386	0
FINAL		265	1599	618	7011	18	1227	13	388	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE		0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.
FINAL		0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.73/7	0.
FINAL		0.9310	0.6222	0.7904	0.0086	0.1142	0.0003	0.1194	0.7366	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL		100.0	44.0	55.4	0.6	49.0	0.1	50.8	100.0	0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0001	0.0000	0.0000	0.0137	0.0000	0.0003	0.0004	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		73.4	49.1	62.3	0.7	9.0	0.0	9.4	-0.1	-0.
GM/MWE-YR		11.01	7.36	9.35	0.10	1.35	0.00	1.41	-0.01	-0.
GM/MMH		0.0013	0.0008	0.0011	0.0000	0.0002	0.0000	0.0002	-0.0000	-0.
GM/TON		100.6	67.2	85.4	0.9	12.3	0.0	12.9	-0.1	-0.
WATTS/MWE-YR		0.	0.8	0.1	0.0	162.1	0.0	4.0	-0.0	0.

EXPOSURE 15000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1001		
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		268	1761	618	6979	17	1222	13	386	0
AVERAGE		266	1609	618	7002	17	1225	13	387	0
FINAL		264	1585	609	7028	18	1230	13	389	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE		0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
FINAL		0.001	0.003	0.002	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.73/7	0.
FINAL		1.6216	0.8595	1.2963	0.0133	0.1965	0.0009	0.2895	0.8982	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL		100.0	39.8	59.6	0.6	40.6	0.2	59.3	100.0	0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0001	0.0000	0.0000	0.0236	0.0000	0.0008	0.0005	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		85.3	45.2	68.2	0.7	10.3	0.0	15.2	8.4	-0.
GM/MWE-YR		12.79	6.78	10.22	0.11	1.55	0.01	2.28	1.27	-0.
GM/MMH		0.0015	0.0008	0.0012	0.0000	0.0002	0.0000	0.0003	0.0001	-0.
GM/TON		175.2	92.9	140.1	1.4	21.2	0.1	31.3	17.3	-0.
WATTS/MWE-YR		0.	0.7	0.1	0.0	186.0	0.0	6.4	0.7	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	268	1761	618	6979	17	1222	13	386	0
AVERAGE	265	1601	614	7010	17	1227	13	387	0
FINAL	262	1570	599	7046	18	1233	13	391	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.002	0.004	0.003	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	2.4027	1.0499	1.8837	0.0171	0.2754	0.0016	0.5538	1.1720	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	35.8	63.6	0.6	33.3	0.2	66.5	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0331	0.0000	0.0016	0.0007	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	94.8	41.4	74.3	0.7	10.9	0.1	21.8	17.1	-0.
GM/MWE-YR	14.21	6.21	11.14	0.10	1.63	0.01	3.28	2.57	-0.
GM/MWH	0.0016	0.0007	0.0013	0.0000	0.0002	0.0000	0.0004	0.0003	-0.
GM/TON	259.6	113.4	203.5	1.8	29.8	0.2	59.8	46.9	-0.
WATTS/MWE-YR	0.	0.7	0.1	0.0	195.5	0.0	9.2	1.4	0.

EXPOSURE 24404.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	268	1761	618	6979	17	1222	13	386	0
AVERAGE	264	1594	611	7018	17	1228	13	388	0
FINAL	260	1556	588	7062	18	1236	13	392	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.001	0.003	0.002	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.002	0.005	0.004	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	3.1401	1.1812	2.4691	0.0196	0.3393	0.0024	0.8791	1.4976	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	32.4	67.1	0.5	28.0	0.2	71.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0407	0.0000	0.0025	0.0008	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	101.5	38.2	79.8	0.6	11.0	0.1	28.4	24.6	-0.
GM/MWE-YR	15.22	5.73	11.97	0.10	1.64	0.01	4.26	3.68	-0.
GM/MWH	0.0017	0.0007	0.0014	0.0000	0.0002	0.0000	0.0005	0.0004	-0.
GM/TON	339.3	127.6	266.8	2.1	36.7	0.3	95.0	82.1	-0.
WATTS/MWE-YR	0.	0.6	0.1	0.0	197.4	0.0	11.9	2.1	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1001

EXPOSURE 24404.0 MW/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.34 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
547.69	339.26	161.81	6949.7	3157.0	2069.1	850.4	127.62	266.77	36.66	94.98
547.69	339.27	164.02	6949.7	3157.2	2064.5	850.4	132.14	266.77	34.39	94.83
547.69	339.28	166.09	6949.7	3157.3	2060.0	850.4	136.64	266.77	32.27	94.67
547.69	339.29	168.03	6949.7	3157.5	2055.5	850.4	141.14	266.77	30.27	94.52
547.69	339.29	169.85	6949.7	3157.6	2051.0	850.4	145.62	266.77	28.40	94.37
547.69	339.31	173.14	6949.7	3157.9	2042.1	850.4	154.57	266.77	25.00	94.06
547.69	339.33	176.02	6949.7	3158.2	2033.1	850.4	163.47	266.76	22.01	93.76
547.69	339.35	178.54	6949.7	3158.5	2024.3	850.4	172.33	266.76	19.37	93.46
547.69	339.38	180.75	6949.7	3158.8	2015.4	850.4	181.15	266.76	17.05	93.15
547.69	339.53	189.16	6949.7	3160.6	1963.2	850.4	233.25	266.75	7.93	91.36
547.69	339.95	193.90	6949.7	3164.1	1862.7	850.4	333.31	266.72	1.72	87.89
547.69	340.38	193.93	6949.7	3166.7	1788.1	850.4	407.47	266.71	0.52	85.27

*** GM/MWE-YEAR ***

0.	0.	114.507	15.248	7.272	312.35	141.89	92.99	38.22	5.736	11.990	1.648	4.269
0.09	15.0	114.507	15.249	7.372	312.36	141.90	92.79	38.22	5.939	11.990	1.546	4.262
0.18	30.0	114.507	15.249	7.465	312.36	141.91	92.59	38.22	6.141	11.990	1.450	4.255
0.28	45.0	114.507	15.249	7.552	312.36	141.91	92.39	38.22	6.344	11.990	1.361	4.248
0.37	60.0	114.507	15.250	7.634	312.36	141.92	92.18	38.22	6.545	11.990	1.277	4.241
0.55	90.0	114.507	15.251	7.782	312.36	141.93	91.78	38.22	6.947	11.990	1.124	4.228
0.74	120.0	114.507	15.251	7.911	312.36	141.95	91.38	38.22	7.347	11.990	0.989	4.214
0.92	150.0	114.507	15.252	8.025	312.36	141.96	90.98	38.22	7.745	11.990	0.871	4.200
1.10	180.0	114.507	15.253	8.124	312.36	141.97	90.58	38.22	8.142	11.990	0.766	4.187
2.21	360.0	114.507	15.260	8.502	312.36	142.06	88.23	38.22	10.484	11.989	0.357	4.106
4.41	720.0	114.507	15.279	8.715	312.36	142.21	83.72	38.22	14.981	11.988	0.077	3.950
6.13	1000.0	114.507	15.299	8.716	312.36	142.33	80.37	38.22	18.314	11.987	0.023	3.833

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1001

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWH ***										
0.0131	0.0017	0.0004	0.0062	0.0057	0.0051	0.0029	0.0007	0.0014	0.0002	0.0005
0.0131	0.0017	0.0004	0.0062	0.0057	0.0051	0.0029	0.0007	0.0014	0.0002	0.0005
0.0131	0.0017	0.0004	0.0062	0.0057	0.0051	0.0029	0.0007	0.0014	0.0002	0.0005
0.0131	0.0017	0.0005	0.0062	0.0057	0.0051	0.0029	0.0007	0.0014	0.0002	0.0005
0.0131	0.0017	0.0005	0.0062	0.0057	0.0050	0.0029	0.0007	0.0014	0.0001	0.0005
0.0131	0.0017	0.0005	0.0062	0.0057	0.0050	0.0029	0.0008	0.0014	0.0001	0.0005
0.0131	0.0017	0.0005	0.0062	0.0057	0.0049	0.0029	0.0008	0.0014	0.0001	0.0005
0.0131	0.0017	0.0005	0.0062	0.0058	0.0049	0.0029	0.0009	0.0014	0.0001	0.0005
0.0131	0.0017	0.0005	0.0062	0.0058	0.0049	0.0029	0.0009	0.0014	0.0001	0.0005
0.0131	0.0017	0.0006	0.0062	0.0058	0.0046	0.0029	0.0012	0.0014	0.0000	0.0005
0.0131	0.0017	0.0006	0.0062	0.0058	0.0041	0.0029	0.0017	0.0014	0.0000	0.0005
0.0131	0.0017	0.0006	0.0062	0.0058	0.0037	0.0029	0.0021	0.0014	0.0000	0.0004

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	4.0726	0.	0.	0.	0.	0.063	0.	197.70	11.953
0.09	15.0	0.	0.	4.1283	0.	0.	0.	0.	0.065	0.	185.49	11.934
0.18	30.0	0.	0.	4.1804	0.	0.	0.	0.	0.068	0.	174.03	11.914
0.28	45.0	0.	0.	4.2293	0.	0.	0.	0.	0.070	0.	163.28	11.895
0.37	60.0	0.	0.	4.2750	0.	0.	0.	0.	0.072	0.	153.19	11.876
0.55	90.0	0.	0.	4.3578	0.	0.	0.	0.	0.076	0.	134.84	11.838
0.74	120.0	0.	0.	4.4304	0.	0.	0.	0.	0.081	0.	118.70	11.799
0.92	150.0	0.	0.	4.4938	0.	0.	0.	0.	0.085	0.	104.48	11.761
1.10	180.0	0.	0.	4.5493	0.	0.	0.	0.	0.090	0.	91.97	11.723
2.21	360.0	0.	0.	4.7610	0.	0.	0.	0.	0.115	0.	42.79	11.498
4.41	720.0	0.	0.	4.8803	0.	0.	0.	0.	0.165	0.	9.26	11.060
6.13	1000.0	0.	0.	4.8812	0.	0.	0.	0.	0.201	0.	2.82	10.731

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1001

TIME AFTER REACTOR DISCHARGE:

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.27	100.00	1.23	52.70	23.94	15.69	6.45	32.36	67.64	27.85	72.15
0.09	15.0	0.27	100.00	1.24	52.71	23.94	15.66	6.45	33.12	66.88	26.62	73.38
0.18	30.0	0.27	100.00	1.26	52.71	23.95	15.63	6.45	33.87	66.13	25.42	74.58
0.28	45.0	0.27	100.00	1.27	52.72	23.95	15.59	6.45	34.60	65.40	24.26	75.74
0.37	60.0	0.27	100.00	1.29	52.73	23.96	15.56	6.45	35.31	64.69	23.13	76.87
0.55	90.0	0.27	100.00	1.31	52.76	23.97	15.50	6.46	36.69	63.31	21.00	79.00
0.74	120.0	0.27	100.00	1.34	52.78	23.99	15.44	6.46	38.00	62.00	19.01	80.99
0.92	150.0	0.27	100.00	1.36	52.80	24.00	15.38	6.46	39.25	60.75	17.17	82.83
1.10	180.0	0.27	100.00	1.37	52.83	24.01	15.32	6.46	40.44	59.56	15.47	84.53
2.21	360.0	0.27	100.00	1.44	53.00	24.10	14.97	6.49	46.65	53.35	7.99	92.01
4.41	720.0	0.27	100.00	1.49	53.37	24.30	14.31	6.53	55.95	44.05	1.92	98.08
6.13	1000.0	0.27	100.00	1.50	53.67	24.46	13.81	6.57	60.44	39.56	0.61	99.39

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1001

EXPOSURE 24404.0 MWD/Y POWER DENS 25.00 MW/T RESIDENCE TIME 3.34 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE

0.45 YR

HALF-LIVES

TIME AFTER

SEPARATION

DAYS

URANIUM

RECOVERED...

U236 OTHER U

NEPTUNIUM

RECOVERED

NP237

PLUTONIUM

RECOVERED.....

PU238 PU239 PU240 PU241 PU242 NP237 AM241

YIELD
FACTOR

0.970

0.970

0.950

0.970

0.970

0.970

0.970

0.970

0.970

0.970

0.74	120.0	0.	2471.26	929068.8	322.37	170.74	6741.2	3063.5	1972.1	824.9	0.	0.
0.83	135.0	15.0	2471.26	929068.8	322.37	170.69	6741.2	3063.5	1967.8	824.9	0.00	4.31
1.00	163.0	43.0	2471.26	929068.8	322.37	170.59	6741.2	3063.5	1959.8	824.9	0.00	12.34
2.00	326.0	206.0	2471.26	929068.8	322.37	169.99	6741.2	3063.5	1913.7	824.9	0.03	58.39
3.00	489.0	369.0	2471.26	929068.8	322.37	169.40	6741.2	3063.5	1868.7	824.9	0.08	103.32
4.00	652.0	532.0	2471.26	929068.8	322.37	168.82	6741.2	3063.5	1824.8	824.9	0.16	147.17
5.00	815.0	695.0	2471.26	929068.8	322.37	168.23	6741.2	3063.5	1781.9	824.9	0.28	189.95
6.00	978.0	858.0	2471.26	929068.8	322.37	167.65	6741.2	3063.5	1740.0	824.9	0.42	231.70
7.00	1141.0	1021.0	2471.26	929068.8	322.37	167.07	6741.2	3063.5	1699.1	824.9	0.59	272.44

TIME AFTER DISCHARGE

0.45 YR

HALF-LIVES

TIME AFTER

SEPARATION

DAYS

AMERICIUM

RECOVERED.....

AM241 AM243 NP237 PU239

CURIUM

RECOVERED.....

CM242 CM244 PU238 PU240

YIELD
FACTOR

0.950

0.950

0.

0.

0.950

0.950

0.

0.

0.74	120.0	0.	155.29	253.43	0.	0.	20.91	89.07	0.	0.
0.83	135.0	15.0	155.29	253.42	0.01	0.00	19.62	88.93	1.29	0.14
1.00	163.0	43.0	155.27	253.42	0.03	0.00	17.41	88.66	3.49	0.41
2.00	326.0	206.0	155.16	253.41	0.13	0.01	8.71	87.12	12.17	1.96
3.00	489.0	369.0	155.06	253.40	0.24	0.02	4.35	85.60	16.47	3.47
4.00	652.0	532.0	154.95	253.39	0.34	0.03	2.18	84.11	18.59	4.96
5.00	815.0	695.0	154.85	253.38	0.45	0.04	1.09	82.64	19.61	6.43
6.00	978.0	858.0	154.74	253.37	0.55	0.05	0.54	81.20	20.08	7.87
7.00	1141.0	1021.0	154.64	253.36	0.66	0.06	0.27	79.79	20.29	9.28

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 1001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	111.07	41757.34	14.49	7.67	302.98	137.69	88.64	37.08	0.	0.
0.83	135.0	15.0	111.07	41757.34	14.49	7.67	302.98	137.69	88.44	37.08	0.00	0.19
1.00	163.0	43.0	111.07	41757.34	14.49	7.67	302.98	137.69	88.08	37.08	0.00	0.55
2.00	326.0	206.0	111.07	41757.34	14.49	7.64	302.98	137.69	86.01	37.08	0.00	2.62
3.00	489.0	369.0	111.07	41757.34	14.49	7.61	302.98	137.69	83.99	37.08	0.00	4.64
4.00	652.0	532.0	111.07	41757.34	14.49	7.59	302.98	137.69	82.02	37.08	0.01	6.61
5.00	815.0	695.0	111.07	41757.34	14.49	7.56	302.98	137.69	80.09	37.08	0.01	8.54
6.00	978.0	858.0	111.07	41757.34	14.49	7.53	302.98	137.69	78.21	37.08	0.02	10.41
7.00	1141.0	1021.0	111.07	41757.34	14.49	7.51	302.98	137.69	76.37	37.08	0.03	12.24

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	6.98	11.39	0.	0.	0.94	4.00	0.	0.
0.83	135.0	15.0	6.98	11.39	0.00	0.0000	0.88	4.00	0.06	0.11
1.00	163.0	43.0	6.98	11.39	0.00	0.0001	0.78	3.98	0.16	0.02
2.00	326.0	206.0	6.97	11.39	0.01	0.0006	0.39	3.92	0.55	0.09
3.00	489.0	369.0	6.97	11.39	0.01	0.0010	0.20	3.85	0.74	0.16
4.00	652.0	532.0	6.96	11.39	0.02	0.0015	0.10	3.78	0.84	0.22
5.00	815.0	695.0	6.96	11.39	0.02	0.0020	0.05	3.71	0.88	0.29
6.00	978.0	858.0	6.96	11.39	0.02	0.0024	0.02	3.65	0.90	0.35
7.00	1141.0	1021.0	6.95	11.39	0.03	0.0029	0.01	3.59	0.91	0.42

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 1001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0046	0.0028	0.	0.
0.83	135.0	15.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0046	0.0028	0.0000	0.0000
1.00	163.0	43.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0046	0.0028	0.0000	0.0001
2.00	326.0	206.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0046	0.0028	0.0000	0.0001
3.00	489.0	369.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0043	0.0028	0.0000	0.0003
4.00	652.0	532.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0041	0.0028	0.0000	0.0005
5.00	815.0	695.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0039	0.0028	0.0000	0.0008
6.00	978.0	858.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0037	0.0028	0.0000	0.0010
7.00	1141.0	1021.0	0.0127	+0.3198	0.0017	0.0005	0.0052	0.0053	0.0034	0.0028	0.0000	0.0012
			0.0127	+0.3198	0.0017	0.0004	0.0052	0.0053	0.0032	0.0028	0.0000	0.0014

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0008	0.0013	0.	0.	0.0001	0.0005	0.	0.
0.83	135.0	15.0	0.0008	0.0013	0.0000	0.0000	0.0001	0.0005	0.0000	0.0000
1.00	163.0	43.0	0.0008	0.0013	0.0000	0.0000	0.0001	0.0005	0.0000	0.0000
2.00	326.0	206.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
3.00	489.0	369.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
4.00	652.0	532.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
5.00	815.0	695.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
6.00	978.0	858.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
7.00	1141.0	1021.0	0.0008	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	4.2975	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	4.2961	0.	0.	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	4.2935	0.	0.	0.	0.	0.	0.006
2.00	326.0	206.0	0.	0.	0.	4.2786	0.	0.	0.	0.	0.	0.029
3.00	489.0	369.0	0.	0.	0.	4.2638	0.	0.	0.	0.	0.	0.051
4.00	652.0	532.0	0.	0.	0.	4.2490	0.	0.	0.	0.	0.	0.073
5.00	815.0	695.0	0.	0.	0.	4.2343	0.	0.	0.	0.	0.	0.094
6.00	978.0	858.0	0.	0.	0.	4.2196	0.	0.	0.	0.	0.	0.115
7.00	1141.0	1021.0	0.	0.	0.	4.2049	0.	0.	0.	0.	0.	0.135

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.077	0.	0.	0.	112.76	11.209	0.	0.
0.83	135.0	15.0	0.077	0.	0.	0.	105.80	11.191	0.0325	0.
1.00	163.0	43.0	0.077	0.	0.	0.	99.92	11.158	0.0879	0.
2.00	326.0	206.0	0.077	0.	0.	0.	46.97	10.963	0.3063	0.
3.00	489.0	369.0	0.077	0.	0.	0.	23.49	10.772	0.4146	0.
4.00	652.0	532.0	0.077	0.	0.	0.	11.75	10.585	0.4678	0.
5.00	815.0	695.0	0.077	0.	0.	0.	5.87	10.400	0.4936	0.
6.00	978.0	858.0	0.077	0.	0.	0.	2.94	10.219	0.5055	0.
7.00	1141.0	1021.0	0.076	0.	0.	0.	1.47	10.041	0.5106	0.

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.27	99.73	100.00	1.34	52.78	23.99	15.44	6.46	100.00	100.00
0.83	135.0	15.0	0.27	99.73	100.00	1.34	52.80	23.99	15.41	6.46	100.00	100.00
1.00	163.0	43.0	0.27	99.73	100.00	1.34	52.83	24.01	15.36	6.46	100.00	100.00
2.00	326.0	206.0	0.27	99.73	100.00	1.34	53.02	24.10	15.05	6.49	100.00	100.00
3.00	489.0	369.0	0.27	99.73	100.00	1.34	53.22	24.18	14.75	6.51	100.00	100.00
4.00	652.0	532.0	0.27	99.73	100.00	1.34	53.40	24.27	14.46	6.53	100.00	100.00
5.00	815.0	695.0	0.27	99.73	100.00	1.34	53.59	24.35	14.16	6.56	100.00	100.00
6.00	978.0	858.0	0.27	99.73	100.00	1.34	53.77	24.44	13.88	6.58	100.00	100.00
7.00	1141.0	1021.0	0.27	99.73	100.00	1.34	53.95	24.52	13.60	6.60	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	38.00	62.00	100.00	100.00	19.01	80.99	0.	0.
0.83	135.0	15.0	37.99	62.01	100.00	100.00	18.07	81.93	89.97	10.03
1.00	163.0	43.0	37.99	62.01	100.00	100.00	16.42	83.58	89.45	10.55
2.00	326.0	206.0	37.98	62.02	100.00	100.00	9.09	90.91	86.15	13.85
3.00	489.0	369.0	37.96	62.04	100.00	100.00	4.84	95.16	82.58	17.42
4.00	652.0	532.0	37.95	62.05	100.00	100.00	2.52	97.48	78.92	21.08
5.00	815.0	695.0	37.93	62.07	100.00	100.00	1.30	98.70	75.31	24.69
6.00	978.0	858.0	37.92	62.08	100.00	100.00	0.67	99.33	71.85	28.15
7.00	1141.0	1021.0	37.90	62.10	100.00	100.00	0.34	99.66	68.61	31.39

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 1001

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = EP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 340.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1002

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24099.0	INITIAL FLUX, N/SQ CM-SEC	1.06E 13	FISSILE RATIO	0.65	U235 IN TAILS/U235 ENR	0.39				
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	3.88E 12	INITIAL CONV RATIO	0.60	KG NATURAL/KG PRODUCED	4.841				
RESIDENCE TIME, YRS	3.30	MAX FLUX/MIN FLUX	3.41	NONFUEL X-SECT 1/CM	0.073	KG NAT U/MWE-YR	101.740				
TOTAL ENRICHMENT	3.28	AVG NEUTRON TEMP, C	396.	FUEL DENSITY	9.26	AVERAGE R	0.314				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.61	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.193	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.013	REACTIVITY CHANGE/MWD, MK	0.0075				
ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	750	0	0	464	0	0.	1159	0	1069	0
AVERAGE	0.	747	0	0	475	0	0.	1143	0	1070	0
FINAL	0.	740	0	0	485	0	0.	1135	0	1076	0
ABSORPTION-INITIAL	57.54	852	379	228	586	185	16.69	1809	1312	1472	530
AVERAGE	56.80	849	374	226	601	150	16.31	1763	1264	1473	508
FINAL	55.00	840	363	221	615	128	15.69	1767	1196	1481	477
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.265	0.	0.	0.182	0.	0.047	0.
AVERAGE	0.	0.000	0.	0.	0.194	0.	0.	0.193	0.	0.056	0.
FINAL	0.	0.000	0.	0.	0.133	0.	0.	0.196	0.	0.069	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.335	0.	0.377	0.285	0.093	0.065	0.010
AVERAGE	0.000	0.000	0.000	0.000	0.245	0.005	0.365	0.301	0.098	0.078	0.012
FINAL	0.000	0.000	0.000	0.000	0.168	0.007	0.347	0.305	0.100	0.087	0.015
ALPHA											
INITIAL	0.	0.136	0.	0.	0.263	0.	0.	0.561	0.	0.377	0.
AVERAGE	0.	0.135	0.	0.	0.269	0.	0.	0.559	0.	0.377	0.
FINAL	0.	0.135	0.	0.	0.268	0.	0.	0.557	0.	0.376	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	38.8	0.	10.5	39.2	0.	11.5	0.
ETA	0.	2.20	0.	0.	1.92	0.	0.	1.85	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	2.11	0.	1.38	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.466	0.	0.136	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1002

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.41	0.	0.	0.67	0.	0.19	0.
FINAL	0.	0.00	0.	0.	1.15	0.	0.	0.74	0.	0.25	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.5	0.	97.5	53.9	24.4	15.1	6.5
FINAL	100.0	0.0	100.0	0.0	1.2	0.3	98.5	50.0	24.2	16.9	8.9
ISOTOPIIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.2232	0.	8.9186	0.0624	0.0284	0.0176	0.0076
FINAL	0.0000	0.0000	0.0000	0.0000	0.1068	0.0223	8.7408	0.0686	0.0334	0.0234	0.0123
NET ISOTOPIIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.3	-3809.1	729.0	-5819.5	201.3	163.8	187.5	152.7
GM/MWE-YR	0.0	0.0	0.0	0.2	-571.4	109.4	-872.9	30.2	24.6	28.1	22.9
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0652	0.0125	-0.0997	0.0034	0.0028	0.0032	0.0026
GM/TON	0.0	0.0	0.0	4.2	-12574.9	2406.7	-19212.0	664.5	540.7	619.1	504.0
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.3	3496.2	729.0	286061.	2244.1	1092.3	765.2	402.5
GM/MWE-YR	0.	0.0	0.0	0.2	524.4	109.4	42910.	337.	164.	115.	60.
GM/TON	0.	0.0	0.0	4.2	11542.1	2406.7	944375.	7408.4	3606.0	2526.0	1328.8

GRADEU BURNUP

NEUTRON BALANCE

CASE NO. 1002

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24099.0 INITIAL ENRICH. 3.28 POWER DENS, MW/T 114.53 AV. NEUTRON TEMPERATURE, C 396.
 RESIDENCE TIME, YRS 3.30 AVERAGE R 0.314 KW/GRAMS FISSILE 0.61 AVERAGE FLUX, NEUT/SQ CM-SEC 3.88E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSION CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	-0.00	FERTILE CAPTURE			
FROM U-235	94.36	75.63	57.69	IN TH-232	-0.	0.00	0.00
FROM PU-239	76.81	89.28	100.99	IN U-234	-0.	0.00	0.00
FROM PU-241	20.87	27.38	34.00	IN U-238	48.17	52.95	47.61
TOTAL	192.04	192.28	192.69	IN PU-240	11.94	14.19	13.74
NET FROM U-238	13.66	13.60	13.55	TOTAL	60.11	67.14	61.36
NET FROM U-238	0.	0.	0.				
TOTAL	205.70	205.88	206.23	NON-FERTILE CAPTURE			
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				IN U-236	-0.	0.66	1.00
IN U-233	-0.	0.00	0.00	IN PU-242	1.29	1.80	2.00
IN U-235	38.77	31.08	23.70	IN SPECIAL PRODUCTS	0.21	1.53	2.45
IN PU-239	26.62	30.95	35.01	TOTAL	1.50	3.99	5.45
IN PU-241	6.89	9.04	11.22	NON-FUEL ABSORPTION + LEAKAGE			
TOTAL	72.28	71.06	69.93	IN SM + XE	3.77	4.28	4.04
AS CAPTURE FORMING FERTILE ISOTOPES				IN OTHER F.P.	0.	8.37	10.92
IN U-233	-0.	0.00	0.00	IN STRUCT. + MOD. + IMPUR.	5.57	6.33	5.98
IN PU-239	14.93	17.29	19.49	CONTROL + LEAKAGE	15.76	15.78	15.81
TOTAL	14.93	17.29	19.49	TOTAL	25.11	34.76	36.75
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL	18.99	0.	2.68
IN U-235	10.19	8.24	6.95	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	2.60	3.40	4.22	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	12.79	11.65	10.58	TOTAL ABSORPTION + LEAKAGE	205.70	205.88	206.23
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE - (PA-233 + NP-239 NON-FERTILE CAPTURE)	60.11	67.14	61.36

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	274	1824	661	6928	17	1213	13	381	0
AVERAGE	273	1676	660	6936	17	1214	13	381	0
FINAL	273	1654	657	6947	17	1216	13	382	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6924	0.
FINAL	0.3629	0.5618	0.9021	0.0056	0.0624	0.0001	0.0696	1.5735	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	38.4	61.2	0.4	47.9	0.1	52.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0075	0.0000	0.0002	0.0009	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	57.2	88.6	142.3	0.9	9.8	0.0	11.0	-18.8	-0.
GM/MWE-YR	8.59	13.29	21.35	0.13	1.48	0.00	1.65	-2.81	-0.
GM/MWH	0.0010	0.0015	0.0024	0.0000	0.0002	0.0000	0.0002	-0.0003	-0.
GM/TON	39.2	60.7	97.5	0.6	6.7	0.0	7.5	-12.9	-0.
WATTS/MWE-YR	0.	1.5	0.1	0.0	177.3	0.0	4.6	-1.6	0.

EXPOSURE 10000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	274	1824	661	6928	17	1213	13	381	0
AVERAGE	272	1661	656	6946	17	1216	13	381	0
FINAL	271	1640	648	6967	17	1220	13	383	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6924	0.
FINAL	0.9011	0.9811	1.7962	0.0140	0.1752	0.0005	0.2802	1.5822	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	35.3	64.2	0.5	38.6	0.1	61.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0210	0.0000	0.0008	0.0009	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	71.1	77.4	141.7	1.1	13.8	0.0	22.1	-8.7	-0.
GM/MWE-YR	10.66	11.61	21.25	0.17	2.07	0.01	3.32	-1.30	-0.
GM/MWH	0.0012	0.0013	0.0024	0.0000	0.0002	0.0000	0.0004	-0.0001	-0.
GM/TON	97.4	106.0	194.1	1.5	18.9	0.1	30.3	-11.9	-0.
WATTS/MWE-YR	0.	1.3	0.1	0.0	248.7	0.0	9.3	-0.7	0.

EXPOSURE 15000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	274	1824	661	6928	17	1213	13	381	0
AVERAGE	271	1652	652	6956	17	1217	13	382	0
FINAL	269	1623	636	6987	17	1223	13	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.004	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6924	0.
FINAL	1.5645	1.2856	2.6890	0.0207	0.2875	0.0013	0.6348	1.7371	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	32.4	67.1	0.5	31.3	0.1	68.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0345	0.0000	0.0018	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	82.3	67.6	141.4	1.1	15.1	0.1	33.4	2.3	-0.
GM/MWE-YR	12.34	10.14	21.21	0.16	2.27	0.01	5.01	0.35	-0.
GM/MWH	0.0014	0.0012	0.0024	0.0000	0.0003	0.0000	0.0006	0.0000	-0.
GM/TON	169.0	138.9	290.5	2.2	31.1	0.1	68.6	4.8	-0.
WATTS/MWE-YR	0.	1.1	0.1	0.0	272.1	0.0	14.0	0.2	0.

EXPOSURE 20000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	274	1824	661	6928	17	1213	13	381	0
AVERAGE	270	1643	646	6966	17	1219	13	383	0
FINAL	267	1606	621	7006	18	1227	13	386	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.006	0.006	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6924	0.
FINAL	2.3173	1.4981	3.5807	0.0254	0.3851	0.0022	1.1372	2.0220	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	29.5	70.0	0.5	25.4	0.1	74.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0462	0.0000	0.0032	0.0011	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	91.4	59.1	141.4	1.0	15.2	0.1	44.8	13.0	-0.
GM/MWE-YR	13.71	8.86	21.22	0.15	2.28	0.01	6.73	1.95	-0.
GM/MWH	0.0016	0.0010	0.0024	0.0000	0.0003	0.0000	0.0008	0.0002	-0.
GM/TON	250.4	161.9	387.5	2.7	41.6	0.2	122.9	35.6	-0.
WATTS/MWE-YR	0.	1.0	0.1	0.0	273.4	0.0	18.8	1.1	0.

EXPOSURE 24099.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	274	1824	661	6928	17	1213	13	381	0
AVERAGE	270	1635	641	6974	17	1220	13	383	0
FINAL	265	1592	608	7022	18	1229	13	388	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.006	0.007	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.6924	0.
FINAL	2.9807	1.6161	4.3291	0.0280	0.4524	0.0032	1.6626	2.3357	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	27.2	72.3	0.5	21.5	0.1	78.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0543	0.0000	0.0047	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	97.6	52.9	141.7	0.9	14.8	0.1	54.4	21.1	-0.
GM/MWE-YR	14.63	7.93	21.25	0.14	2.22	0.02	8.16	3.16	-0.
GM/MWH	0.0017	0.0009	0.0024	0.0000	0.0003	0.0000	0.0009	0.0004	-0.
GM/TON	322.0	174.6	467.7	3.0	48.9	0.3	179.6	69.5	-0.
WATTS/MWE-YR	0.	0.9	0.1	0.0	266.5	0.0	22.9	1.8	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1002

EXPOSURE 24099.0 MWD/Y
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.30 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
406.72	322.04	252.36	7408.4	3606.0	2526.0	1328.8	174.61	467.72	48.88	179.63
406.72	322.05	255.30	7408.4	3606.3	2520.5	1328.8	180.12	467.72	45.86	179.34
406.72	322.07	258.05	7408.4	3606.6	2515.0	1328.8	185.63	467.72	43.03	179.05
406.72	322.08	260.63	7408.4	3606.9	2509.5	1328.8	191.11	467.72	40.37	178.76
406.72	322.09	263.04	7408.4	3607.2	2504.0	1328.8	196.59	467.72	37.87	178.47
406.72	322.11	267.40	7408.4	3607.8	2493.0	1328.8	207.50	467.71	33.54	177.90
406.72	322.14	271.22	7408.4	3608.3	2482.2	1328.8	218.37	467.71	29.35	177.32
406.72	322.17	274.56	7408.4	3608.9	2471.3	1328.8	229.19	467.71	25.83	176.75
406.72	322.20	277.48	7408.4	3609.5	2460.5	1328.8	239.95	467.70	22.74	176.18
406.72	322.40	288.55	7408.4	3612.9	2396.7	1328.8	303.55	467.68	10.58	172.79
406.72	322.94	294.59	7408.5	3619.5	2274.0	1328.8	425.68	467.64	2.29	166.22
406.72	323.49	294.43	7408.5	3624.4	2183.0	1328.8	516.19	467.61	0.70	161.27

*** GM/MWE-YEAR ***

0.	0.	109.540	14.658	11.486	337.19	164.13	114.97	60.48	7.947	21.288	2.225	8.176
0.09	15.0	109.540	14.658	11.620	337.19	164.14	114.72	60.48	8.198	21.288	2.067	8.163
0.18	30.0	109.540	14.659	11.745	337.19	164.15	114.47	60.48	8.449	21.288	1.958	8.149
0.28	45.0	109.540	14.659	11.862	337.19	164.17	114.22	60.48	8.698	21.288	1.837	8.136
0.37	60.0	109.540	14.660	11.972	337.19	164.18	113.97	60.48	8.948	21.288	1.724	8.123
0.55	90.0	109.540	14.661	12.171	337.19	164.20	113.47	60.48	9.444	21.288	1.517	8.097
0.74	120.0	109.540	14.662	12.344	337.19	164.23	112.97	60.48	9.939	21.287	1.336	8.071
0.92	150.0	109.540	14.663	12.496	337.19	164.26	112.48	60.48	10.431	21.287	1.176	8.045
1.10	180.0	109.540	14.665	12.629	337.19	164.28	111.99	60.48	10.921	21.287	1.035	8.019
2.21	360.0	109.540	14.674	13.133	337.19	164.44	109.08	60.48	13.816	21.286	0.481	7.865
4.41	720.0	109.540	14.699	13.408	337.19	164.74	103.50	60.48	19.374	21.284	0.104	7.565
6.13	1000.0	109.540	14.723	13.401	337.19	164.96	99.36	60.48	23.494	21.283	0.032	7.340

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1002

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWH ***										
0.0125	0.0017	0.0004	0.0035	0.0028	0.0032	0.0026	0.0009	0.0024	0.0003	0.0009
0.0125	0.0017	0.0004	0.0035	0.0028	0.0032	0.0026	0.0009	0.0024	0.0002	0.0009
0.0125	0.0017	0.0004	0.0035	0.0028	0.0032	0.0026	0.0010	0.0024	0.0002	0.0009
0.0125	0.0017	0.0004	0.0035	0.0028	0.0031	0.0026	0.0010	0.0024	0.0002	0.0009
0.0125	0.0017	0.0004	0.0035	0.0028	0.0031	0.0026	0.0010	0.0024	0.0002	0.0009
0.0125	0.0017	0.0004	0.0035	0.0028	0.0030	0.0026	0.0011	0.0024	0.0002	0.0009
0.0125	0.0017	0.0005	0.0035	0.0028	0.0030	0.0026	0.0011	0.0024	0.0002	0.0009
0.0125	0.0017	0.0005	0.0035	0.0028	0.0029	0.0026	0.0012	0.0024	0.0001	0.0009
0.0125	0.0017	0.0005	0.0035	0.0028	0.0029	0.0026	0.0012	0.0024	0.0001	0.0009
0.0125	0.0017	0.0005	0.0035	0.0028	0.0025	0.0026	0.0016	0.0024	0.0001	0.0009
0.0125	0.0017	0.0006	0.0035	0.0029	0.0019	0.0026	0.0022	0.0024	0.0000	0.0009
0.0125	0.0017	0.0006	0.0035	0.0029	0.0014	0.0026	0.0027	0.0024	0.0000	0.0008

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	6.4321	0.	0.	0.	0.	0.087	0.	266.97	22.892
0.09	15.0	0.	0.	6.5070	0.	0.	0.	0.	0.090	0.	250.48	22.855
0.18	30.0	0.	0.	6.5772	0.	0.	0.	0.	0.093	0.	235.00	22.818
0.28	45.0	0.	0.	6.6428	0.	0.	0.	0.	0.096	0.	220.48	22.781
0.37	60.0	0.	0.	6.7042	0.	0.	0.	0.	0.098	0.	206.86	22.744
0.55	90.0	0.	0.	6.8155	0.	0.	0.	0.	0.104	0.	182.09	22.671
0.74	120.0	0.	0.	6.9129	0.	0.	0.	0.	0.109	0.	160.29	22.598
0.92	150.0	0.	0.	6.9980	0.	0.	0.	0.	0.115	0.	141.09	22.525
1.10	180.0	0.	0.	7.0723	0.	0.	0.	0.	0.120	0.	124.20	22.452
2.21	360.0	0.	0.	7.3546	0.	0.	0.	0.	0.152	0.	57.78	22.021
4.41	720.0	0.	0.	7.5086	0.	0.	0.	0.	0.213	0.	12.50	21.182
6.13	1000.0	0.	0.	7.5044	0.	0.	0.	0.	0.258	0.	3.80	20.553

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1002

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.25	100.00	1.67	48.99	23.85	16.70	8.79	27.18	72.82	21.39	78.61
0.09	15.0	0.25	100.00	1.69	49.00	23.85	16.67	8.79	27.80	72.20	20.36	79.64
0.18	30.0	0.25	100.00	1.71	49.01	23.86	16.64	8.79	28.41	71.59	19.37	80.63
0.28	45.0	0.25	100.00	1.72	49.02	23.86	16.60	8.79	29.01	70.99	18.42	81.58
0.37	60.0	0.25	100.00	1.74	49.03	23.87	16.57	8.79	29.59	70.41	17.51	82.49
0.55	90.0	0.25	100.00	1.77	49.04	23.88	16.50	8.80	30.73	69.27	15.78	84.22
0.74	120.0	0.25	100.00	1.80	49.07	23.90	16.44	8.80	31.83	68.17	14.20	85.80
0.92	150.0	0.25	100.00	1.82	49.09	23.91	16.37	8.80	32.89	67.11	12.75	87.25
1.10	180.0	0.25	100.00	1.84	49.11	23.93	16.31	8.81	33.91	66.09	11.43	88.57
2.21	360.0	0.25	100.00	1.92	49.27	24.03	15.94	8.84	39.36	60.64	9.77	90.23
4.41	720.0	0.25	100.00	1.97	49.64	24.25	15.24	8.90	47.65	52.35	1.36	98.64
6.13	1000.0	0.25	100.00	1.98	49.93	24.42	14.71	8.95	52.47	47.53	0.43	99.57

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1002

EXPOSURE 24099.0 MWD/Y
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.30 YRS.

LOAD FACTOR 0.33

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVES DAYSTIME AFTER
SEPARATION
DAYSURANIUM
..RECOVERED...
U236 OTHER UNEPTUNIUM
RECOVERED
NP237PLUTONIUM
RECOVERED.....
PU238 PU239 PU240 PU241 PU242 NP237 AM241YIELD
FACTOR

			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.	2334.52	927244.6	306.03	263.08	7186.2	3500.1	2407.7	1288.9	0.	0.
0.83	135.0	15.0	2334.52	927244.6	306.03	263.00	7186.2	3500.1	2402.4	1288.9	0.00	5.27
1.00	163.0	43.0	2334.52	927244.6	306.03	262.84	7186.2	3500.1	2392.6	1288.9	0.00	15.06
2.00	326.0	206.0	2334.52	927244.6	306.03	261.93	7186.2	3500.1	2336.4	1288.9	0.03	71.28
3.00	489.0	369.0	2334.52	927244.6	306.03	261.02	7186.2	3500.1	2281.5	1288.9	0.10	126.14
4.00	652.0	532.0	2334.52	927244.6	306.03	260.12	7186.2	3500.1	2227.8	1288.9	0.20	179.67
5.00	815.0	695.0	2334.52	927244.6	306.03	259.22	7186.2	3500.1	2175.4	1288.9	0.34	231.90
6.00	978.0	858.0	2334.52	927244.6	306.03	258.32	7186.2	3500.1	2124.3	1288.9	0.51	282.87
7.00	1141.0	1021.0	2334.52	927244.6	306.03	257.42	7186.2	3500.1	2074.4	1288.9	0.72	332.61

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVES DAYSTIME AFTER
SEPARATION
DAYSAMERICIUM
.....RECOVERED.....
AM241 AM243 NP237 PU239CURIUM
.....RECOVERED.....
CM242 CM244 PU238 PU240YIELD
FACTOR

			0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	207.45	444.32	0.	0.	27.88	168.46	0.	0.
0.83	135.0	15.0	207.44	444.32	0.01	0.00	26.16	168.18	1.72	0.27
1.00	163.0	43.0	207.41	444.32	0.04	0.00	23.22	167.68	4.66	0.78
2.00	326.0	206.0	207.27	444.30	0.18	0.02	11.61	164.76	16.23	3.70
3.00	489.0	369.0	207.13	444.28	0.32	0.04	5.81	161.89	21.96	6.57
4.00	652.0	532.0	206.99	444.26	0.46	0.06	2.90	159.07	24.79	9.39
5.00	815.0	695.0	206.85	444.25	0.60	0.08	1.45	156.30	26.15	12.16
6.00	978.0	858.0	206.71	444.23	0.74	0.09	0.73	153.97	26.78	14.88
7.00	1141.0	1021.0	206.57	444.21	0.88	0.11	0.36	150.90	27.05	17.56

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/HWE-YEAR ***

CASE NUMBER 1002

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	106.25	42202.80	13.93	11.97	327.07	159.30	109.58	58.67	0.	0.
0.83	135.0	15.0	106.25	42202.80	13.93	11.97	327.07	159.30	109.34	58.67	0.00	0.24
1.00	163.0	43.0	106.25	42202.80	13.93	11.96	327.07	159.30	108.90	58.67	0.00	0.69
2.00	326.0	206.0	106.25	42202.80	13.93	11.92	327.07	159.30	106.34	58.67	0.00	3.24
3.00	489.0	369.0	106.25	42202.80	13.93	11.88	327.07	159.30	103.84	58.67	0.00	5.74
4.00	652.0	532.0	106.25	42202.80	13.93	11.84	327.07	159.30	101.40	58.67	0.01	8.18
5.00	815.0	695.0	106.25	42202.80	13.93	11.80	327.07	159.30	99.01	58.67	0.02	10.55
6.00	978.0	858.0	106.25	42202.80	13.93	11.76	327.07	159.30	96.69	58.67	0.02	12.87
7.00	1141.0	1021.0	106.25	42202.80	13.93	11.72	327.07	159.30	94.41	58.67	0.03	15.14

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	9.44	20.22	0.	0.	1.27	7.67	0.	0.
0.83	135.0	15.0	9.44	20.22	0.00	0.0001	1.19	7.65	0.08	0.01
1.00	163.0	43.0	9.44	20.22	0.00	0.0002	1.06	7.63	0.21	0.04
2.00	326.0	206.0	9.43	20.22	0.01	0.0010	0.53	7.50	0.74	0.17
3.00	489.0	369.0	9.43	20.22	0.01	0.0019	0.26	7.37	1.00	0.30
4.00	652.0	532.0	9.42	20.22	0.02	0.0027	0.13	7.24	1.13	0.43
5.00	815.0	695.0	9.41	20.22	0.03	0.0035	0.07	7.11	1.19	0.55
6.00	978.0	858.0	9.41	20.22	0.03	0.0043	0.03	6.99	1.22	0.68
7.00	1141.0	1021.0	9.40	20.22	0.04	0.0051	0.02	6.87	1.23	0.80

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 1002

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0026	0.0024	0.	0.
0.83	135.0	15.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0026	0.0024	0.0000	0.0000
1.00	163.0	43.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0025	0.0024	0.0000	0.0001
2.00	326.0	206.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0022	0.0024	0.0000	0.0004
3.00	489.0	369.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0019	0.0024	0.0000	0.0007
4.00	652.0	532.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0017	0.0024	0.0000	0.0009
5.00	815.0	695.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0014	0.0024	0.0000	0.0012
6.00	978.0	858.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0011	0.0024	0.0000	0.0015
7.00	1141.0	1021.0	0.0121	-0.3139	0.0016	0.0004	0.0023	0.0023	0.0009	0.0024	0.0000	0.0017

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0011	0.0023	0.	0.	0.0001	0.0009	0.	0.
0.83	135.0	15.0	0.0011	0.0023	0.0000	0.0000	0.0001	0.0009	0.0000	0.0000
1.00	163.0	43.0	0.0011	0.0023	0.0000	0.0000	0.0001	0.0009	0.0000	0.0000
2.00	326.0	206.0	0.0011	0.0023	0.0000	0.0000	0.0001	0.0009	0.0001	0.0000
3.00	489.0	369.0	0.0011	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0000
4.00	652.0	532.0	0.0011	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0000
5.00	815.0	695.0	0.0011	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0001
6.00	978.0	858.0	0.0011	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0001
7.00	1141.0	1021.0	0.0011	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0001

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	6.7055	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	6.7034	0.	0.	0.	0.	0.	0.003
1.00	163.0	43.0	0.	0.	0.	6.6994	0.	0.	0.	0.	0.	0.008
2.00	326.0	206.0	0.	0.	0.	6.6761	0.	0.	0.	0.	0.	0.036
3.00	489.0	369.0	0.	0.	0.	6.6530	0.	0.	0.	0.	0.	0.063
4.00	652.0	532.0	0.	0.	0.	6.6299	0.	0.	0.	0.	0.	0.090
5.00	815.0	695.0	0.	0.	0.	6.6069	0.	0.	0.	0.	0.	0.116
6.00	978.0	858.0	0.	0.	0.	6.5840	0.	0.	0.	0.	0.	0.142
7.00	1141.0	1021.0	0.	0.	0.	6.5611	0.	0.	0.	0.	0.	0.167

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.104	0.	0.	0.	192.27	21.468	0.	0.
0.83	135.0	15.0	0.104	0.	0.	0.	142.86	21.433	0.0439	0.
1.00	163.0	43.0	0.104	0.	0.	0.	126.83	21.369	0.1187	0.
2.00	326.0	206.0	0.104	0.	0.	0.	63.42	20.996	0.4136	0.
3.00	489.0	369.0	0.104	0.	0.	0.	31.72	20.631	0.5598	0.
4.00	652.0	532.0	0.104	0.	0.	0.	15.86	20.271	0.6317	0.
5.00	815.0	695.0	0.104	0.	0.	0.	7.93	19.918	0.6665	0.
6.00	978.0	858.0	0.103	0.	0.	0.	3.97	19.571	0.6826	0.
7.00	1141.0	1021.0	0.103	0.	0.	0.	1.98	19.230	0.6895	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.25	99.75	100.00	1.80	49.07	23.90	16.44	8.80	100.00	100.00
0.83	135.0	15.0	0.25	99.75	100.00	1.80	49.08	23.91	16.41	8.80	100.00	100.00
1.00	163.0	43.0	0.25	99.75	100.00	1.80	49.12	23.92	16.35	8.81	100.00	100.00
2.00	326.0	206.0	0.25	99.75	100.00	1.80	49.31	24.02	16.03	8.84	100.00	100.00
3.00	489.0	369.0	0.25	99.75	100.00	1.80	49.50	24.11	15.72	8.88	100.00	100.00
4.00	652.0	532.0	0.25	99.75	100.00	1.80	49.69	24.20	15.40	8.91	100.00	100.00
5.00	815.0	695.0	0.25	99.75	100.00	1.80	49.87	24.29	15.10	8.94	100.00	100.00
6.00	978.0	858.0	0.25	99.75	100.00	1.80	50.05	24.38	14.80	8.98	100.00	100.00
7.00	1141.0	1021.0	0.25	99.75	100.00	1.80	50.23	24.46	14.50	9.01	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	31.83	68.17	100.00	100.00	14.20	85.80	0.	0.
0.83	135.0	15.0	31.83	68.17	100.00	100.00	13.46	86.54	86.35	13.65
1.00	163.0	43.0	31.82	68.18	100.00	100.00	12.16	87.84	85.67	14.33
2.00	326.0	206.0	31.81	68.19	100.00	100.00	6.58	93.42	81.43	18.57
3.00	489.0	369.0	31.80	68.20	100.00	100.00	3.46	96.54	76.98	23.02
4.00	652.0	532.0	31.78	68.22	100.00	100.00	1.79	98.21	72.53	27.47
5.00	815.0	695.0	31.77	68.23	100.00	100.00	0.92	99.08	68.26	31.74
6.00	978.0	858.0	31.76	68.24	100.00	100.00	0.47	99.53	64.28	35.72
7.00	1141.0	1021.0	31.74	68.26	100.00	100.00	0.24	99.76	60.64	39.36

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 1002

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP = 0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 470.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1003

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	23935.0	INITIAL FLUX, N/SQ CM-SEC		1.01E 13	FISSILE RATIO		0.66	U235 IN TAILS/U235 ENR		0.39		
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC		2.78E 12	INITIAL CONV RATIO		0.60	KG NATURAL/KG PRODUCED		4.884		
RESIDENCE TIME, YRS	3.28	MAX FLUX/MIN FLUX		4.55	NONFUEL X-SECT 1/CM		0.074	KG NAT U/MWE-YR		102.639		
TOTAL ENRICHMENT	3.38	AVG NEUTRON TEMP, C		399.	FUEL DENSITY		9.26	AVERAGE R		0.323		
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33								
KW/GRAMS FISSILE	0.59	WATTS/CC		185.11	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.		
INITIAL REACTIVITY	1.191	FINAL INTEGRATED REACTIVITY		1.083	FINAL REACTIVITY		1.015	REACTIVITY CHANGE/MWD, MK		0.0074		
ISOTOPES		TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	759	0	0	462	0	0.	1152	0	1058	0
AVERAGE		0.	755	0	0	473	0	0.	1139	0	1061	0
FINAL		0.	747	0	0	484	0	0.	1132	0	1060	0
ABSORPTION-INITIAL		59.32	862	391	233	585	192	17.24	1797	1284	1455	521
AVERAGE		58.42	858	385	231	600	156	16.81	1775	1254	1460	503
FINAL		56.50	848	373	226	614	133	16.15	1764	1200	1470	475
MACROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	-0.	0.	0.	0.266	0.	0.	0.193	0.	0.057	0.
AVERAGE		0.	0.000	0.	0.	0.197	0.	0.	0.201	0.	0.064	0.
FINAL		0.	0.000	0.	0.	0.138	0.	0.	0.202	0.	0.068	0.
ABSORPTION-INITIAL		-0.	-0.	-0.	-0.	0.337	-0.	0.388	0.301	0.104	0.078	0.015
AVERAGE		0.000	0.000	0.000	0.000	0.250	0.005	0.375	0.313	0.106	0.088	0.017
FINAL		0.000	0.000	0.000	0.000	0.175	0.007	0.357	0.315	0.106	0.094	0.018
ALPHA		0.	0.136	0.	0.	0.266	0.	0.	0.560	0.	0.375	0.
AVERAGE		0.	0.136	0.	0.	0.268	0.	0.	0.559	0.	0.375	0.
FINAL		0.	0.135	0.	0.	0.269	0.	0.	0.558	0.	0.376	0.
PERCENT OF TOTAL FISSION		0.	0.0	0.	0.	37.9	0.	10.6	39.1	0.	12.4	0.
ETA		0.	2.20	0.	0.	1.92	0.	0.	1.85	0.	2.20	0.
MWD/GRAM DESTROYED		0.	0.	0.	0.	2.16	0.	1.44	0.	0.	0.	0.
INITIAL CONVERSION RATIO		0.	-0.	0.	0.	-0.	0.	0.	0.458	0.	0.146	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1003

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	2.43	0.	0.	0.72	0.	0.23	0.
FINAL	0.	0.00	0.	0.	1.20	0.	0.	0.77	0.	0.28	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	2.5	-0.	97.5	50.4	24.5	16.2	8.9
FINAL	100.0	0.0	100.0	0.0	1.3	0.2	98.5	48.3	24.0	17.3	10.5
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.2245	-0.	8.8988	0.0665	0.0324	0.0215	0.0119
FINAL	0.0000	0.0000	0.0000	0.0001	0.1115	0.0219	8.7289	0.0709	0.0353	0.0255	0.0155
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.8	-3725.9	720.3	-5599.0	143.8	95.1	131.6	118.5
GM/MWE-YR	0.0	0.0	0.0	0.3	-558.9	108.1	-839.9	21.6	14.3	19.7	17.8
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0638	0.0123	-0.0959	0.0025	0.0016	0.0023	0.0020
GM/TON	0.0	0.0	0.0	6.0	-12216.6	2361.8	-18358.1	471.6	311.7	431.4	388.5
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.8	3673.2	720.3	287635.	2335.3	1163.6	841.0	511.6
GM/MWE-YR	0.	0.0	0.0	0.3	551.0	108.1	43146.	350.	175.	126.	77.
GM/TON	0.	0.0	0.0	6.0	12043.7	2361.8	943095.	7657.1	3815.3	2759.5	1677.4

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1003

PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 23935.0 INITIAL ENRICH. 3.38 POWER DENS. MW/T 110.75 AV. NEUTRON TEMPERATURE, C 399.
 RESIDENCE TIME, YRS 3.28 AVERAGE R 0.323 KW/GRAMS FISSILE 0.59 AVERAGE FLUX, NEUT/SQ CM-SEC 2.78E 12.

BASIS=100. NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	90.36	73.80	57.60				
FROM PU-239	77.78	89.00	99.82				
FROM PU-241	24.10	29.66	35.35				
TOTAL	192.24	192.45	192.78				
NET FROM U-238	13.68	13.62	13.57				
NET FROM U-238	0.	0.	0.				
TOTAL	205.92	206.07	206.34				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	37.12	30.32	23.67				
IN PU-239	26.96	30.65	34.60				
IN PU-241	7.95	9.79	11.67				
TOTAL	72.04	70.96	69.93				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	15.09	17.24	19.32				
TOTAL	15.09	17.24	19.32				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	9.88	8.13	6.36				
IN PU-241	2.98	3.68	4.39				
TOTAL	12.87	11.80	10.75				
TOTAL FISSION ABSORPTION	100.00	100.00	100.00				
				NON-FERTILE CAPTURE			
				IN U-236	-0.	0.64	0.97
				IN PU-242	1.89	2.36	2.41
				IN SPECIAL PRODUCTS	0.30	1.85	2.84
				TOTAL	2.19	4.86	6.23
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	3.70	4.21	3.97
				IN OTHER F.P.	0.	8.25	10.77
				IN STRUCT. + MOD. + IMPUR.	5.33	6.06	5.72
				CONTROL + LEAKAGE	15.78	15.80	15.82
				TOTAL	24.81	34.32	36.28
				NEUTRONS INTO OR FROM OTHER FUEL	18.71	0.	3.03
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	209.92	206.07	206.34
				FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	60.21	66.90	60.81

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	277	1855	682	6903	17	1208	13	378	0
AVERAGE	276	1700	679	6912	17	1210	13	378	0
FINAL	276	1677	675	6924	17	1212	13	379	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.5827	0.
FINAL	0.3598	0.6758	1.2959	0.0067	0.0733	0.0001	0.0993	2.3978	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	34.3	65.3	0.3	42.6	0.1	57.3	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0088	0.0000	0.0003	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	56.8	106.6	204.4	1.1	11.6	0.0	15.7	-29.2	-0.
GM/HWE-YR	8.51	15.99	30.66	0.16	1.73	0.00	2.35	-4.38	-0.
GM/MWH	0.0010	0.0018	0.0035	0.0000	0.0002	0.0000	0.0003	-0.0005	-0.
GM/TON	38.9	73.0	140.0	0.7	7.9	0.0	10.7	-20.0	-0.
WATTS/HWE-YR	0.	1.8	0.2	0.0	208.1	0.0	6.6	-2.5	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	277	1855	682	6903	17	1208	13	378	0
AVERAGE	275	1685	674	6923	17	1211	13	379	0
FINAL	274	1662	663	6945	17	1216	13	381	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.004	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.5827	0.
FINAL	0.8901	1.1636	2.5167	0.0167	0.2033	0.0006	0.3926	2.3575	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	31.7	67.9	0.5	34.3	0.1	65.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0244	0.0000	0.0011	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	70.2	91.8	198.5	1.3	16.0	0.0	31.0	-17.8	-0.
GM/MWE-YR	10.53	13.77	29.77	0.20	2.41	0.01	4.65	-2.66	-0.
GM/MWH	0.0012	0.0016	0.0034	0.0000	0.0003	0.0000	0.0005	-0.0003	-0.
GM/TON	96.2	125.7	271.9	1.8	22.0	0.1	42.4	-24.3	-0.
WATTS/MWE-YR	0.	1.5	0.2	0.0	288.7	0.0	13.0	-1.5	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	277	1855	682	6903	17	1208	13	378	0
AVERAGE	274	1674	668	6933	17	1213	13	379	0
FINAL	272	1644	648	6965	17	1219	13	382	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.006	0.006	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.5827	0.
FINAL	1.5441	1.5053	3.6730	0.0246	0.3299	0.0014	0.8726	2.4788	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	29.1	70.4	0.5	27.6	0.1	72.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0396	0.0000	0.0024	0.0014	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	81.2	79.1	193.1	1.3	17.3	0.1	45.9	-5.5	-0.
GM/MWE-YR	12.18	11.87	28.97	0.19	2.60	0.01	6.88	-0.82	-0.
GM/MWH	0.0014	0.0014	0.0033	0.0000	0.0003	0.0000	0.0008	-0.0001	-0.
GM/TON	166.8	162.6	396.8	2.7	35.6	0.2	94.3	-11.2	-0.
WATTS/MWE-YR	0.	1.3	0.2	0.0	312.2	0.0	19.3	-0.5	0.

EXPOSURE 20000.0 MW/D/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1003	
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	277	1855	682	6903	17	1208	13	378	0
AVERAGE	273	1665	661	6943	17	1215	13	380	0
FINAL	269	1626	632	6986	17	1223	13	384	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.004	0.004	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.007	0.007	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.5827	0.
FINAL	2.2874	1.7322	4.7769	0.0299	0.4367	0.0025	1.5338	2.7408	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	26.7	72.9	0.5	22.3	0.1	77.6	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0524	0.0000	0.0043	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	90.2	68.3	188.4	1.2	17.2	0.1	60.5	6.2	-0.
GM/MWE-YR	13.53	10.25	28.26	0.18	2.58	0.01	9.07	0.93	-0.
GM/MWH	0.0015	0.0012	0.0032	0.0000	0.0003	0.0000	0.0010	0.0001	-0.
GM/TON	247.1	187.1	516.1	3.2	47.2	0.3	165.7	17.1	-0.
WATTS/MWE-YR	0.	1.1	0.2	0.0	310.0	0.0	25.4	0.5	0.

EXPOSURE 23935.0 MW/D/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1003	
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	277	1855	682	6903	17	1208	13	378	0
AVERAGE	273	1657	655	6951	17	1216	13	381	0
FINAL	267	1612	618	7002	18	1226	13	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.005	0.005	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.007	0.009	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.5827	0.
FINAL	2.9162	1.8474	5.6161	0.0326	0.5055	0.0034	2.1783	3.0265	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	24.8	74.8	0.4	18.9	0.1	80.9	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0607	0.0000	0.0061	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	96.1	60.9	185.1	1.1	16.7	0.1	71.6	14.6	-0.
GM/MWE-YR	14.41	9.13	27.76	0.16	2.50	0.02	10.77	2.19	-0.
GM/MWH	0.0016	0.0010	0.0032	0.0000	0.0003	0.0000	0.0012	0.0003	-0.
GM/TON	315.1	199.6	606.8	3.5	54.6	0.4	235.3	47.9	-0.
WATTS/MWE-YR	0.	1.0	0.2	0.0	299.8	0.0	30.1	1.2	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1003

EXPOSURE 23935.0 MW/D/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.28 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/TON ***

0.	0.	2361.84	315.07	326.99	7657.1	3815.3	2759.5	1677.4	199.60	606.70	54.61	235.35
0.09	15.0	2361.84	315.08	330.26	7657.1	3815.7	2753.4	1677.4	205.62	606.71	51.24	234.97
0.18	30.0	2361.84	315.10	333.32	7657.1	3816.0	2747.4	1677.4	211.63	606.71	48.07	234.59
0.28	45.0	2361.84	315.11	336.18	7657.1	3816.4	2741.4	1677.4	217.62	606.71	45.10	234.21
0.37	60.0	2361.84	315.12	338.86	7657.1	3816.8	2735.4	1677.4	223.61	606.71	42.31	233.83
0.55	90.0	2361.84	315.15	343.71	7657.1	3817.5	2723.5	1677.4	235.53	606.70	37.25	233.08
0.74	120.0	2361.84	315.18	347.95	7657.1	3818.3	2711.6	1677.4	247.40	606.70	32.79	232.32
0.92	150.0	2361.84	315.21	351.65	7657.1	3819.0	2699.7	1677.4	259.21	606.70	28.86	231.57
1.10	180.0	2361.84	315.25	354.88	7657.1	3819.8	2687.9	1677.4	270.97	606.70	25.41	230.83
2.21	360.0	2361.84	315.47	367.08	7657.1	3824.2	2618.2	1677.4	340.44	606.72	11.82	226.39
4.41	720.0	2361.84	316.08	373.49	7657.2	3832.8	2484.2	1677.4	473.84	606.67	2.56	217.77
6.13	1000.0	2361.84	316.69	373.04	7657.2	3839.3	2384.7	1677.4	572.71	606.63	0.78	211.30

*** GM/MWE-YEAR ***

0.	0.	108.234	14.438	14.985	350.89	174.84	126.46	76.87	9.147	27.806	2.503	10.785
0.09	15.0	108.234	14.439	15.134	350.89	174.86	126.18	76.87	9.423	27.806	2.348	10.768
0.18	30.0	108.234	14.440	15.275	350.89	174.87	125.90	76.87	9.698	27.806	2.203	10.750
0.28	45.0	108.234	14.440	15.406	350.89	174.89	125.63	76.87	9.973	27.806	2.067	10.733
0.37	60.0	108.234	14.441	15.529	350.89	174.91	125.35	76.87	10.247	27.806	1.939	10.716
0.55	90.0	108.234	14.442	15.751	350.89	174.94	124.81	76.87	10.793	27.806	1.707	10.681
0.74	120.0	108.234	14.444	15.945	350.89	174.98	124.26	76.87	11.337	27.805	1.503	10.646
0.92	150.0	108.234	14.445	16.115	350.89	175.01	123.72	76.87	11.879	27.805	1.323	10.612
1.10	180.0	108.234	14.446	16.263	350.89	175.05	123.18	76.87	12.418	27.805	1.164	10.578
2.21	360.0	108.234	14.457	16.822	350.90	175.25	119.98	76.87	15.601	27.804	0.542	10.375
4.41	720.0	108.234	14.485	17.115	350.90	175.64	113.84	76.87	21.714	27.801	0.117	9.980
6.13	1000.0	108.234	14.513	17.095	350.90	175.94	109.28	76.87	26.245	27.799	0.036	9.683

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1003

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/MWH ***

0.	0.	0.0123	0.0016	0.0003	0.0025	0.0016	0.0023	0.0020	0.0010	0.0032	0.0003	0.0012
0.09	15.0	0.0123	0.0016	0.0003	0.0025	0.0016	0.0022	0.0020	0.0011	0.0032	0.0003	0.0012
0.18	30.0	0.0123	0.0016	0.0003	0.0025	0.0016	0.0022	0.0020	0.0011	0.0032	0.0003	0.0012
0.28	45.0	0.0123	0.0016	0.0003	0.0025	0.0016	0.0022	0.0020	0.0011	0.0032	0.0002	0.0012
0.37	60.0	0.0123	0.0016	0.0003	0.0025	0.0016	0.0021	0.0020	0.0012	0.0032	0.0002	0.0012
0.55	90.0	0.0123	0.0016	0.0003	0.0025	0.0016	0.0021	0.0020	0.0012	0.0032	0.0002	0.0012
0.74	120.0	0.0123	0.0016	0.0004	0.0025	0.0016	0.0020	0.0020	0.0013	0.0032	0.0002	0.0012
0.92	150.0	0.0123	0.0016	0.0004	0.0025	0.0016	0.0019	0.0020	0.0014	0.0032	0.0002	0.0012
1.10	180.0	0.0123	0.0016	0.0004	0.0025	0.0017	0.0019	0.0020	0.0014	0.0032	0.0001	0.0012
2.21	360.0	0.0123	0.0016	0.0005	0.0025	0.0017	0.0015	0.0020	0.0018	0.0032	0.0001	0.0012
4.41	720.0	0.0123	0.0017	0.0005	0.0025	0.0017	0.0008	0.0020	0.0025	0.0032	0.0000	0.0011
6.13	1000.0	0.0123	0.0017	0.0005	0.0025	0.0018	0.0003	0.0020	0.0030	0.0032	0.0000	0.0011

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	8.3914	0.	0.	0.	0.	0.101	0.	300.31	30.198
0.09	15.0	0.	0.	8.4752	0.	0.	0.	0.	0.104	0.	281.76	30.150
0.18	30.0	0.	0.	8.5538	0.	0.	0.	0.	0.107	0.	264.35	30.101
0.28	45.0	0.	0.	8.6272	0.	0.	0.	0.	0.110	0.	248.02	30.052
0.37	60.0	0.	0.	8.6960	0.	0.	0.	0.	0.113	0.	232.70	30.004
0.55	90.0	0.	0.	8.8204	0.	0.	0.	0.	0.119	0.	204.83	29.907
0.74	120.0	0.	0.	8.9292	0.	0.	0.	0.	0.125	0.	180.30	29.816
0.92	150.0	0.	0.	9.0242	0.	0.	0.	0.	0.131	0.	158.71	29.714
1.10	180.0	0.	0.	9.1071	0.	0.	0.	0.	0.137	0.	139.71	29.618
2.21	360.0	0.	0.	9.4201	0.	0.	0.	0.	0.172	0.	64.99	29.049
4.41	720.0	0.	0.	9.5846	0.	0.	0.	0.	0.239	0.	14.07	27.943
6.13	1000.0	0.	0.	9.5731	0.	0.	0.	0.	0.289	0.	4.28	27.112

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1003

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

TIME AFTER REACTOR DISCHARGE UNITS OF 0.45 YEAR HALF-LIFE	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
0.	0.	0.25	100.00	2.01	47.16	23.50	17.00	10.33	24.75	75.25	18.83	81.17
0.09	15.0	0.25	100.00	2.03	47.17	23.50	16.96	10.33	25.31	74.69	17.90	82.10
0.18	30.0	0.25	100.00	2.05	47.17	23.51	16.93	10.33	25.86	74.14	17.01	82.99
0.28	45.0	0.25	100.00	2.07	47.18	23.52	16.89	10.34	26.40	73.60	16.15	83.85
0.37	60.0	0.25	100.00	2.09	47.19	23.52	16.86	10.34	26.93	73.07	15.32	84.68
0.55	90.0	0.25	100.00	2.12	47.21	23.54	16.79	10.34	27.96	72.04	13.78	86.22
0.74	120.0	0.25	100.00	2.15	47.23	23.55	16.73	10.35	28.96	71.04	12.37	87.63
0.92	150.0	0.25	100.00	2.17	47.25	23.57	16.66	10.35	29.93	70.07	11.08	88.92
1.10	180.0	0.25	100.00	2.19	47.27	23.58	16.60	10.36	30.87	69.13	9.91	90.09
2.21	360.0	0.25	100.00	2.27	47.43	23.69	16.22	10.39	35.94	64.06	4.96	95.04
4.41	720.0	0.25	100.00	2.33	47.78	23.92	15.50	10.47	43.85	56.15	1.16	98.84
6.13	1000.0	0.25	100.00	2.34	48.06	24.10	14.97	10.53	48.56	51.44	0.37	99.63

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1003

EXPOSURE 23935.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.28 YRS.

LOAD FACTOR 0.33

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM RECOVERED... U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED..... PU238 PU239 PU240 PU241 PU242 NP237 AM241
			0.970 0.970	0.950	0.970 0.970 0.970 0.970 0.970 0. 0.
0.74	120.0	0.	2290.99 926490.7	299.42	337.51 7427.4 3703.7 2630.2 1627.1 0. 0.
0.83	135.0	15.0	2290.99 926490.7	299.42	337.40 7427.4 3703.7 2624.5 1627.1 0.00 5.75
1.00	163.0	43.0	2290.99 926490.7	299.42	337.20 7427.4 3703.7 2613.8 1627.1 0.00 16.45
2.00	326.0	206.0	2290.99 926490.7	299.42	336.03 7427.4 3703.7 2552.3 1627.1 0.03 77.87
3.00	489.0	369.0	2290.99 926490.7	299.42	334.86 7427.4 3703.7 2492.3 1627.1 0.11 137.80
4.00	652.0	532.0	2290.99 926490.7	299.42	333.70 7427.4 3703.7 2433.7 1627.1 0.22 196.28
5.00	815.0	695.0	2290.99 926490.7	299.42	332.54 7427.4 3703.7 2376.5 1627.1 0.37 253.34
6.00	978.0	858.0	2290.99 926490.7	299.42	331.39 7427.4 3703.7 2320.6 1627.1 0.56 309.02
7.00	1141.0	1021.0	2290.99 926490.7	299.42	330.24 7427.4 3703.7 2266.1 1627.1 0.79 363.34

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUM RECOVERED..... AM241 AM243 NP237 PU239	CURIUM RECOVERED..... CM242 CM244 PU238 PU240
			0.950 0.950 0. 0.	0.950 0.950 0. 0.
0.74	120.0	0.	235.03 576.42 0. 0.	31.15 220.71 0. 0.
0.83	135.0	15.0	235.01 576.42 0.01 0.00	29.22 220.35 1.92 0.36
1.00	163.0	43.0	234.98 576.41 0.04 0.01	25.94 219.69 5.20 1.02
2.00	326.0	206.0	234.83 576.39 0.20 0.03	12.97 215.86 18.13 9.85
3.00	489.0	369.0	234.67 576.37 0.36 0.05	6.49 212.10 24.54 8.61
4.00	652.0	532.0	234.51 576.34 0.52 0.08	3.24 208.41 27.69 12.30
5.00	815.0	695.0	234.35 576.32 0.68 0.10	1.62 204.78 29.21 15.93
6.00	978.0	858.0	234.19 576.30 0.83 0.12	0.81 201.21 29.92 19.50
7.00	1141.0	1021.0	234.03 576.27 0.99 0.15	0.41 197.70 30.22 23.00

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MNE-YEAR ***

CASE NUMBER 1003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	104.99	42457.42	13.72	15.47	340.37	169.73	120.53	74.56	0.	0.
0.83	135.0	15.0	104.99	42457.42	13.72	15.46	340.37	169.73	120.27	74.56	0.00	0.26
1.00	163.0	43.0	104.99	42457.42	13.72	15.45	340.37	169.73	119.78	74.56	0.00	0.75
2.00	326.0	206.0	104.99	42457.42	13.72	15.40	340.37	169.73	116.96	74.56	0.00	3.57
3.00	489.0	369.0	104.99	42457.42	13.72	15.35	340.37	169.73	114.21	74.56	0.00	6.31
4.00	652.0	532.0	104.99	42457.42	13.72	15.29	340.37	169.73	111.53	74.56	0.01	8.99
5.00	815.0	695.0	104.99	42457.42	13.72	15.24	340.37	169.73	108.91	74.56	0.02	11.61
6.00	978.0	858.0	104.99	42457.42	13.72	15.19	340.37	169.73	106.35	74.56	0.03	14.16
7.00	1141.0	1021.0	104.99	42457.42	13.72	15.13	340.37	169.73	103.85	74.56	0.04	16.65

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	10.77	26.42	0.	0.	1.43	10.11	0.	0.
0.83	135.0	15.0	10.77	26.41	0.00	0.0001	1.34	10.10	0.09	0.02
1.00	163.0	43.0	10.77	26.41	0.00	0.0003	1.19	10.07	0.24	0.05
2.00	326.0	206.0	10.76	26.41	0.01	0.0013	0.59	9.89	0.83	0.22
3.00	489.0	369.0	10.75	26.41	0.02	0.0024	0.30	9.72	1.12	0.39
4.00	652.0	532.0	10.75	26.41	0.02	0.0035	0.15	9.55	1.2	0.56
5.00	815.0	695.0	10.74	26.41	0.03	0.0046	0.07	9.38	1.34	0.73
6.00	978.0	858.0	10.73	26.41	0.04	0.0056	0.04	9.22	1.37	0.89
7.00	1141.0	1021.0	10.72	26.41	0.05	0.0067	0.02	9.06	1.39	1.05

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 1003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0016	0.0018	0.	0.
0.83	135.0	15.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0015	0.0018	0.0000	0.0000
1.00	163.0	43.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0015	0.0018	0.0000	0.0001
2.00	326.0	206.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0012	0.0018	0.0000	0.0004
3.00	489.0	369.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0009	0.0018	0.0000	0.0007
4.00	652.0	532.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0006	0.0018	0.0000	0.0010
5.00	815.0	695.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	0.0003	0.0018	0.0000	0.0013
6.00	978.0	858.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	-0.0000	0.0018	0.0000	0.0016
7.00	1141.0	1021.0	0.0120	-0.3096	0.0016	0.0003	0.0013	0.0010	-0.0003	0.0018	0.0000	0.0019

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0012	0.0030	0.	0.	0.0002	0.0012	0.	0.
0.83	135.0	15.0	0.0012	0.0030	0.0000	0.0000	0.0002	0.0012	0.0000	0.0000
1.00	163.0	43.0	0.0012	0.0030	0.0000	0.0000	0.0001	0.0011	0.0000	0.0000
2.00	326.0	206.0	0.0012	0.0030	0.0000	0.0000	0.0001	0.0011	0.0001	0.0000
3.00	489.0	369.0	0.0012	0.0030	0.0000	0.0000	0.0000	0.0011	0.0001	0.0000
4.00	652.0	532.0	0.0012	0.0030	0.0000	0.0000	0.0000	0.0011	0.0001	0.0001
5.00	815.0	695.0	0.0012	0.0030	0.0000	0.0000	0.0000	0.0011	0.0002	0.0001
6.00	978.0	858.0	0.0012	0.0030	0.0000	0.0000	0.0000	0.0011	0.0002	0.0001
7.00	1141.0	1021.0	0.0012	0.0030	0.0000	0.0000	0.0000	0.0010	0.0002	0.0001

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	8.6613	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	8.6585	0.	0.	0.	0.	0.	0.003
1.00	163.0	43.0	0.	0.	0.	8.6534	0.	0.	0.	0.	0.	0.008
2.00	326.0	206.0	0.	0.	0.	8.6234	0.	0.	0.	0.	0.	0.039
3.00	489.0	369.0	0.	0.	0.	8.5934	0.	0.	0.	0.	0.	0.069
4.00	652.0	532.0	0.	0.	0.	8.5636	0.	0.	0.	0.	0.	0.099
5.00	815.0	695.0	0.	0.	0.	8.5339	0.	0.	0.	0.	0.	0.128
6.00	978.0	858.0	0.	0.	0.	8.5043	0.	0.	0.	0.	0.	0.156
7.00	1141.0	1021.0	0.	0.	0.	8.4748	0.	0.	0.	0.	0.	0.183

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.118	0.	0.	0.	171.29	28.320	0.	0.
0.83	135.0	15.0	0.118	0.	0.	0.	160.71	28.274	0.0494	0.
1.00	163.0	43.0	0.118	0.	0.	0.	142.67	28.189	0.1335	0.
2.00	326.0	206.0	0.118	0.	0.	0.	71.35	27.698	0.4652	0.
3.00	489.0	369.0	0.118	0.	0.	0.	35.68	27.215	0.6297	0.
4.00	652.0	532.0	0.118	0.	0.	0.	17.84	26.741	0.7106	0.
5.00	815.0	695.0	0.118	0.	0.	0.	8.92	26.275	0.7497	0.
6.00	978.0	858.0	0.118	0.	0.	0.	4.46	25.818	0.7679	0.
7.00	1141.0	1021.0	0.118	0.	0.	0.	2.23	25.368	0.7756	0.

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.25	99.75	100.00	2.15	47.23	23.55	16.73	10.35	100.00	100.00
0.83	135.0	15.0	0.25	99.75	100.00	2.15	47.25	23.56	16.69	10.35	100.00	100.00
1.00	163.0	43.0	0.25	99.75	100.00	2.15	47.28	23.58	16.64	10.36	100.00	100.00
2.00	326.0	206.0	0.25	99.75	100.00	2.15	47.47	23.67	16.31	10.40	100.00	100.00
3.00	489.0	369.0	0.25	99.75	100.00	2.15	47.66	23.76	15.99	10.44	100.00	100.00
4.00	652.0	532.0	0.25	99.75	100.00	2.15	47.84	23.86	15.68	10.48	100.00	100.00
5.00	815.0	695.0	0.25	99.75	100.00	2.15	48.02	23.95	15.36	10.52	100.00	100.00
6.00	978.0	858.0	0.25	99.75	100.00	2.15	48.20	24.03	15.06	10.56	100.00	100.00
7.00	1141.0	1021.0	0.25	99.75	100.00	2.15	48.37	24.12	14.76	10.60	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	28.96	71.04	100.00	100.00	12.37	87.63	0.	0.
0.83	135.0	15.0	28.96	71.04	100.00	100.00	11.71	88.29	84.36	15.64
1.00	163.0	43.0	28.96	71.04	100.00	100.00	10.56	89.44	83.60	16.40
2.00	326.0	206.0	28.95	71.05	100.00	100.00	5.67	94.33	78.90	21.10
3.00	489.0	369.0	28.93	71.07	100.00	100.00	2.97	97.03	74.03	25.97
4.00	652.0	532.0	28.92	71.08	100.00	100.00	1.53	98.47	69.24	30.76
5.00	815.0	695.0	28.91	71.09	100.00	100.00	0.79	99.21	64.71	35.29
6.00	978.0	858.0	28.90	71.10	100.00	100.00	0.40	99.60	60.55	39.45
7.00	1141.0	1021.0	28.88	71.12	100.00	100.00	0.20	99.80	56.78	43.22

*** SPECIAL PRODUCT CONCENTRATIONS ***
 PLUTONIUM RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 1003

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
 F = CM243 G = CM244 H = PU238 I = EP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 600.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1100

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/T	24442.0	INITIAL FLUX, N/SO CM=SEC	1.20E 13	FISSILE RATIO	0.51	U235 IN TAILS/U235=ENR	0.39				
POWER DENS, MW/T	15.00	AVG FLUX, NEUT/SO CM=SEC	1.23E 13	INITIAL CONV RATIO	0.56	KG NATURAL/KG PRODUCED	4.793				
RESIDENCE TIME, YRS	5.58	MAX FLUX/MIN FLUX	1.22	NONFUEL X=SECT 1/CM	0.042	KG NAT U/MWE=YR	103.635				
TOTAL ENRICHMENT	2.42	AVG NEUTRON TEMP, C	346.	FUEL DENSITY	8.82	AVERAGE R	0.184				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE:	0.50	WATTS/CC	105.79	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.250	FINAL INTEGRATED REACTIVITY	1.100	FINAL REACTIVITY	0.991	REACTIVITY CHANGE/MWD, MK	0.0106				
ISOTOPES	TH232:	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION=INITIAL	0.	624	0	0	475	0	0.	1230	0	1184	0
AVERAGE	0.	633	0	0	482	0	0.	1112	0	1117	0
FINAL	0.	633	0	0	491	0	0.	1081	0	1105	0
ABSORPTION=INITIAL	32.72	699	212	157	580	97	9.27	1940	2251	1656	308
AVERAGE	34.96	711	226	164	592	81	9.79	1721	1349	1546	328
FINAL	36.72	711	226	164	605	71	9.65	1665	934	1526	315
MACROSCOPIC CROSS SECTION											
FISSION=INITIAL	0.	0.	0.	0.	0.260	0.	0.	0.	0.	0.	0.
AVERAGE	0.	0.000	0.	0.	0.150	0.	0.	0.087	0.	0.010	0.
FINAL	0.	0.000	0.	0.	0.074	0.	0.	0.116	0.	0.024	0.
ABSORPTION=INITIAL	0.	0.	0.	0.	0.317	0.	0.202	0.	0.	0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.184	0.003	0.211	0.135	0.025	0.014	0.001
FINAL	0.000	0.000	0.000	0.000	0.092	0.005	0.206	0.179	0.045	0.033	0.002
ALPHA	0.	0.120	0.	0.	0.221	0.	0.	0.577	0.	0.398	0.
AVERAGE	0.	0.123	0.	0.	0.228	0.	0.	0.548	0.	0.383	0.
FINAL	0.	0.123	0.	0.	0.232	0.	0.	0.540	0.	0.381	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	54.0	0.	9.3	32.7	0.	4.0	0.
ETA	0.	2.23	0.	0.	1.98	0.	0.	1.86	0.	2.19	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.54	0.	1.34	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.558	0.	0.	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1100

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	2.42	0.	0.	-0.	0.	-0.	0.
FINAL	0.	0.00	0.	0.	0.67	0.	0.	0.48	0.	0.18	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	2.5	-0.	97.5	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	0.7	0.3	99.0	58.3	26.1	11.7	4.0
ISOTOPIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.2133	0.	8.6025	-0.	-0.	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0592	0.0259	8.4246	0.0427	0.0192	0.0086	0.0029
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.2	-3133.7	526.8	-3614.7	867.9	389.5	175.3	59.8
GM/MWE-YR	0.0	0.0	0.0	0.0	-783.4	131.7	-903.7	217.0	97.4	43.8	15.0
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0894	0.0150	-0.1032	0.0248	0.0111	0.0058	0.0017
GM/TON	0.0	0.0	0.0	0.9	-17486.8	2939.8	-20170.9	4843.3	2173.3	978.1	333.9
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.2	1203.2	526.8	171255.	867.9	389.5	175.3	59.8
GM/MWE-YR	0.	0.0	0.0	0.0	300.8	131.7	42813.	217.	97.	44.	15.
GM/TON	0.	0.0	0.0	0.9	6714.1	2939.8	955651.	4843.3	2173.3	978.1	333.9

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1100

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/TON 24442.0 INITIAL ENRICH. 2.42 POWER DENS. MW/T 0. AV. NEUTRON TEMPERATURE, C 346.
 RESIDENCE TIME, YRS 5.58 AVERAGE R 0.184 KW/GRAMS FISSILE 0.50 AVERAGE FLUX, NEUT/SQ CM-SEC 1.23E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	=0.	0.00	0.00				
FROM U-235	199.34	109.46	59.67				
FROM PU-239	=0.	75.49	110.45				
FROM PU-241	=0.	9.40	23.75				
TOTAL	199.34	194.34	193.87				
NET FROM U-238	12.78	12.38	12.25				
NET FROM U-238	0.	0.	0.				
TOTAL	212.12	206.72	206.13				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	=0.	0.00	0.00	IN U-236	=0.	0.87	1.18
IN U-235	81.90	45.01	24.52	IN PU-242	=0.	0.19	0.58
IN PU-239	=0.	26.20	38.28	IN SPECIAL PRODUCTS	=0.	0.48	1.21
IN PU-241	=0.	3.10	7.84	TOTAL	=0.	1.54	2.96
TOTAL	81.90	74.31	70.64				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	=0.	0.00	0.00	IN SM + XE	4.27	4.25	3.87
IN PU-239	=0.	14.29	20.68	IN OTHER F.P.	0.	9.82	13.03
TOTAL	=0.	14.29	20.68	IN STRUCT. + MOD. + IMPUR.	7.25	7.21	6.56
				CONTROL + LEAKAGE	19.28	18.70	18.74
				TOTAL	30.81	40.13	42.20
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL			
IN U-235	18.10	10.21	5.69	IN PA-233 NON-FERTILE CAPTURE	=0.	0.00	0.00
IN PU-241	=0.	1.19	2.99	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	18.10	11.40	8.68	TOTAL ABSORPTION + LEAKAGE	212.12	206.72	206.13
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	55.87	65.05	62.77

EXPOSURE 3000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES.	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1515	365	7692	18	1242	13	413	0
AVERAGE	221	1276	374	7074	18	1238	13	411	0
FINAL	223	1272	384	7059	18	1236	13	410	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL	0.1829	0.0017	0.0001	0.0000	0.0001	0.0000	0.0000	0.0044	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.
FINAL	100.0	94.5	5.1	0.4	97.9	0.1	2.0	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	30.3	0.3	0.0	0.0	0.0	0.0	0.0	0.7	=0.
GM/MWE-YR	7.57	0.07	0.00	0.00	0.00	0.00	0.00	0.18	=0.
GM/MWM	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	=0.
GM/TON	20.7	0.2	0.0	0.0	0.0	0.0	0.0	0.5	=0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.

EXPOSURE 6000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1315	365	7092	18	1242	13	413	0
AVERAGE	222	1273	381	7063	18	1236	13	410	0
FINAL	224	1270	393	7048	18	1234	13	409	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	0.4568	0.0174	0.0021	0.0001	0.0014	0.0000	0.0001	0.0208	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	88.7	10.7	0.6	94.7	0.1	5.1	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	37.8	1.4	0.2	0.0	0.1	0.0	0.0	1.7	-0.
GM/MWE=YR	9.46	0.36	0.04	0.00	0.03	0.00	0.00	0.43	-0.
GM/MWH	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.
GM/TON	51.8	2.0	0.2	0.0	0.2	0.0	0.0	2.4	-0.
WATTS/MWE=YR	0.	0.0	0.0	0.0	3.5	0.0	0.0	0.2	0.

EXPOSURE 9000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1315	365	7092	18	1242	13	413	0
AVERAGE	223	1272	384	7058	18	1235	13	410	0
FINAL	224	1266	398	7048	18	1234	13	409	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	0.7952	0.0577	0.0117	0.0005	0.0063	0.0000	0.0007	0.0546	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	82.6	16.6	0.7	90.3	0.2	9.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0008	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	43.9	3.2	0.6	0.0	0.3	0.0	0.0	3.0	-0.
GM/MWE=YR	10.98	0.80	0.16	0.01	0.09	0.00	0.01	0.75	-0.
GM/MWH	0.0013	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	-0.
GM/TON	90.2	6.5	1.3	0.1	0.7	0.0	0.1	6.2	-0.
WATTS/MWE=YR	0.	0.1	0.0	0.0	10.4	0.0	0.0	0.4	0.

EXPOSURE 12000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP #0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1315	365	7092	18	1242	13	413	0
AVERAGE	223	1269	389	7055	18	1235	13	409	0
FINAL	224	1260	399	7053	18	1235	13	409	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0
FINAL	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINAL	1.1813	0.1240	0.0372	0.0813	0.0165	0.0004	0.0030	0.1125	0.0
PERCENT OF ELEMENT COMPOSITION									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINAL	100.0	76.5	22.8	0.8	84.7	0.3	15.0	100.0	0.0
HEAT OUTPUT, WATTS/CC	0.0	0.0000	0.0000	0.0000	0.0020	0.0000	0.0000	0.0001	0.0
NET ISOTOPIC PRODUCTION									
GM/TON=YR	48.9	5.1	1.5	0.1	0.7	0.0	0.1	4.7	0.0
GM/MWE=YR	12.23	1.28	0.39	0.01	0.17	0.00	0.03	1.16	0.0
GM/MWH	0.0014	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0
GM/TON	134.0	14.1	4.2	0.1	1.9	0.0	0.3	12.8	0.0
WATTS/MWE=YR	0.0	0.1	0.0	0.0	20.5	0.0	0.1	0.7	0.0

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP #0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1315	365	7092	18	1242	13	413	0
AVERAGE	223	1267	391	7056	18	1235	13	409	0
FINAL	223	1254	399	7062	18	1236	13	410	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.0
FINAL	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.0
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINAL	1.6023	0.2122	0.0883	0.0024	0.0328	0.0001	0.0092	0.2005	0.0
PERCENT OF ELEMENT COMPOSITION									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FINAL	100.0	70.2	29.0	0.8	78.0	0.3	21.6	100.0	0.0
HEAT OUTPUT, WATTS/CC	0.0	0.0000	0.0000	0.0000	0.0039	0.0000	0.0000	0.0001	0.0
NET ISOTOPIC PRODUCTION									
GM/TON=YR	53.1	7.0	2.9	0.1	1.1	0.0	0.3	4.6	0.0
GM/MWE=YR	13.27	1.76	0.73	0.02	0.27	0.00	0.08	1.66	0.0
GM/MWH	0.0015	0.0002	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002	0.0
GM/TON	181.8	24.1	10.0	0.3	3.7	0.0	1.0	22.7	0.0
WATTS/MWE=YR	0.0	0.2	0.0	0.0	32.6	0.0	0.2	0.9	0.0

EXPOSURE 24442.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1100

ISOTOPES:	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-00
HALF LIFE:	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	221	1315	365	7092	18	1242	13	413	0
AVERAGE	222	1258	392	7064	18	1236	13	410	0
FINAL	221	1233	389	7097	18	1242	13	413	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/00									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	3.0555	0.5534	0.5201	0.0070	0.1170	0.0008	0.1001	0.7235	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	51.4	47.9	0.6	53.9	0.4	45.7	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0140	0.0000	0.0003	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	62.1	11.2	10.6	0.1	2.4	0.0	2.0	14.7	-0.
GM/MWE-YR	15.53	2.81	2.64	0.04	0.59	0.00	0.51	3.68	-0.
GM/MWH	0.0018	0.0003	0.0003	0.0000	0.0001	0.0000	0.0001	0.0004	-0.
GM/TON	346.6	62.8	59.0	0.8	13.3	0.1	11.4	82.1	-0.
WATTS/MWE-YR	0.	0.3	0.0	0.0	71.4	0.0	1.4	2.1	0.

GRADED FINAL K 1.100

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 1100

EXPOSURE 24442.0 MWD/Y
THERMAL TO ELECTRICAL EFF.

POWER DENS 15.00 MW/Y

RESIDENCE TIME 5.58 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***												
0.	0.	2939.76	346.60	82.07	4843.3	2173.3	978.4	333.9	62.77	58.99	13.27	11.36
0.09	15.0	2939.76	346.60	82.87	4843.3	2173.3	976.0	333.9	64.91	58.99	12.45	11.34
0.18	30.0	2939.76	346.61	83.61	4843.3	2173.3	973.9	333.9	67.04	58.99	11.68	11.32
0.28	45.0	2939.76	346.61	84.30	4843.3	2173.3	971.7	333.9	69.16	58.99	10.96	11.30
0.37	60.0	2939.76	346.61	84.95	4843.3	2173.3	969.4	333.9	71.28	58.99	10.28	11.29
0.55	90.0	2939.76	346.62	86.13	4843.3	2173.4	965.4	333.9	75.51	58.99	9.05	11.25
0.74	120.0	2939.76	346.63	87.16	4843.3	2173.4	961.2	333.9	79.72	58.99	7.97	11.21
0.92	150.0	2939.76	346.64	88.06	4843.3	2173.4	957.0	333.9	83.91	58.99	7.01	11.18
1.10	180.0	2939.76	346.65	88.84	4843.3	2173.5	952.8	333.9	88.08	58.99	6.17	11.14
2.21	360.0	2939.76	346.73	91.80	4843.4	2173.7	928.1	333.9	112.71	58.99	2.87	10.93
4.41	720.0	2939.76	346.93	93.33	4843.4	2174.1	880.6	333.9	160.01	58.99	0.62	10.51
6.13	1000.0	2939.76	347.14	93.21	4843.4	2174.4	845.3	333.9	195.06	58.99	0.19	10.20
*** GM/MWE-YEAR ***												
0.	0.	131.923	15.554	3.683	217.35	97.53	43.89	14.98	2.817	2.647	0.596	0.510
0.09	15.0	131.923	15.554	3.719	217.35	97.53	43.80	14.98	2.913	2.647	0.559	0.509
0.18	30.0	131.923	15.554	3.752	217.35	97.53	43.70	14.98	3.008	2.647	0.524	0.508
0.28	45.0	131.923	15.554	3.783	217.35	97.53	43.61	14.98	3.104	2.647	0.492	0.507
0.37	60.0	131.923	15.554	3.812	217.35	97.53	43.51	14.98	3.199	2.647	0.461	0.506
0.55	90.0	131.923	15.555	3.865	217.35	97.53	43.32	14.98	3.389	2.647	0.406	0.505
0.74	120.0	131.923	15.555	3.911	217.35	97.53	43.13	14.98	3.577	2.647	0.358	0.503
0.92	150.0	131.923	15.556	3.952	217.35	97.53	42.94	14.98	3.765	2.647	0.315	0.502
1.10	180.0	131.923	15.556	3.987	217.35	97.54	42.76	14.98	3.953	2.647	0.277	0.500
2.21	360.0	131.923	15.560	4.119	217.35	97.55	41.65	14.98	5.058	2.647	0.129	0.490
4.41	720.0	131.923	15.569	4.188	217.35	97.56	39.52	14.98	7.180	2.647	0.028	0.472
6.13	1000.0	131.923	15.578	4.183	217.35	97.58	37.93	14.98	8.753	2.647	0.008	0.458

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1100

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.0150	0.0018	0.0004	0.0248	0.0111	0.0050	0.0017	0.0003	0.0003	0.0001	0.0001
0.09	15.0	0.0150	0.0018	0.0004	0.0248	0.0111	0.0050	0.0017	0.0003	0.0003	0.0001	0.0001
0.18	30.0	0.0150	0.0019	0.0004	0.0248	0.0111	0.0050	0.0017	0.0003	0.0003	0.0001	0.0001
0.28	45.0	0.0150	0.0018	0.0004	0.0248	0.0111	0.0050	0.0017	0.0004	0.0003	0.0001	0.0001
0.37	60.0	0.0150	0.0018	0.0004	0.0248	0.0111	0.0050	0.0017	0.0004	0.0003	0.0001	0.0001
0.55	90.0	0.0150	0.0019	0.0004	0.0248	0.0111	0.0049	0.0017	0.0004	0.0003	0.0000	0.0001
0.74	120.0	0.0150	0.0018	0.0004	0.0248	0.0111	0.0049	0.0017	0.0004	0.0003	0.0000	0.0001
0.92	150.0	0.0150	0.0018	0.0005	0.0248	0.0111	0.0049	0.0017	0.0004	0.0003	0.0000	0.0001
1.10	180.0	0.0150	0.0018	0.0005	0.0248	0.0111	0.0049	0.0017	0.0003	0.0003	0.0000	0.0001
2.21	360.0	0.0150	0.0018	0.0005	0.0248	0.0111	0.0048	0.0017	0.0003	0.0003	0.0000	0.0001
4.41	720.0	0.0150	0.0018	0.0005	0.0248	0.0111	0.0045	0.0017	0.0003	0.0003	0.0000	0.0001
6.13	1000.0	0.0150	0.0018	0.0005	0.0248	0.0111	0.0043	0.0017	0.0003	0.0003	0.0000	0.0001

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	2.0625	0.	0.	0.	0.	0.031	0.	71.47	1.427
0.09	15.0	0.	0.	2.0825	0.	0.	0.	0.	0.032	0.	67.06	1.425
0.18	30.0	0.	0.	2.1011	0.	0.	0.	0.	0.033	0.	62.91	1.423
0.28	45.0	0.	0.	2.1186	0.	0.	0.	0.	0.034	0.	59.03	1.420
0.37	60.0	0.	0.	2.1349	0.	0.	0.	0.	0.039	0.	55.38	1.418
0.55	90.0	0.	0.	2.1645	0.	0.	0.	0.	0.037	0.	48.75	1.418
0.74	120.0	0.	0.	2.1903	0.	0.	0.	0.	0.039	0.	42.91	1.409
0.92	150.0	0.	0.	2.2129	0.	0.	0.	0.	0.041	0.	37.77	1.404
1.10	180.0	0.	0.	2.2326	0.	0.	0.	0.	0.043	0.	33.25	1.400
2.21	360.0	0.	0.	2.3069	0.	0.	0.	0.	0.056	0.	15.47	1.373
4.41	720.0	0.	0.	2.3455	0.	0.	0.	0.	0.079	0.	3.35	1.321
6.13	1000.0	0.	0.	2.3424	0.	0.	0.	0.	0.094	0.	1.02	1.282

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1100

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.30	100.00	0.98	57.59	25.84	11.63	3.97	51.55	48.45	53.88	46.12
0.09	15.0	0.30	100.00	0.99	57.59	25.84	11.61	3.97	52.30	47.61	52.33	47.67
0.18	30.0	0.30	100.00	0.99	57.60	25.85	11.58	3.97	53.19	46.81	50.78	49.22
0.28	45.0	0.30	100.00	1.00	57.61	25.85	11.56	3.97	53.97	46.03	49.23	50.77
0.37	60.0	0.30	100.00	1.01	57.62	25.86	11.54	3.97	54.72	45.28	47.68	52.32
0.55	90.0	0.30	100.00	1.03	57.64	25.87	11.49	3.97	56.14	43.86	44.59	55.41
0.74	120.0	0.30	100.00	1.04	57.67	25.88	11.44	3.97	57.47	42.53	41.54	58.46
0.92	150.0	0.30	100.00	1.05	57.69	25.89	11.40	3.98	58.72	41.28	38.56	61.44
1.10	180.0	0.30	100.00	1.06	57.71	25.90	11.35	3.98	59.89	40.11	35.66	64.34
2.21	360.0	0.30	100.00	1.10	57.86	25.97	11.09	3.99	65.64	34.36	20.81	79.19
4.41	720.0	0.30	100.00	1.12	58.18	26.11	10.58	4.01	73.07	26.93	5.58	94.42
6.13	1000.0	0.30	100.00	1.12	58.42	26.23	10.20	4.03	76.78	23.22	1.82	98.18

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1100

EXPOSURE 24442.0 MW/DY POWER DENS 15.00 MW/T RESIDENCE TIME 5.98 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM ..RECOVERED... U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED..... PU238 PU239 PU240 PU241 PU242 NP237 AM241
			0.970 0.970	0.950	0.970 0.970 0.970 0.970 0.970 0.
0.74	120.0	0.	2851.56 933495.4	329.30	84.94 4698.0 2108.2 932.3 323.8 0. 0.
0.83	135.0	15.0	2851.56 933495.4	329.30	84.52 4698.0 2108.2 930.3 323.8 0.00 2.04
1.00	163.0	43.0	2851.56 933495.4	329.30	84.47 4698.0 2108.2 926.5 323.8 0.00 5.83
2.00	326.0	206.0	2851.56 933495.4	329.30	84.17 4698.0 2108.2 904.7 323.8 0.01 27.60
3.00	489.0	369.0	2851.56 933495.4	329.30	83.88 4698.0 2108.2 883.4 323.8 0.04 48.84
4.00	652.0	532.0	2851.56 933495.4	329.30	83.59 4698.0 2108.2 862.7 323.8 0.08 69.57
5.00	815.0	695.0	2851.56 933495.4	329.30	83.30 4698.0 2108.2 842.4 323.8 0.13 89.80
6.00	978.0	858.0	2851.56 933495.4	329.30	83.01 4698.0 2108.2 822.6 323.8 0.20 109.54
7.00	1141.0	1021.0	2851.56 933495.4	329.30	82.72 4698.0 2108.2 803.2 323.8 0.28 128.79

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUMRECOVERED..... AM241 AM243 NP237 PU239	CURIUMRECOVERED..... CM242 CM244 PU238 PU240
			0.950 0.950 0. 0.	0.950 0.950 0. 0.
0.74	120.0	0.	75.73 56.04 0. 0.	7.97 10.65 0. 0.
0.83	135.0	15.0	75.73 56.04 0.00 0.00	7.10 10.64 0.47 0.02
1.00	163.0	43.0	75.72 56.04 0.01 0.00	6.31 10.60 1.26 0.05
2.00	326.0	206.0	75.67 56.04 0.06 0.00	3.15 10.42 4.41 0.23
3.00	489.0	369.0	75.62 56.04 0.12 0.01	1.98 10.24 5.96 0.42
4.00	652.0	532.0	75.57 56.03 0.17 0.01	0.79 10.06 6.73 0.59
5.00	815.0	695.0	75.52 56.03 0.22 0.01	0.39 9.88 7.10 0.77
6.00	978.0	858.0	75.46 56.03 0.27 0.01	0.20 9.71 7.27 0.94
7.00	1141.0	1021.0	75.41 56.03 0.32 0.01	0.10 9.54 7.35 1.11

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 1100

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM ..RECOVERED... U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED..... PU238 PU239 PU240 PU241 PU242 NP237 AM241
			127.97 41891.07	14.78	3.79 210.83 94.61 41.84 14.53 0. 0.
0.74	120.0	0.	127.97 41891.07	14.78	3.79 210.83 94.61 41.75 14.53 0.00 0.09
0.83	135.0	15.0	127.97 41891.07	14.78	3.79 210.83 94.61 41.58 14.53 0.00 0.26
1.00	163.0	43.0	127.97 41891.07	14.78	3.78 210.83 94.61 40.60 14.53 0.00 1.24
2.00	326.0	206.0	127.97 41891.07	14.78	3.76 210.83 94.61 39.64 14.53 0.00 2.19
3.00	489.0	369.0	127.97 41891.07	14.78	3.75 210.83 94.61 38.71 14.53 0.00 3.12
4.00	652.0	532.0	127.97 41891.07	14.78	3.74 210.83 94.61 37.80 14.53 0.01 4.03
5.00	815.0	695.0	127.97 41891.07	14.78	3.73 210.83 94.61 36.91 14.53 0.01 4.92
6.00	978.0	858.0	127.97 41891.07	14.78	3.71 210.83 94.61 36.05 14.53 0.01 5.78
7.00	1141.0	1021.0	127.97 41891.07	14.78	3.71 210.83 94.61 36.05 14.53 0.01 5.78

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUMRECOVERED..... AM241 AM243 NP237 PU239	CURIUMRECOVERED..... CM242 CM244 PU238 PU240
			3.40 2.51 0. 0.	0.34 0.48 0. 0.
0.74	120.0	0.	3.40 2.51 0.00 0.0000	0.32 0.48 0.02 0.00
0.83	135.0	15.0	3.40 2.51 0.00 0.0000	0.28 0.48 0.06 0.00
1.00	163.0	43.0	3.40 2.51 0.00 0.0001	0.14 0.47 0.20 0.01
2.00	326.0	206.0	3.39 2.51 0.01 0.0002	0.07 0.46 0.27 0.02
3.00	489.0	369.0	3.39 2.51 0.01 0.0003	0.04 0.45 0.30 0.03
4.00	652.0	532.0	3.39 2.51 0.01 0.0004	0.02 0.44 0.32 0.03
5.00	815.0	695.0	3.39 2.51 0.01 0.0005	0.01 0.44 0.33 0.04
6.00	978.0	858.0	3.38 2.51 0.01 0.0006	0.00 0.43 0.33 0.05
7.00	1141.0	1021.0	3.38 2.51 0.01 0.0006	0.00 0.43 0.33 0.05

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/MW4 ***

CASE NUMBER 1100

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0048	0.0017	0.	0.
0.83	135.0	15.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0048	0.0017	0.0000	0.0000
1.00	163.0	43.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0047	0.0017	0.0000	0.0000
2.00	326.0	206.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0046	0.0017	0.0000	0.0001
3.00	489.0	369.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0045	0.0017	0.0000	0.0003
4.00	652.0	532.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0044	0.0017	0.0000	0.0004
5.00	815.0	695.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0043	0.0017	0.0000	0.0005
6.00	978.0	858.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0042	0.0017	0.0000	0.0006
7.00	1141.0	1021.0	0.0146	=0.3406	0.0017	0.0004	0.0241	0.0108	0.0041	0.0017	0.0000	0.0007

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	FU240
0.74	120.0	0.	0.0004	0.0003	0.	0.	0.0000	0.0001	0.	0.
0.83	135.0	15.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
1.00	163.0	43.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
2.00	326.0	206.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
3.00	489.0	369.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
4.00	652.0	532.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
5.00	815.0	695.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
6.00	978.0	858.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000
7.00	1141.0	1021.0	0.0004	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1100

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	2.1246	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	2.1240	0.	0.	0.	0.	0.	0.001
1.00	163.0	43.0	0.	0.	0.	2.1227	0.	0.	0.	0.	0.	0.003
2.00	326.0	206.0	0.	0.	0.	2.1153	0.	0.	0.	0.	0.	0.014
3.00	489.0	369.0	0.	0.	0.	2.1080	0.	0.	0.	0.	0.	0.024
4.00	652.0	532.0	0.	0.	0.	2.1007	0.	0.	0.	0.	0.	0.034
5.00	815.0	695.0	0.	0.	0.	2.0934	0.	0.	0.	0.	0.	0.044
6.00	978.0	858.0	0.	0.	0.	2.0861	0.	0.	0.	0.	0.	0.054
7.00	1141.0	1021.0	0.	0.	0.	2.0789	0.	0.	0.	0.	0.	0.064

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.037	0.	0.	0.	40.76	1.339	0.	0.
0.83	135.0	15.0	0.037	0.	0.	0.	38.25	1.336	0.0118	0.
1.00	163.0	43.0	0.037	0.	0.	0.	33.95	1.332	0.0318	0.
2.00	326.0	206.0	0.037	0.	0.	0.	16.98	1.309	0.1107	0.
3.00	489.0	369.0	0.037	0.	0.	0.	8.49	1.286	0.1499	0.
4.00	652.0	532.0	0.037	0.	0.	0.	4.25	1.264	0.1691	0.
5.00	815.0	695.0	0.037	0.	0.	0.	2.12	1.242	0.1784	0.
6.00	978.0	858.0	0.037	0.	0.	0.	1.06	1.220	0.1827	0.
7.00	1141.0	1021.0	0.037	0.	0.	0.	0.53	1.199	0.1846	0.

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER: 1100

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U238	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.30	99.70	100.00	1.04	57.67	25.88	11.44	3.97	100.00	100.00
0.83	135.0	15.0	0.30	99.70	100.00	1.04	57.68	25.88	11.42	3.98	100.00	100.00
1.00	163.0	43.0	0.30	99.70	100.00	1.04	57.71	25.90	11.38	3.98	100.00	100.00
2.00	326.0	206.0	0.30	99.70	100.00	1.04	57.87	25.97	11.14	3.99	100.00	100.00
3.00	489.0	369.0	0.30	99.70	100.00	1.04	58.02	26.04	10.91	4.00	100.00	100.00
4.00	652.0	532.0	0.30	99.70	100.00	1.04	58.17	26.10	10.68	4.01	100.00	100.00
5.00	815.0	695.0	0.30	99.70	100.00	1.03	58.32	26.17	10.46	4.02	100.00	100.00
6.00	978.0	858.0	0.30	99.70	100.00	1.03	58.46	26.24	10.24	4.03	100.00	100.00
7.00	1141.0	1021.0	0.30	99.70	100.00	1.03	58.61	26.30	10.02	4.04	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	57.47	42.53	100.00	100.00	41.54	58.46	0.	0.
0.83	135.0	15.0	57.47	42.53	100.00	100.00	40.04	59.96	96.45	3.55
1.00	163.0	43.0	57.47	42.53	100.00	100.00	37.29	62.71	96.25	3.75
2.00	326.0	206.0	57.45	42.55	100.00	100.00	23.23	76.77	94.96	5.04
3.00	489.0	369.0	57.44	42.56	100.00	100.00	13.35	86.65	93.49	6.51
4.00	652.0	532.0	57.42	42.58	100.00	100.00	7.27	92.73	91.89	8.11
5.00	815.0	695.0	57.41	42.59	100.00	100.00	3.84	96.16	90.23	9.77
6.00	978.0	858.0	57.39	42.61	100.00	100.00	1.99	98.01	88.54	11.46
7.00	1141.0	1021.0	57.37	42.63	100.00	100.00	1.02	98.98	86.87	13.13

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

CASE NUMBER 1100

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 350.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1101

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/T	24246.0	INITIAL FLUX, N/SO CM*SEC		8.51E 12	FISSILE RATIO		0.57	U235 IN TAILS/U235 ENR		0.36		
POWER DENS, MW/T	15.00	AVG FLUX, NEUT/SO CM*SEC		4.85E 12	INITIAL CONV RATIO		0.58	KG NATURAL/KG PRODUCED		3.888		
RESIDENCE TIME, YRS	5.54	MAX FLUX/MIN FLUX		2.33	NONFUEL X-SECT 1/CM		0.046	KG NAT U/MWE-YR		101.549		
TOTAL ENRICHMENT	2.66	AVG NEUTRON TEMP, C		352	FUEL DENSITY		8.82	AVERAGE R		0.222		
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33								
KW/GRAMS FISSILE	0.45	WATTS/CC		105.79	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.		
INITIAL REACTIVITY	1.230	FINAL INTEGRATED REACTIVITY		1.100	FINAL REACTIVITY		1.009	REACTIVITY CHANGE/MWD, MK		0.0091		
ISOTOPES												
		TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	657	0	0	462	0	0.	1099	0	1072	0
AVERAGE		0.	655	0	0	472	0	0.	1077	0	1070	0
FINAL		0.	651	0	0	483	0	0.	1068	0	1076	0
ABSORPTION-INITIAL		41.60	741	272	182	571	129	11.67	1702	1096	1480	391
AVERAGE		40.80	739	266	180	586	102	11.31	1665	1005	1476	369
FINAL		39.25	732	256	177	599	87	10.79	1647	914	1483	339
MACROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	0.	0.	0.	0.219	0.	0.	0.115	0.	0.021	0.
AVERAGE		0.	0.000	0.	0.	0.143	0.	0.	0.133	0.	0.032	0.
FINAL		0.	0.000	0.	0.	0.084	0.	0.	0.139	0.	0.039	0.
ABSORPTION-INITIAL		0.	0.	0.	0.	0.270	0.	0.266	0.178	0.051	0.029	0.003
AVERAGE		0.000	0.000	0.000	0.000	0.177	0.003	0.255	0.206	0.059	0.044	0.005
FINAL		0.000	0.000	0.000	0.000	0.105	0.005	0.241	0.214	0.064	0.054	0.007
ALPHA		INITIAL	0.	0.128	0.	0.	0.236	0.	0.	0.549	0.	0.381
AVERAGE		0.	0.127	0.	0.	0.240	0.	0.	0.546	0.	0.379	0.
FINAL		0.	0.124	0.	0.	0.240	0.	0.	0.542	0.	0.378	0.
PERCENT OF TOTAL FISSION		0.	0.0	0.	0.	41.0	0.	10.3	39.3	0.	9.4	0.
ETA		0.	2.22	0.	0.	1.96	0.	0.	1.87	0.	2.20	0.
MWD/GRAM DESTROYED		0.	0.	0.	0.	2.02	0.	1.36	0.	0.	0.	0.
INITIAL CONVERSION RATIO		0.	0.	0.	0.	0.	0.	0.	0.474	0.	0.107	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1101

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.16	0.	0.	0.47	0.	0.00	0.
FINAL	0.	0.00	0.	0.	0.77	0.	0.	0.98	0.	0.16	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.0	0.	98.0	58.6	26.2	11.2	4.0
FINAL	100.0	0.0	100.0	0.0	0.8	0.2	99.0	50.6	27.4	14.1	7.9
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.1847	0.	9.0055	0.0414	0.0186	0.0079	0.0029
FINAL	0.0000	0.0000	0.0000	0.0000	0.0682	0.0206	8.8316	0.0515	0.0280	0.0145	0.0081
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.8	2388.2	422.1	3562.9	206.5	193.4	133.3	107.3
GM/MWE-YR	0.0	0.0	0.0	0.2	597.1	105.5	890.7	51.6	48.4	33.3	26.8
GM/MMW	0.0000	0.0000	0.0000	0.0000	0.0682	0.0120	0.1017	0.0059	0.0055	0.0038	0.0031
GM/TON	0.0	0.0	0.0	4.3	13220.2	2336.6	19722.6	1143.3	1070.8	738.0	594.1
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.8	1397.6	422.1	180978.	1054.7	974.4	296.2	165.8
GM/MWE-YR	0.	0.0	0.0	0.2	349.4	105.5	45244.	264.	144.	74.	41.
GM/TON	0.	0.0	0.0	4.3	7736.5	2336.6	1001820.	5838.1	3179.4	1639.5	917.9

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1101

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/TON 24246.0 INITIAL ENRICH. 2.66 POWER DENS, MW/T 58.96 AV. NEUTRON TEMPERATURE, C 352.
 RESIDENCE TIME, YRS 5.54 AVERAGE R 0.222 KW/GRAMS FISSILE 0.45 AVERAGE FLUX, NEUT/SQ CM-SEC 4.89E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	111.56	81.48	55.26				
FROM PU-239	69.29	98.10	107.46				
FROM PU-241	13.52	22.48	31.67				
TOTAL	194.36	194.07	194.36				
NET FROM U-238	13.58	13.49	13.44				
NET FROM U-238	0.	0.	0.				
TOTAL	207.94	207.55	207.82				
				FERTILE CAPTURE			
				IN TH-232	-0.	0.00	0.00
				IN U-234	-0.	0.00	0.00
				IN U-238	48.55	54.42	48.56
				IN PU-240	9.33	12.50	12.94
				TOTAL	57.88	66.92	61.90
				NON-FERTILE CAPTURE			
				IN U-236	-0.	0.64	0.92
				IN PU-242	0.51	1.02	1.37
				IN SPECIAL PRODUCTS	0.14	1.30	2.20
				TOTAL	0.65	2.97	4.50
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	3.69	4.31	4.08
				IN OTHER F.P.	0.	8.90	11.65
				IN STRUCT. + MOD. + IMPUR.	4.78	5.58	5.28
				CONTROL + LEAKAGE	18.90	18.87	18.89
				TOTAL	27.38	37.67	39.89
				NEUTRONS INTO OR FROM OTHER FUEL	22.03	0.	1.93
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	207.94	207.55	207.82
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	57.88	66.92	61.90
TOTAL FISSION ABSORPTION	100.00	100.00	100.00				

EXPOSURE 3000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	236	1371	472	6844	17	1198	13	391	0
FINAL	236	1357	472	6851	17	1199	13	392	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.7832	0.
FINAL	0.1787	0.2765	0.2106	0.0019	0.0196	0.0000	0.0091	0.7150	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	56.7	42.9	0.4	68.4	0.1	31.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0024	0.0000	0.0000	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	29.6	45.8	34.9	0.3	3.2	0.0	1.5	-2.0	-0.
GM/MWE-YR	7.40	11.45	8.72	0.08	0.81	0.00	0.38	-2.00	-0.
GM/MWH	0.0008	0.0013	0.0010	0.0000	0.0001	0.0000	0.0000	-0.0002	-0.
GM/TON	20.3	31.4	23.9	0.2	2.2	0.0	1.0	-5.5	-0.
WATTS/MWE-YR	0.	1.3	0.1	0.0	97.4	0.0	1.1	-1.1	0.

EXPOSURE 6000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	235	1362	471	6850	17	1199	13	391	0
FINAL	235	1350	470	6865	17	1202	13	393	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.001	=0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.7832	0.
FINAL	0.4214	0.5242	0.4410	0.0055	0.0584	0.0001	0.0379	0.7295	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	100.0	0.
FINAL	100.0	54.2	45.2	0.6	60.6	0.1	39.1	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0070	0.0000	0.0001	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	34.9	43.4	36.5	0.5	4.8	0.0	3.1	-4.5	=0.
GM/MWE=VR	8.72	10.85	9.13	0.11	1.21	0.00	0.78	-1.11	=0.
GM/MMH	0.0010	0.0012	0.0010	0.0000	0.0001	0.0000	0.0001	-0.0001	=0.
GM/TON	47.8	59.5	50.0	0.6	6.6	0.0	4.3	-4.1	=0.
WATTS/MWE=VR	0.	1.2	0.1	0.0	145.0	0.0	2.2	-0.6	0.

EXPOSURE 9000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	235	1357	470	6857	17	1200	13	392	0
FINAL	234	1342	467	6881	17	1205	13	394	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.001	=0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.7832	0.
FINAL	0.7146	0.7426	0.6947	0.0091	0.1019	0.0003	0.0888	0.7769	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	100.0	0.
FINAL	100.0	51.5	47.8	0.6	53.9	0.2	46.3	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0122	0.0000	0.0002	0.0004	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	39.4	41.0	38.4	0.5	5.6	0.0	4.9	-0.4	=0.
GM/MWE=VR	9.86	10.25	9.59	0.12	1.41	0.00	1.23	-0.09	=0.
GM/MMH	0.0011	0.0012	0.0011	0.0000	0.0002	0.0000	0.0001	-0.0000	=0.
GM/TON	81.1	84.2	78.8	1.0	11.6	0.0	10.1	-0.8	=0.
WATTS/MWE=VR	0.	1.1	0.1	0.0	168.7	0.0	3.4	-0.1	0.

EXPOSURE 12000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP=0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	234	1352	469	6865	17	1201	13	392	0
FINAL	233	1333	462	6898	17	1208	13	395	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.0
FINAL	0.001	0.003	0.001	0.000	0.000	0.000	0.000	0.001	0.0
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7832	0.0
FINAL	1.0479	0.9315	0.9732	0.0123	0.1450	0.0007	0.1646	0.8761	0.0
PERCENT OF ELEMENT COMPOSITION									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
FINAL	100.0	48.8	50.6	0.6	46.9	0.2	52.9	100.0	0.0
HEAT OUTPUT, WATTS/CC	0.0	0.0001	0.0000	0.0000	0.0174	0.0000	0.0005	0.0005	0.0
NET ISOTOPIC PRODUCTION									
GM/TON=YR	43.4	38.6	40.3	0.5	6.0	0.0	6.8	3.8	0.0
GM/MWE=YR	10.85	9.64	10.08	0.13	1.50	0.01	1.70	0.96	0.0
GM/MWH	0.0012	0.0011	0.0012	0.0000	0.0002	0.0000	0.0002	0.0001	0.0
GM/TON	118.9	105.7	110.5	1.4	16.4	0.1	18.7	10.5	0.0
WATTS/MWE=YR	0.0	1.1	0.1	0.0	180.1	0.0	4.8	0.5	0.0

EXPOSURE 15000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP=0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	234	1347	467	6873	17	1203	13	393	0
FINAL	232	1323	456	6916	17	1211	13	397	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001	0.0
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.0
FINAL	0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.001	0.0
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7832	0.0
FINAL	1.4130	1.0928	1.2806	0.0150	0.1860	0.0010	0.2684	1.0238	0.0
PERCENT OF ELEMENT COMPOSITION									
INITIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
FINAL	100.0	46.0	53.4	0.6	41.0	0.2	58.7	100.0	0.0
HEAT OUTPUT, WATTS/CC	0.0	0.0001	0.0000	0.0000	0.0223	0.0000	0.0008	0.0006	0.0
NET ISOTOPIC PRODUCTION									
GM/TON=YR	46.8	35.2	42.4	0.5	6.2	0.0	8.9	4.0	0.0
GM/MWE=YR	11.70	9.05	10.60	0.12	1.54	0.01	2.22	1.99	0.0
GM/MWH	0.0013	0.0010	0.0012	0.0000	0.0002	0.0000	0.0003	0.0002	0.0
GM/TON	160.3	124.0	145.3	1.7	21.1	0.1	30.4	27.3	0.0
WATTS/MWE=YR	0.0	1.0	0.1	0.0	184.8	0.0	6.2	1.1	0.0

EXPOSURE 24246.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1101

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	PP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	236	1472	472	6839	17	1197	13	391	0
AVERAGE	233	1333	458	6899	16	1207	12	395	0
FINAL	229	1296	435	6969	17	1220	13	401	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.001	=0.
AVERAGE	0.001	0.003	0.001	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.002	0.005	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.7832	0.
FINAL	2.6655	1.4289	2.4102	0.0205	0.2944	0.0025	0.8021	1.7256	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	100.0	0.
FINAL	100.0	37.2	62.3	0.5	26.9	0.2	72.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0353	0.0000	0.0022	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	54.6	29.3	49.4	0.4	6.0	0.1	16.4	19.3	=0.
GM/MWE=VR	13.66	7.32	12.35	0.11	1.51	0.01	4.11	4.83	=0.
GM/MWH	0.0016	0.0008	0.0014	0.0000	0.0002	0.0000	0.0005	0.0006	=0.
GM/TON	302.4	162.1	273.4	2.3	33.4	0.3	91.0	166.9	=0.
WATTS/MWE=VR	0.	0.8	0.1	9.0	181.0	0.0	11.5	2.7	0.

GRADED FINAL K 1.100

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1101

EXPOSURE 24246.0 MWD/T POWER DENS 15.00 MW/T RESIDENCE TIME 5.53 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF=LIFE DAYS

		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
		*** GM/TON ***										
0.	0.	2336.60	302.36	195.75	5838.1	3179.4	1639.5	917.9	162.08	273.41	33.39	90.99
0.09	15.0	2336.60	302.37	197.75	5838.1	3179.6	1635.9	917.9	165.66	273.40	31.33	90.84
0.18	30.0	2336.60	302.38	199.62	5838.1	3179.7	1632.3	917.9	169.23	273.40	29.40	90.70
0.28	45.0	2336.60	302.39	201.37	5838.1	3179.9	1628.7	917.9	172.79	273.40	27.58	90.55
0.37	60.0	2336.60	302.41	203.01	5838.1	3180.0	1625.2	917.9	176.34	273.40	25.88	90.40
0.55	90.0	2336.60	302.43	205.98	5838.1	3180.3	1618.1	917.9	183.41	273.40	22.78	90.11
0.74	120.0	2336.60	302.49	208.57	5838.1	3180.6	1611.0	917.9	190.46	273.40	20.05	89.82
0.92	150.0	2336.60	302.47	210.84	5838.1	3180.9	1604.0	917.9	197.47	273.40	17.65	89.53
1.10	180.0	2336.60	302.50	212.82	5838.1	3181.2	1596.9	917.9	204.46	273.39	15.54	89.24
2.21	360.0	2336.60	302.67	220.29	5838.1	3182.9	1555.5	917.9	245.70	273.38	7.23	87.53
4.41	720.0	2336.60	303.09	224.25	5838.2	3186.2	1475.9	917.9	324.89	273.36	1.56	84.19
6.13	1000.0	2336.60	303.50	224.00	5838.2	3188.7	1416.8	917.9	383.58	273.34	0.48	81.69

*** GM/MWE=YEAR ***

		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
0.	0.	105.704	13.678	8.855	264.11	143.83	74.17	41.53	7.332	12.368	1.511	4.116
0.09	15.0	105.704	13.679	8.946	264.11	143.84	74.00	41.53	7.494	12.368	1.417	4.110
0.18	30.0	105.704	13.679	9.030	264.11	143.85	73.84	41.53	7.656	12.368	1.330	4.103
0.28	45.0	105.704	13.680	9.110	264.11	143.85	73.68	41.53	7.817	12.368	1.248	4.096
0.37	60.0	105.704	13.680	9.184	264.11	143.86	73.52	41.53	7.977	12.368	1.171	4.090
0.55	90.0	105.704	13.681	9.318	264.11	143.87	73.20	41.53	8.297	12.368	1.030	4.076
0.74	120.0	105.704	13.682	9.436	264.11	143.88	72.88	41.53	8.616	12.368	0.907	4.063
0.92	150.0	105.704	13.683	9.538	264.11	143.90	72.56	41.53	8.933	12.368	0.798	4.050
1.10	180.0	105.704	13.685	9.628	264.11	143.91	72.24	41.53	9.249	12.368	0.703	4.037
2.21	360.0	105.704	13.692	9.966	264.11	143.99	70.37	41.53	11.115	12.367	0.327	3.960
4.41	720.0	105.704	13.711	10.144	264.11	144.14	66.77	41.53	14.697	12.366	0.071	3.809
6.13	1000.0	105.704	13.730	10.133	264.11	144.25	64.09	41.53	17.352	12.369	0.022	3.696

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1101

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF=LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/MMH ***

0.	0.	0.0121	0.0016	0.0006	0.0059	0.0055	0.0038	0.0031	0.0008	0.0014	0.0002	0.0005
0.09	15.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0038	0.0031	0.0009	0.0014	0.0002	0.0005
0.18	30.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0038	0.0031	0.0009	0.0014	0.0002	0.0005
0.28	45.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0038	0.0031	0.0009	0.0014	0.0001	0.0005
0.37	60.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0037	0.0031	0.0009	0.0014	0.0001	0.0005
0.55	90.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0037	0.0031	0.0009	0.0014	0.0001	0.0005
0.74	120.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0037	0.0031	0.0010	0.0014	0.0001	0.0005
0.92	150.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0036	0.0031	0.0010	0.0014	0.0001	0.0005
1.10	180.0	0.0121	0.0016	0.0006	0.0059	0.0055	0.0036	0.0031	0.0011	0.0014	0.0001	0.0005
2.21	360.0	0.0121	0.0016	0.0007	0.0059	0.0055	0.0034	0.0031	0.0013	0.0014	0.0000	0.0005
4.41	720.0	0.0121	0.0016	0.0007	0.0059	0.0056	0.0030	0.0031	0.0017	0.0014	0.0000	0.0004
6.13	1000.0	0.0121	0.0016	0.0007	0.0059	0.0056	0.0027	0.0031	0.0020	0.0014	0.0000	0.0004

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	4.9589	0.	0.	0.	0.	0.081	0.	181.29	11.525
0.09	15.0	0.	0.	5.0096	0.	0.	0.	0.	0.082	0.	170.09	11.507
0.18	30.0	0.	0.	5.0570	0.	0.	0.	0.	0.084	0.	159.58	11.488
0.28	45.0	0.	0.	5.1014	0.	0.	0.	0.	0.086	0.	149.72	11.470
0.37	60.0	0.	0.	5.1430	0.	0.	0.	0.	0.088	0.	140.47	11.451
0.55	90.0	0.	0.	5.2181	0.	0.	0.	0.	0.091	0.	123.65	11.414
0.74	120.0	0.	0.	5.2839	0.	0.	0.	0.	0.095	0.	108.84	11.377
0.92	150.0	0.	0.	5.3413	0.	0.	0.	0.	0.098	0.	95.81	11.340
1.10	180.0	0.	0.	5.3914	0.	0.	0.	0.	0.102	0.	84.34	11.304
2.21	360.0	0.	0.	5.5808	0.	0.	0.	0.	0.122	0.	39.23	11.087
4.41	720.0	0.	0.	5.6809	0.	0.	0.	0.	0.162	0.	8.49	10.665
6.13	1000.0	0.	0.	5.6746	0.	0.	0.	0.	0.191	0.	2.58	10.348

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1101

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF=LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.23	100.00	1.66	49.60	27.01	13.93	7.80	37.22	62.78	26.85	73.15
0.09	15.0	0.23	100.00	1.68	49.60	27.02	13.90	7.80	37.73	62.27	25.65	74.35
0.18	30.0	0.23	100.00	1.70	49.61	27.02	13.87	7.80	38.23	61.77	24.40	75.52
0.28	45.0	0.23	100.00	1.71	49.62	27.03	13.84	7.80	38.72	61.28	23.35	76.65
0.37	60.0	0.23	100.00	1.73	49.63	27.03	13.81	7.80	39.21	60.79	22.25	77.75
0.55	90.0	0.23	100.00	1.75	49.64	27.04	13.76	7.81	40.15	59.85	20.18	79.82
0.74	120.0	0.23	100.00	1.77	49.66	27.05	13.70	7.81	41.06	58.94	18.25	81.75
0.92	150.0	0.23	100.00	1.79	49.68	27.07	13.65	7.81	41.94	58.06	16.47	83.53
1.10	180.0	0.23	100.00	1.81	49.70	27.08	13.59	7.81	42.79	57.21	14.83	85.17
2.21	360.0	0.23	100.00	1.88	49.84	27.17	13.28	7.84	47.33	52.67	7.63	92.37
4.41	720.0	0.23	100.00	1.93	50.15	27.37	12.68	7.88	54.31	45.69	1.82	98.18
6.13	1000.0	0.23	100.00	1.93	50.39	27.52	12.23	7.92	58.39	41.61	0.58	99.42

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 11n1

EXPOSURE 24246.0 MWD/T POWER DENS 15.00 MW/T. RESIDENCE TIME 5.53 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
			YIELD FACTOR									
			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.	2266.51	979274.5	287.33	202.32	5663.0	3085.2	1562.7	890.4	0.	0.
0.83	135.0	15.0	2266.51	979274.5	287.33	202.25	5663.0	3085.2	1559.2	890.4	0.00	3.42
1.00	163.0	43.0	2266.51	979274.5	287.33	202.13	5663.0	3085.2	1552.9	890.4	0.00	9.78
2.00	326.0	206.0	2266.51	979274.5	287.33	201.43	5663.0	3085.2	1516.4	890.4	0.02	46.26
3.00	489.0	369.0	2266.51	979274.5	287.33	200.73	5663.0	3085.2	1480.7	890.4	0.06	81.87
4.00	652.0	532.0	2266.51	979274.5	287.33	200.03	5663.0	3085.2	1445.9	890.4	0.13	116.61
5.00	815.0	695.0	2266.51	979274.5	287.33	199.34	5663.0	3085.2	1411.9	890.4	0.22	150.51
6.00	978.0	858.0	2266.51	979274.5	287.33	198.65	5663.0	3085.2	1378.7	890.4	0.33	183.59
7.00	1141.0	1021.0	2266.51	979274.5	287.33	197.96	5663.0	3085.2	1346.3	890.4	0.47	219.87

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
			YIELD FACTOR							
			0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	180.94	259.73	0.	0.	19.05	85.33	0.	0.
0.83	135.0	15.0	180.93	259.73	0.01	0.00	17.87	85.19	1.18	0.14
1.00	163.0	43.0	180.91	259.72	0.03	0.00	15.86	84.93	3.18	0.39
2.00	326.0	206.0	180.78	259.71	0.15	0.01	7.93	83.45	11.09	1.87
3.00	489.0	369.0	180.66	259.70	0.28	0.02	3.97	82.00	15.81	3.33
4.00	652.0	532.0	180.54	259.69	0.40	0.03	1.98	80.57	16.93	4.76
5.00	815.0	695.0	180.42	259.68	0.52	0.04	0.99	79.17	17.86	6.16
6.00	978.0	858.0	180.30	259.67	0.64	0.06	0.50	77.79	18.30	7.54
7.00	1141.0	1021.0	180.17	259.66	0.76	0.07	0.25	76.44	18.48	8.89

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 11n1

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	102.53	44300.68	13.00	9.15	256.18	139.57	70.69	40.28	0.	0.
0.83	135.0	15.0	102.53	44300.68	13.00	9.15	256.18	139.57	70.54	40.28	0.00	0.15
1.00	163.0	43.0	102.53	44300.68	13.00	9.14	256.18	139.57	70.25	40.28	0.00	0.44
2.00	326.0	206.0	102.53	44300.68	13.00	9.11	256.18	139.57	68.60	40.28	0.00	2.09
3.00	489.0	369.0	102.53	44300.68	13.00	9.08	256.18	139.57	66.99	40.28	0.00	3.78
4.00	652.0	532.0	102.53	44300.68	13.00	9.05	256.18	139.57	65.41	40.28	0.01	5.28
5.00	815.0	695.0	102.53	44300.68	13.00	9.02	256.18	139.57	63.87	40.28	0.01	6.81
6.00	978.0	858.0	102.53	44300.68	13.00	8.99	256.18	139.57	62.37	40.28	0.02	8.31
7.00	1141.0	1021.0	102.53	44300.68	13.00	8.96	256.18	139.57	60.91	40.28	0.02	9.77

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	8.19	11.75	0.	0.	0.86	3.86	0.	0.
0.83	135.0	15.0	8.18	11.75	0.00	0.0000	0.81	3.85	0.05	0.01
1.00	163.0	43.0	8.18	11.75	0.00	0.0001	0.72	3.84	0.14	0.02
2.00	326.0	206.0	8.18	11.75	0.01	0.0006	0.36	3.78	0.50	0.08
3.00	489.0	369.0	8.17	11.75	0.01	0.0011	0.18	3.71	0.68	0.15
4.00	652.0	532.0	8.17	11.75	0.02	0.0016	0.09	3.64	0.77	0.22
5.00	815.0	695.0	8.16	11.75	0.02	0.0020	0.04	3.58	0.81	0.28
6.00	978.0	858.0	8.16	11.75	0.03	0.0025	0.02	3.52	0.83	0.34
7.00	1141.0	1021.0	8.15	11.75	0.03	0.0030	0.01	3.46	0.84	0.40

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/WHH ***

CASE NUMBER 1101

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
0.45 YR	HALF-LIVES		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0034	0.0029	0.0000	0.0000
0.83	135.0	15.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0034	0.0029	0.0000	0.0000
1.00	163.0	43.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0034	0.0029	0.0000	0.0001
2.00	326.0	206.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0032	0.0029	0.0000	0.0002
3.00	489.0	369.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0030	0.0029	0.0000	0.0004
4.00	652.0	532.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0028	0.0029	0.0000	0.0006
5.00	815.0	695.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0026	0.0029	0.0000	0.0008
6.00	978.0	858.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0025	0.0029	0.0000	0.0009
7.00	1141.0	1021.0	0.0117	-0.3263	0.0015	0.0006	0.0050	0.0050	0.0023	0.0029	0.0000	0.0011

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR	HALF-LIVES		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0009	0.0013	0.	0.	0.0001	0.0004	0.	0.
0.83	135.0	15.0	0.0009	0.0013	0.0000	0.0000	0.0001	0.0004	0.0000	0.0000
1.00	163.0	43.0	0.0009	0.0013	0.0000	0.0000	0.0001	0.0004	0.0000	0.0000
2.00	326.0	206.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
3.00	489.0	369.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
4.00	652.0	532.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
5.00	815.0	695.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
6.00	978.0	858.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000
7.00	1141.0	1021.0	0.0009	0.0013	0.0000	0.0000	0.0000	0.0004	0.0001	0.0000

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1101

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
0.45 YR	HALF-LIVES		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	5.1254	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	5.1237	0.	0.	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	5.1267	0.	0.	0.	0.	0.	0.005
2.00	326.0	206.0	0.	0.	0.	5.1029	0.	0.	0.	0.	0.	0.023
3.00	489.0	369.0	0.	0.	0.	5.0852	0.	0.	0.	0.	0.	0.041
4.00	652.0	532.0	0.	0.	0.	5.0676	0.	0.	0.	0.	0.	0.058
5.00	815.0	695.0	0.	0.	0.	5.0500	0.	0.	0.	0.	0.	0.075
6.00	978.0	858.0	0.	0.	0.	5.0325	0.	0.	0.	0.	0.	0.091
7.00	1141.0	1021.0	0.	0.	0.	5.0150	0.	0.	0.	0.	0.	0.107

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR	HALF-LIVES		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.090	0.	0.	0.	103.40	10.808	0.	0.
0.83	135.0	15.0	0.090	0.	0.	0.	97.01	10.791	0.0298	0.
1.00	163.0	43.0	0.090	0.	0.	0.	86.12	10.758	0.0806	0.
2.00	326.0	206.0	0.090	0.	0.	0.	43.07	10.571	0.2808	0.
3.00	489.0	369.0	0.090	0.	0.	0.	21.54	10.387	0.3801	0.
4.00	652.0	532.0	0.090	0.	0.	0.	10.77	10.206	0.4290	0.
5.00	815.0	695.0	0.090	0.	0.	0.	5.39	10.028	0.4526	0.
6.00	978.0	858.0	0.090	0.	0.	0.	2.69	9.853	0.4635	0.
7.00	1141.0	1021.0	0.090	0.	0.	0.	1.35	9.682	0.4682	0.

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1101

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.23	99.77	100.00	1.77	49.66	27.05	13.70	7.81	100.00	100.00
0.83	135.0	15.0	0.23	99.77	100.00	1.77	49.68	27.06	13.68	7.81	100.00	100.00
1.00	163.0	43.0	0.23	99.77	100.00	1.77	49.70	27.08	13.63	7.81	100.00	100.00
2.00	326.0	206.0	0.23	99.77	100.00	1.77	49.87	27.17	13.35	7.84	100.00	100.00
3.00	489.0	369.0	0.23	99.77	100.00	1.77	50.03	27.25	13.08	7.87	100.00	100.00
4.00	652.0	532.0	0.23	99.77	100.00	1.77	50.18	27.34	12.81	7.89	100.00	100.00
5.00	815.0	699.0	0.23	99.77	100.00	1.77	50.34	27.42	12.55	7.91	100.00	100.00
6.00	978.0	858.0	0.23	99.77	100.00	1.77	50.49	27.51	12.29	7.94	100.00	100.00
7.00	1141.0	1021.0	0.23	99.77	100.00	1.77	50.64	27.59	12.04	7.96	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	41.06	58.94	100.00	100.00	18.25	81.75	0.	0.
0.83	135.0	15.0	41.06	58.94	100.00	100.00	17.34	82.66	89.51	10.49
1.00	163.0	43.0	41.06	58.94	100.00	100.00	15.74	84.26	88.96	11.04
2.00	326.0	206.0	41.04	58.96	100.00	100.00	8.68	91.32	85.54	14.46
3.00	489.0	369.0	41.03	58.97	100.00	100.00	4.61	95.39	81.85	18.15
4.00	652.0	532.0	41.01	58.99	100.00	100.00	2.40	97.60	78.07	21.93
5.00	815.0	699.0	40.99	59.01	100.00	100.00	1.24	98.76	74.36	25.64
6.00	978.0	858.0	40.98	59.02	100.00	100.00	0.63	99.37	70.82	29.18
7.00	1141.0	1021.0	40.96	59.04	100.00	100.00	0.32	99.68	67.51	32.49

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

CASE NUMBER 1161

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP-40

THE FULL SCALE VALUE FOR ALL ISOTOPES IS: 300.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1102

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/Y	24427.0	INITIAL FLUX, N/SQ CM-SEC	7.71E 12	FISSILE RATIO	0.58	U235 IN TAILS/U235 ENR	0.36				
POWER DENS, MW/T	15.00	AVG FLUX, N/UT/SQ CM-SEC	2.98E 12	INITIAL CONV RATIO	0.58	KG NATURAL/KG PRODUCED	4.015				
RESIDENCE TIME, YRS	9.98	MAX FLUX/MIN FLUX	3.49	NONFUEL X-SECT 1/CM	0.048	KG NAT U/MWE-YR	109.145				
TOTAL ENRICHMENT	2.87	AVG NEUTRON TEMP, C	396.	FUEL DENSITY	8.82	AVERAGE R	0.238				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.42	WATTS/CC	105.78	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.226	FINAL INTEGRATED REACTIVITY	1.100	FINAL REACTIVITY	1.014	REACTIVITY CHANGE/MWD-MK	0.0087				
ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	668	0	0	455	0	0.	1081	0	1047	0
AVERAGE	0.	664	0	0	467	0	0.	1067	0	1052	0
FINAL	0.	658	0	0	478	0	0.	1062	0	1062	0
ABSORPTION-INITIAL	44.63	759	292	191	565	140	12.42	1674	1024	1443	395
AVERAGE	43.33	750	283	187	581	110	11.93	1650	976	1449	371
FINAL	41.37	742	271	182	595	93	11.30	1640	916	1463	341
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.221	0.	0.	0.136	0.	0.035	0.
AVERAGE	0.	0.000	0.	0.	0.150	0.	0.	0.146	0.	0.042	0.
FINAL	0.	0.000	0.	0.	0.093	0.	0.	0.147	0.	0.046	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.274	0.	0.282	0.211	0.070	0.048	0.008
AVERAGE	0.000	0.000	0.000	0.000	0.186	0.003	0.268	0.225	0.072	0.038	0.009
FINAL	0.000	0.000	0.000	0.000	0.116	0.005	0.252	0.227	0.073	0.063	0.011
ALPHA	0.	0.130	0.	0.	0.242	0.	0.	0.549	0.	0.378	0.
AVERAGE	0.	0.129	0.	0.	0.244	0.	0.	0.546	0.	0.378	0.
FINAL	0.	0.128	0.	0.	0.245	0.	0.	0.544	0.	0.378	0.
PERCENT OF TOTAL FISSION	0.	0.	0.	0.	39.5	0.	9.9	39.3	0.	11.3	0.
ETA	0.	2.22	0.	0.	1.96	0.	0.	1.87	0.	2.20	0.
MWD/GRAM DESTROYED	6.	0.	0.	0.	2.10	0.	1.43	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.449	0.	0.131	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1102

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.15	0.	0.	0.57	0.	0.15	0.
FINAL	0.	0.00	0.	0.	0.86	0.	0.	0.62	0.	0.20	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.1	0.	97.9	51.0	27.6	13.5	7.9
FINAL	100.0	0.0	100.0	0.0	0.9	0.2	98.9	47.2	27.4	14.8	10.6
ISOTOPIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.1894	0.	8.9699	0.0500	0.0272	0.0133	0.0078
FINAL	0.0000	0.0000	0.0000	0.0001	0.0762	0.0204	8.8040	0.0548	0.0319	0.0174	0.0124
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.5	2302.2	414.7	3375.6	99.3	95.3	82.1	93.1
GM/MWE-YR	0.0	0.0	0.0	0.4	575.6	103.7	843.9	24.8	23.8	20.5	23.3
GM/MWH	0.0000	0.0000	0.0000	0.0000	0.0457	0.0118	0.0963	0.0028	0.0027	0.0023	0.0027
GM/TON	0.0	0.0	0.0	8.3	12839.6	2312.6	18826.1	553.7	531.6	458.0	519.1
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.5	1549.9	414.7	17906.0	1115.4	648.9	353.0	252.7
GM/MWE-YR	0.	0.0	0.0	0.4	387.5	103.7	4476.0	279.	162.	88.	63.
GM/TON	0.	0.0	0.0	8.3	8643.8	2312.6	99868.2	6220.7	3618.8	1969.0	1409.3

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 1102

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/TON	24427.0	INITIAL ENRICH.	2.87	POWER DENS. MW/T	54.01	AV. NEUTRON TEMPERATURE, C	356.
RESIDENCE TIME, YRS	5.58	AVERAGE R	0.238	KW/GRAMS FISSILE	0.42	AVERAGE FLUX, NEUT/SQ CM-SEC	2.98E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED		FUEL INITIAL	REACTOR AVERAGE	FUEL INITIAL	NON-FISSION CAPTURE		FUEL INITIAL	REACTOR AVERAGE	FUEL INITIAL
FROM U-233	0.0	0.00	0.00						
FROM U-235	100.85	77.71	55.92						
FROM PU-239	73.66	89.54	104.21						
FROM PU-241	19.81	27.01	34.36						
TOTAL	194.32	194.25	194.49						
NET FROM U-238	12.91	12.85	12.80						
NET FROM U-238	0.	0.	0.						
TOTAL	207.23	207.10	207.29						
NEUTRONS ABSORBED IN FISSION ISOTOPES TO CAUSE FISSION				FERTILE CAPTURE					
IN U-233	0.0	0.00	0.00	IN TH-232	0.0	0.00	0.00		
IN U-235	41.43	31.93	22.98	IN U-234	0.	0.00	0.01		
IN PU-239	25.53	31.04	36.12	IN U-238	46.24	52.05	46.31		
IN PU-241	6.54	8.91	11.34	IN PU-240	11.47	13.98	13.49		
TOTAL	73.50	71.88	70.44	TOTAL	57.71	66.04	59.80		
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FERTILE CAPTURE					
IN U-233	0.0	0.00	0.00	IN U-236	0.	0.61	0.89		
IN PU-239	14.01	16.95	19.66	IN PU-242	1.27	1.78	1.94		
TOTAL	14.01	16.95	19.66	IN SPECIAL PRODUCTS	0.30	1.91	2.91		
				TOTAL	1.56	4.31	5.74		
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE					
IN U-235	10.02	7.80	5.62	IN SM + XE	3.93	4.18	3.96		
IN PU-241	2.47	3.37	4.28	IN OTHER F.P.	0.	8.67	11.26		
TOTAL	12.49	11.17	9.90	IN STRUCT. + MOD. + IMPUR.	4.30	5.08	4.82		
				CONTROL + LEAKAGE	18.84	18.83	18.84		
				TOTAL	26.67	36.76	38.88		
TOTAL FISSION ABSORPTION				NEUTRONS INTO OR FROM OTHER FUEL					
100.00	100.00	100.00	100.00	IN PA-233 NON-FERTILE CAPTURE	0.	0.00	0.00		
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.		
				TOTAL ABSORPTION + LEAKAGE	207.23	207.10	207.29		
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)					
				57.71	66.04	59.80			

EXPOSURE 3000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES:	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-239
HALF LIFE:	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	69 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	241	1927	508	6752	17	1182	13	182	0
AVERAGE	240	1412	507	6760	17	1183	13	182	0
FINAL	240	1396	505	6770	17	1185	13	183	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	-0.
FINAL	0.1709	0.4473	0.5651	0.0031	0.0299	0.0000	0.0216	1.7659	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	47.0	52.7	0.3	58.2	0.1	41.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0036	0.0000	0.0001	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	28.3	74.1	83.7	0.5	9.0	0.0	3.6	-18.7	-0.
GM/HHE-YR	7.08	18.52	20.91	0.13	1.24	0.00	0.90	-4.86	-0.
GM/MWH	0.0008	0.0021	0.0024	0.0000	0.0001	0.0000	0.0001	-0.0005	-0.
GM/TON	19.4	50.7	57.3	0.3	3.4	0.0	2.5	-12.8	-0.
WATTS/HHE-YR	0.	2.0	0.1	0.0	148.7	0.0	2.5	-2.6	0.

EXPOSURE 6000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1527	508	6752	17	1182	13	382	0
AVERAGE	240	1401	505	6769	17	1184	13	383	0
FINAL	239	1386	501	6788	17	1188	13	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/GC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	0.
FINAL	0.4025	0.8223	1.0074	0.0086	0.0870	0.0002	0.0869	1.7122	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	44.9	54.6	0.5	50.2	0.1	49.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0104	0.0000	0.0002	0.0018	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	33.3	68.1	83.4	0.7	7.2	0.0	7.2	-13.8	-0.
GM/MWE=YR	8.33	17.02	20.86	0.18	1.80	0.00	1.80	-3.44	-0.
GM/MWH	0.0010	0.0019	0.0024	0.0000	0.0002	0.0000	0.0002	-0.0004	-0.
GM/TON	49.7	93.3	114.3	1.0	9.9	0.0	9.9	-18.9	-0.
WATTS/MWE=YR	0.	1.9	0.1	0.0	218.1	0.0	5.0	-1.9	0.

EXPOSURE 9000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1527	508	6752	17	1182	13	382	0
AVERAGE	239	1395	502	6778	17	1186	13	383	0
FINAL	238	1377	494	6808	17	1192	13	386	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/GC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	0.
FINAL	0.6831	1.1312	1.5089	0.0141	0.1480	0.0005	0.1964	1.7296	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	42.8	56.6	0.5	43.1	0.1	56.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0178	0.0000	0.0006	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	37.7	62.4	83.3	0.8	8.2	0.0	10.8	-8.2	-0.
GM/MWE=YR	9.43	15.61	20.82	0.19	2.04	0.01	2.71	-2.06	-0.
GM/MWH	0.0011	0.0018	0.0024	0.0000	0.0002	0.0000	0.0003	-0.0002	-0.
GM/TON	77.5	128.3	171.2	1.6	16.8	0.1	22.3	-18.9	-0.
WATTS/MWE=YR	0.	1.7	0.1	0.0	249.1	0.0	7.6	-1.2	0.

EXPOSURE 12000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1527	508	6752	17	1182	13	382	0
AVERAGE	239	1389	499	6787	17	1188	13	384	0
FINAL	237	1367	487	6827	17	1195	13	388	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.002	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	0.
FINAL	1.0034	1.3917	2.0120	0.0188	0.2053	0.0009	0.3509	1.0137	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	40.7	58.8	0.6	37.0	0.2	62.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0246	0.0000	0.0010	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	41.5	57.2	83.3	0.8	8.5	0.0	14.5	-2.7	-0.
GM/MWE=YR	10.39	14.30	20.83	0.19	2.13	0.01	3.63	-0.67	-0.
GM/MWH	0.0012	0.0016	0.0024	0.0000	0.0002	0.0000	0.0004	-0.0001	-0.
GM/TON	113.8	156.7	228.2	2.1	23.3	0.1	39.8	-7.4	-0.
WATTS/MWE=YR	0.	1.6	0.1	0.0	255.0	0.0	10.2	-0.4	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1527	508	6752	17	1182	13	382	0
AVERAGE	238	1384	496	6797	17	1189	13	385	0
FINAL	236	1356	479	6847	17	1199	13	389	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	0.
FINAL	1.3556	1.5801	2.5184	0.0225	0.2569	0.0014	0.5510	1.9572	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	38.5	60.9	0.5	31.9	0.2	67.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0308	0.0000	0.0015	0.0011	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	44.9	52.3	83.4	0.7	8.5	0.0	18.2	2.6	-0.
GM/MWE=YR	11.23	13.08	20.85	0.19	2.13	0.01	4.56	0.65	-0.
GM/MWH	0.0013	0.0015	0.0024	0.0000	0.0002	0.0000	0.0005	0.0001	-0.
GM/TON	153.6	179.2	285.7	2.6	29.1	0.2	62.5	8.9	-0.
WATTS/MWE=YR	0.	1.4	0.1	0.0	255.3	0.0	12.8	0.4	0.

EXPOSURE 24427.0 MW/DY

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1102

ISOTOPES:	NP239	AM241	AM243	AM242	CM242	CM243	CM244	PU238	PP-00
HALF LIFE:	STABLE	456 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	241	1527	508	6752	17	1182	13	382	0
AVERAGE	237	1367	484	6828	17	1195	13	387	0
FINAL	232	1324	452	6909	17	1210	13	395	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.004	0.002	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.006	0.005	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.8786	0.
FINAL	2.6029	1.9306	4.1435	0.0289	0.3808	0.0032	1.4928	2.6839	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	31.8	67.7	0.5	20.4	0.2	79.4	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0457	0.0000	0.0042	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	52.9	39.3	84.3	0.6	7.7	0.1	30.4	16.4	-0.
GM/MWE-YR	13.24	9.82	21.07	0.15	1.94	0.02	7.59	4.10	-0.
GM/MWH	0.0015	0.0011	0.0024	0.0000	0.0002	0.0000	0.0009	0.0005	-0.
GM/TON	295.3	219.0	470.0	3.3	43.2	0.4	169.3	91.4	-0.
WATTS/MWE-YR	0.	1.1	0.1	0.0	232.4	0.0	21.3	2.3	0.

GRADED FINAL K 1.100

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 1102

EXPOSURE 24427.0 MW/DY POWER DENS 15.00 MW/T RESIDENCE TIME 5.57 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***												
0.	0.	2312.60	295.27	304.45	6220.7	3618.8	1969.0	1409.3	219.00	470.02	43.19	169.34
0.09	15.0	2312.60	295.28	307.02	6220.7	3619.1	1964.7	1409.3	223.29	470.01	40.53	169.07
0.18	30.0	2312.60	295.29	309.42	6220.7	3619.3	1960.4	1409.3	227.58	470.01	38.02	168.79
0.28	45.0	2312.60	295.31	311.67	6220.7	3619.6	1956.1	1409.3	231.85	470.01	35.67	168.52
0.37	60.0	2312.60	295.32	313.78	6220.7	3619.9	1951.8	1409.3	236.11	470.01	33.47	168.25
0.55	90.0	2312.60	295.35	317.58	6220.7	3620.4	1943.3	1409.3	244.61	470.00	29.46	167.71
0.74	120.0	2312.60	295.38	320.90	6220.7	3621.0	1934.8	1409.3	253.07	470.00	25.93	167.16
0.92	150.0	2312.60	295.42	323.80	6220.7	3621.5	1926.3	1409.3	261.49	470.00	22.83	166.62
1.10	180.0	2312.60	295.45	326.33	6220.7	3622.0	1917.9	1409.3	269.87	469.99	20.09	166.09
2.21	360.0	2312.60	295.67	335.80	6220.8	3625.2	1868.2	1409.3	319.38	469.97	9.35	162.90
4.41	720.0	2312.60	296.22	340.53	6220.8	3631.4	1772.6	1409.3	414.46	469.93	2.02	156.69
6.13	1000.0	2312.60	296.74	339.90	6220.8	3636.1	1701.6	1409.3	484.91	469.90	0.62	152.04

*** GM/MWE-YEAR ***

0.	0.	103.843	13.258	13.671	279.33	162.49	88.41	63.28	9.834	21.105	1.940	7.604
0.09	15.0	103.843	13.259	13.786	279.33	162.51	88.22	63.28	10.027	21.105	1.820	7.592
0.18	30.0	103.843	13.260	13.894	279.33	162.52	88.03	63.28	10.219	21.105	1.707	7.579
0.28	45.0	103.843	13.260	13.995	279.33	162.53	87.83	63.28	10.411	21.105	1.602	7.567
0.37	60.0	103.843	13.261	14.089	279.33	162.54	87.64	63.28	10.602	21.105	1.503	7.555
0.55	90.0	103.843	13.262	14.260	279.33	162.57	87.26	63.28	10.984	21.105	1.323	7.531
0.74	120.0	103.843	13.264	14.410	279.33	162.59	86.88	63.28	11.364	21.104	1.164	7.506
0.92	150.0	103.843	13.265	14.540	279.33	162.62	86.50	63.28	11.742	21.104	1.025	7.482
1.10	180.0	103.843	13.267	14.653	279.33	162.64	86.12	63.28	12.118	21.104	0.902	7.458
2.21	360.0	103.843	13.276	15.079	279.33	163.08	83.89	63.28	14.341	21.103	0.420	7.314
4.41	720.0	103.843	13.301	15.291	279.33	163.06	79.59	63.28	18.610	21.101	0.091	7.036
6.13	1000.0	103.843	13.324	15.263	279.33	163.27	76.41	63.28	21.774	21.100	0.028	6.827

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1142

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** G4/MW4 ***										
0.	0.	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.09	15.0	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.18	30.0	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.28	45.0	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.37	60.0	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.55	90.0	0.0118	0.0015	0.0005	0.0028	0.0027	0.0023	0.0027	0.0011	0.0024
0.74	120.0	0.0118	0.0015	0.0006	0.0028	0.0027	0.0022	0.0027	0.0013	0.0024
0.92	150.0	0.0118	0.0015	0.0006	0.0028	0.0027	0.0021	0.0027	0.0013	0.0024
1.10	180.0	0.0118	0.0015	0.0006	0.0028	0.0027	0.0021	0.0027	0.0013	0.0024
2.21	360.0	0.0118	0.0015	0.0006	0.0028	0.0027	0.0021	0.0027	0.0013	0.0024
4.41	720.0	0.0118	0.0015	0.0007	0.0028	0.0027	0.0021	0.0027	0.0013	0.0024
6.13	1000.0	0.0118	0.0015	0.0006	0.0028	0.0027	0.0021	0.0027	0.0013	0.0024

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	7.6555	0.	0.	0.	0.	0.108	0.	232.74	21.291
0.09	15.0	0.	0.	7.7201	0.	0.	0.	0.	0.110	0.	218.36	21.257
0.18	30.0	0.	0.	7.7806	0.	0.	0.	0.	0.112	0.	204.87	21.222
0.28	45.0	0.	0.	7.8372	0.	0.	0.	0.	0.115	0.	192.22	21.188
0.37	60.0	0.	0.	7.8901	0.	0.	0.	0.	0.117	0.	180.34	21.154
0.55	90.0	0.	0.	7.9858	0.	0.	0.	0.	0.121	0.	158.75	21.089
0.74	120.0	0.	0.	8.0694	0.	0.	0.	0.	0.125	0.	139.74	21.017
0.92	150.0	0.	0.	8.1423	0.	0.	0.	0.	0.129	0.	123.00	20.950
1.10	180.0	0.	0.	8.2058	0.	0.	0.	0.	0.133	0.	108.27	20.882
2.21	360.0	0.	0.	8.4440	0.	0.	0.	0.	0.158	0.	50.37	20.481
4.41	720.0	0.	0.	8.5628	0.	0.	0.	0.	0.205	0.	10.90	19.701
6.13	1000.0	0.	0.	8.5471	0.	0.	0.	0.	0.240	0.	3.31	19.115

GRADED FINAL K 1.100

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 1142

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***										
0.	0.	0.23	100.00	2.25	46.00	26.76	14.56	10.42	31.78	68.22
0.09	15.0	0.23	100.00	2.27	46.01	26.77	14.53	10.42	32.21	67.79
0.18	30.0	0.23	100.00	2.29	46.01	26.77	14.50	10.42	32.62	67.38
0.28	45.0	0.23	100.00	2.31	46.02	26.78	14.47	10.43	33.03	66.97
0.37	60.0	0.23	100.00	2.32	46.03	26.78	14.44	10.43	33.44	66.56
0.55	90.0	0.23	100.00	2.35	46.04	26.80	14.38	10.43	34.23	65.77
0.74	120.0	0.23	100.00	2.38	46.06	26.81	14.32	10.43	35.00	65.00
0.92	150.0	0.23	100.00	2.40	46.07	26.82	14.27	10.44	35.75	64.25
1.10	180.0	0.23	100.00	2.42	46.09	26.84	14.21	10.44	36.48	63.52
2.21	360.0	0.23	100.00	2.49	46.22	26.93	13.88	10.47	40.46	59.54
4.41	720.0	0.23	100.00	2.55	46.51	27.15	13.25	10.54	46.86	53.14
6.13	1000.0	0.23	100.00	2.55	46.75	27.32	12.79	10.59	50.79	49.21

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1182

EXPOSURE 24427.0 MWd/Y POWER DENS 19.00 MW/Y RESIDENCE TIME 5.57 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
		YIELD FACTOR		0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.
0.74	120.0	0.	2243.22	977115.3	280.61	311.28	6034.1	3512.3	1876.8	1367.0	0.
0.83	135.0	15.0	2243.22	977115.3	280.61	311.18	6034.1	3512.3	1872.7	1367.0	0.00
1.00	163.0	43.0	2243.22	977115.3	280.61	310.99	6034.1	3512.3	1865.0	1367.0	0.00
2.00	326.0	206.0	2243.22	977115.3	280.61	309.91	6034.1	3512.3	1821.2	1367.0	0.02
3.00	489.0	369.0	2243.22	977115.3	280.61	308.84	6034.1	3512.3	1778.4	1367.0	0.08
4.00	652.0	532.0	2243.22	977115.3	280.61	307.77	6034.1	3512.3	1736.5	1367.0	0.16
5.00	815.0	695.0	2243.22	977115.3	280.61	306.70	6034.1	3512.3	1695.7	1367.0	0.26
6.00	978.0	858.0	2243.22	977115.3	280.61	305.64	6034.1	3512.3	1655.9	1367.0	0.40
7.00	1141.0	1021.0	2243.22	977115.3	280.61	304.58	6034.1	3512.3	1616.9	1367.0	0.56

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURTIUMRECOVERED.....			
		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
		YIELD FACTOR		0.950	0.950	0.	0.	0.950	0.950
0.74	120.0	0.	240.42	446.50	0.	0.	24.64	158.81	0.
0.83	135.0	15.0	240.40	446.50	0.01	0.00	23.11	158.55	1.52
1.00	163.0	43.0	240.37	446.50	0.04	0.00	20.52	158.07	4.11
2.00	326.0	206.0	240.21	446.48	0.21	0.02	10.26	155.32	14.34
3.00	489.0	369.0	240.05	446.46	0.37	0.04	5.13	152.61	19.41
4.00	652.0	532.0	239.89	446.44	0.53	0.06	2.57	149.95	21.90
5.00	815.0	695.0	239.72	446.42	0.69	0.08	1.28	147.34	23.11
6.00	978.0	858.0	239.56	446.41	0.85	0.10	0.64	144.78	23.67
7.00	1141.0	1021.0	239.40	446.39	1.01	0.11	0.32	142.25	23.90

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 1182

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	100.73	43875.46	12.60	13.98	270.95	157.71	84.27	61.38	0.
0.83	135.0	15.0	100.73	43875.46	12.60	13.97	270.95	157.71	84.09	61.38	0.00
1.00	163.0	43.0	100.73	43875.46	12.60	13.96	270.95	157.71	83.74	61.38	0.00
2.00	326.0	206.0	100.73	43875.46	12.60	13.92	270.95	157.71	81.78	61.38	0.00
3.00	489.0	369.0	100.73	43875.46	12.60	13.87	270.95	157.71	79.85	61.38	0.00
4.00	652.0	532.0	100.73	43875.46	12.60	13.82	270.95	157.71	77.98	61.38	0.01
5.00	815.0	695.0	100.73	43875.46	12.60	13.77	270.95	157.71	76.14	61.38	0.01
6.00	978.0	858.0	100.73	43875.46	12.60	13.72	270.95	157.71	74.35	61.38	0.02
7.00	1141.0	1021.0	100.73	43875.46	12.60	13.68	270.95	157.71	72.61	61.38	0.03

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURTIUMRECOVERED.....			
		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	10.80	20.05	0.	0.	1.11	7.13	0.
0.83	135.0	15.0	10.79	20.05	0.00	0.0001	1.04	7.12	0.07
1.00	163.0	43.0	10.79	20.05	0.00	0.0002	0.92	7.10	0.12
2.00	326.0	206.0	10.79	20.05	0.01	0.0010	0.46	6.97	0.64
3.00	489.0	369.0	10.78	20.05	0.02	0.0018	0.23	6.85	0.87
4.00	652.0	532.0	10.77	20.05	0.02	0.0026	0.12	6.73	0.98
5.00	815.0	695.0	10.76	20.05	0.03	0.0035	0.06	6.62	1.04
6.00	978.0	858.0	10.76	20.05	0.04	0.0043	0.03	6.50	1.06
7.00	1141.0	1021.0	10.75	20.04	0.05	0.0051	0.01	6.39	1.07

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/HWU ***

CASE NUMBER 1102

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0019	0.0024	0.	0.
0.83	135.0	15.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0019	0.0024	0.0000	0.0000
1.00	163.0	43.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0018	0.0024	0.0000	0.0001
2.00	326.0	206.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0016	0.0024	0.0000	0.0003
3.00	489.0	369.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0014	0.0024	0.0000	0.0005
4.00	652.0	532.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0012	0.0024	0.0000	0.0007
5.00	815.0	695.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0009	0.0024	0.0000	0.0009
6.00	978.0	858.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0007	0.0024	0.0000	0.0011
7.00	1141.0	1021.0	0.0115	=0.3170	0.0014	0.0005	0.0019	0.0022	0.0005	0.0024	0.0000	0.0013

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0012	0.0023	0.	0.	0.0001	0.0008	0.	0.
0.83	135.0	15.0	0.0012	0.0023	0.0000	0.0000	0.0001	0.0008	0.0000	0.0000
1.00	163.0	43.0	0.0012	0.0023	0.0000	0.0000	0.0001	0.0008	0.0000	0.0000
2.00	326.0	206.0	0.0012	0.0023	0.0000	0.0000	0.0001	0.0008	0.0001	0.0000
3.00	489.0	369.0	0.0012	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0000
4.00	652.0	532.0	0.0012	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0000
5.00	815.0	695.0	0.0012	0.0023	0.0000	0.0000	0.0000	0.0008	0.0001	0.0001
6.00	978.0	858.0	0.0012	0.0023	0.0000	0.0000	0.0000	0.0007	0.0001	0.0001
7.00	1141.0	1021.0	0.0012	0.0023	0.0000	0.0000	0.0000	0.0007	0.0001	0.0001

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1102

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	7.8273	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	7.8248	0.	0.	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	7.8261	0.	0.	0.	0.	0.	0.006
2.00	326.0	206.0	0.	0.	0.	7.7930	0.	0.	0.	0.	0.	0.027
3.00	489.0	369.0	0.	0.	0.	7.7660	0.	0.	0.	0.	0.	0.049
4.00	652.0	532.0	0.	0.	0.	7.7390	0.	0.	0.	0.	0.	0.069
5.00	815.0	695.0	0.	0.	0.	7.7122	0.	0.	0.	0.	0.	0.089
6.00	978.0	858.0	0.	0.	0.	7.6854	0.	0.	0.	0.	0.	0.109
7.00	1141.0	1021.0	0.	0.	0.	7.6588	0.	0.	0.	0.	0.	0.128

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.119	0.	0.	0.	132.75	19.966	0.	0.
0.83	135.0	15.0	0.119	0.	0.	0.	124.55	19.934	0.0383	0.
1.00	163.0	43.0	0.119	0.	0.	0.	110.57	19.874	0.1035	0.
2.00	326.0	206.0	0.119	0.	0.	0.	55.29	19.928	0.3606	0.
3.00	489.0	369.0	0.119	0.	0.	0.	27.65	19.188	0.4881	0.
4.00	652.0	532.0	0.118	0.	0.	0.	13.83	18.854	0.5907	0.
5.00	815.0	695.0	0.118	0.	0.	0.	6.91	18.525	0.6810	0.
6.00	978.0	858.0	0.118	0.	0.	0.	3.46	18.203	0.5951	0.
7.00	1141.0	1021.0	0.118	0.	0.	0.	1.73	17.885	0.6011	0.

GRADED FINAL K: 1,100

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1172

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR	DAYS	DAYS	DAYS	U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
HALF-LIVES													
0.74	120.0	0.	0.	0.23	99.77	100.00	2.38	46.06	26.81	14.32	10.43	100.00	100.00
0.83	135.0	15.0	0.	0.23	99.77	100.00	2.38	46.07	26.82	14.30	10.44	100.00	100.00
1.00	163.0	43.0	0.	0.23	99.77	100.00	2.38	46.10	26.83	14.25	10.44	100.00	100.00
2.00	326.0	206.0	0.	0.23	99.77	100.00	2.38	46.26	26.93	13.96	10.48	100.00	100.00
3.00	489.0	369.0	0.	0.23	99.77	100.00	2.38	46.41	27.02	13.68	10.51	100.00	100.00
4.00	652.0	532.0	0.	0.23	99.77	100.00	2.38	46.57	27.11	13.40	10.55	100.00	100.00
5.00	815.0	695.0	0.	0.23	99.77	100.00	2.37	46.72	27.19	13.13	10.58	100.00	100.00
6.00	978.0	858.0	0.	0.23	99.77	100.00	2.37	46.87	27.28	12.86	10.62	100.00	100.00
7.00	1141.0	1021.0	0.	0.23	99.77	100.00	2.37	47.01	27.37	12.60	10.65	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR	DAYS	DAYS	DAYS	AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
HALF-LIVES											
0.74	120.0	0.	0.	35.00	65.00	100.00	100.00	13.43	86.57	0.	0.
0.83	135.0	15.0	0.	35.00	65.00	100.00	100.00	12.72	87.28	85.57	14.43
1.00	163.0	43.0	0.	35.00	65.00	100.00	100.00	11.49	88.51	84.85	15.15
2.00	326.0	206.0	0.	34.98	65.02	100.00	100.00	6.20	93.80	80.43	19.57
3.00	489.0	369.0	0.	34.97	65.03	100.00	100.00	3.25	96.75	75.81	24.19
4.00	652.0	532.0	0.	34.95	65.05	100.00	100.00	1.68	98.32	71.22	28.78
5.00	815.0	695.0	0.	34.94	65.06	100.00	100.00	0.86	99.14	66.84	33.16
6.00	978.0	858.0	0.	34.92	65.08	100.00	100.00	0.44	99.56	62.78	37.22
7.00	1141.0	1021.0	0.	34.91	65.09	100.00	100.00	0.23	99.77	59.09	40.91

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

CASE NUMBER 1102

A = VP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 470.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1103

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/T	24460.0	INITIAL FLUX, N/SQ CM-SEC	7.38E 12	FISSILE RATIO	0.59	U235 IN TAILS/U235 ENR	0.37
POWER DENS, MW/T	15.00	AVG FLUX, NEUT/SQ CM-SEC	2.14E 12	INITIAL CONV RATIO	0.58	KG NATURAL/KG PRODUCED	4.102
RESIDENCE TIME, YRS	5.58	MAX FLUX/MIN FLUX	4.65	NONFUEL X-SECT 1/CM	0.048	KG NAT U/MWE-YR	106.370
TOTAL ENRICHMENT	2.97	AVG NEUTRON TEMP, C	358.	FUEL DENSITY	8.82	AVERAGE R	0.246
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.40	WATTS/CC	105.78	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.224	FINAL INTEGRATED REACTIVITY	1.100	FINAL REACTIVITY	1.017	REACTIVITY CHANGE/MWD, MK	0.0085

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	674	0	0	452	0	0.	1074	0	1037	0
AVERAGE	0.	669	0	0	464	0	0.	1063	0	1043	0
FINAL	0.	663	0	0	476	0	0.	1059	0	1035	0
ABSORPTION-INITIAL	46.01	762	302	195	563	145	12.82	1664	1005	1427	388
AVERAGE	44.59	756	292	191	579	114	12.29	1644	970	1437	366
FINAL	42.51	748	278	185	593	96	11.63	1636	920	1453	340
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.223	0.	0.	0.144	0.	0.041	0.
AVERAGE	0.	0.000	0.	0.	0.154	0.	0.	0.151	0.	0.047	0.
FINAL	0.	0.000	0.	0.	0.099	0.	0.	0.151	0.	0.050	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.278	0.	0.291	0.223	0.078	0.057	0.012
AVERAGE	0.000	0.000	0.000	0.000	0.192	0.003	0.276	0.234	0.078	0.064	0.012
FINAL	0.000	0.000	0.000	0.000	0.123	0.005	0.259	0.234	0.078	0.068	0.013
ALPHA	0.	0.131	0.	0.	0.246	0.	0.	0.549	0.	0.376	0.
INITIAL	0.	0.130	0.	0.	0.247	0.	0.	0.546	0.	0.377	0.
AVERAGE	0.	0.128	0.	0.	0.246	0.	0.	0.545	0.	0.377	0.
FINAL	0.	0.128	0.	0.	0.246	0.	0.	0.545	0.	0.377	0.
PERCENT OF TOTAL FISSILE	0.	0.0	0.	0.	39.0	0.	9.9	39.0	0.	12.1	0.
ETA	0.	2.21	0.	0.	1.95	0.	0.	1.87	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	2.12	0.	1.43	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.441	0.	0.140	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 1103

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.19	0.	0.	0.60	0.	0.18	0.
FINAL	0.	0.00	0.	0.	0.92	0.	0.	0.64	0.	0.21	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.1	0.	97.9	47.6	27.6	14.2	10.6
FINAL	100.0	0.0	100.0	0.0	0.9	0.2	98.8	45.6	27.0	15.0	12.4
ISOTOPIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.1927	0.	8.9541	0.0532	0.0310	0.0168	0.0120
FINAL	0.0000	0.0000	0.0000	0.0001	0.0808	0.0203	8.7882	0.0567	0.0337	0.0188	0.0156
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	2.1	-2272.9	413.0	-3371.0	70.9	54.7	56.5	72.1
GM/MWE-YR	0.0	0.0	0.0	0.5	-568.3	103.2	-842.8	17.7	13.7	14.1	18.0
GM/MWH	0.0000	0.0000	0.0000	0.0001	-0.0649	0.0118	-0.0962	0.0020	0.0016	0.0016	0.0021
GM/TON	0.0	0.0	0.0	11.8	-12693.5	2306.4	-18826.2	396.1	305.6	315.5	402.4
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	2.1	1642.1	413.0	17850.3	1151.0	684.2	581.4	316.8
GM/MWE-YR	0.	0.0	0.0	0.5	410.5	103.2	44628.1	288.	171.	95.	79.
GM/TON	0.	0.0	0.0	11.8	9170.5	2306.4	99688.9	6427.8	3821.3	2130.1	1769.3

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

EXPOSURE, MWD/TON 24460.0 INITIAL ENRICH. 2.97 POWER DENS, MW/T 51.60 AV. NEUTRON TEMPERATURE, °C 358.
 RESIDENCE TIME, YRS 5.58 AVERAGE R 0.246 KW/GRAMS FISSION 0.40 AVERAGE FLUX, NEUT/SQ CM=SEC 2.14E 12

BASIS=100 NEUTRONS ABSORBED IN FISSIONABLE MATERIAL

FISSION NEUTRONS FORMED	FUEL	REACTOR	FUEL	NON-FISSIONABLE CAPTURE	FUEL	REACTOR	FUEL
	INITIAL	AVERAGE	FINAL		INITIAL	AVERAGE	FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	97.37	76.97	96.53				
FROM PU-239	74.39	88.97	102.73				
FROM PU-241	22.51	28.81	35.33				
TOTAL	194.27	194.34	194.58				
NET FROM U-238	12.93	12.87	12.82	IN TH-232	-0.	0.00	0.00
NET FROM U-238	0.	0.	0.	IN U-234	-0.	0.00	0.01
TOTAL	207.19	207.21	207.41	IN U-238	45.41	51.14	45.41
				IN PU-240	12.22	14.51	13.66
				TOTAL	57.63	65.66	59.08
				NON-FERTILE CAPTURE			
				IN U-236	-0.	0.60	0.87
				IN PU-242	1.82	2.31	2.32
				IN SPECIAL PRODUCTS	0.43	2.29	3.34
				TOTAL	2.25	5.20	6.53
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	3.46	4.10	3.89
				IN OTHER F.P.	0.	8.56	11.09
				IN STRUCT. + MOD. + IMPUR.	4.10	4.86	4.60
				CONTROL + LEAKAGE	18.84	18.84	18.86
				TOTAL	26.39	36.35	38.43
				AS CAPTURE FORMING FERTILE ISOTOPES			
				IN U-233	-0.	0.00	0.00
				IN U-235	40.01	31.46	23.22
				IN PU-239	25.78	30.84	35.61
				IN PU-241	7.43	9.51	11.66
				TOTAL	73.22	71.80	70.49
				AS CAPTURE FORMING NON-FERTILE ISOTOPES			
				IN U-233	-0.	0.00	0.00
				IN PU-239	14.16	16.85	19.40
				TOTAL	14.16	16.85	19.40
				NEUTRONS INTO OR FROM OTHER FUEL			
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	207.19	207.21	207.41
				TOTAL FISSIONABLE ABSORPTION			
				100.00	100.00	100.00	100.00
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)			
				57.63	65.66	59.08	59.08

EXPOSURE 3000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1103

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FR-20
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	243	1431	522	6723	17	1177	13	379	0
FINAL	243	1414	520	6734	17	1179	13	380	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.8649	0.
FINAL	0.1703	0.5326	0.7194	0.0036	0.0346	0.0000	0.0305	2.6961	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	42.6	57.1	0.3	53.3	0.1	46.6	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0042	0.0000	0.0001	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	28.2	88.2	119.1	0.6	5.7	0.0	5.1	-27.9	-0.
GM/MWE-YR	7.05	22.05	29.78	0.15	1.43	0.00	1.26	-6.59	-0.
GM/MWH	0.0008	0.0025	0.0034	0.0000	0.0002	0.0000	0.0001	-0.0008	-0.
GM/TON	19.3	60.4	81.6	0.4	3.9	0.0	3.5	-19.1	-0.
WATTS/MWE-YR	0.	2.4	0.2	0.0	172.1	0.0	3.5	-3.9	0.

EXPOSURE 6000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1103

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	242	1420	520	6732	17	1178	13	380	0
FINAL	242	1404	514	6753	17	1182	13	381	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.8649	0.
FINAL	0.3998	0.9707	1.4157	0.0102	0.1000	0.0002	0.1214	2.5946	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	40.7	58.9	0.4	45.3	0.1	54.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0120	0.0000	0.0003	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	33.1	80.4	117.2	0.8	8.3	0.0	10.1	22.4	-0.
GM/MWE=VR	8.28	20.10	29.31	0.21	2.07	0.00	2.51	5.60	-0.
GM/MWH	0.0009	0.0023	0.0033	0.0000	0.0002	0.0000	0.0003	0.0006	-0.
GM/TON	45.4	110.1	160.6	1.2	11.3	0.0	13.8	30.7	-0.
WATTS/MWE=VR	0.	2.2	0.2	0.0	248.3	0.0	7.0	3.1	0.

EXPOSURE 9000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1103

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	242	1413	517	6742	17	1180	13	380	0
FINAL	241	1394	507	6773	17	1186	13	383	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.8649	0.
FINAL	0.6776	1.3260	2.0927	0.0167	0.1689	0.0005	0.2713	2.5732	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	38.8	60.7	0.5	38.5	0.1	61.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0203	0.0000	0.0008	0.0014	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	37.4	73.2	115.5	0.9	9.3	0.0	19.0	16.1	-0.
GM/MWE=VR	9.35	18.30	28.88	0.23	2.33	0.01	3.74	4.02	-0.
GM/MWH	0.0011	0.0021	0.0033	0.0000	0.0003	0.0000	0.0004	0.0005	-0.
GM/TON	76.9	150.4	237.4	1.9	19.2	0.1	30.8	33.1	-0.
WATTS/MWE=VR	0.	2.0	0.2	0.0	279.7	0.0	10.5	2.3	0.

EXPOSURE 12000.0 MWD/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1103	
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	241	1407	513	6752	17	1182	13	381	0
FINAL	239	1383	498	6794	17	1189	13	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.003	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.006	0.003	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.8649	0.
FINAL	0.9951	1.6085	2.7516	0.0222	0.2327	0.0010	0.4797	2.6270	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	36.9	62.6	0.5	32.8	0.1	67.1	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0279	0.0000	0.0013	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	41.2	66.6	113.9	0.9	9.6	0.0	19.9	-0.8	-0.
GM/MWE=YR	10.30	16.65	28.48	0.23	2.41	0.01	4.96	-2.46	-0.
GM/MWH	0.0012	0.0019	0.0033	0.0000	0.0003	0.0000	0.0006	-0.0003	-0.
GM/TON	112.9	182.5	312.1	2.5	26.4	0.1	54.4	-27.0	-0.
WATTS/MWE=YR	0.	1.8	0.2	0.0	289.1	0.0	13.9	-1.4	0.

EXPOSURE 15000.0 MWD/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 1103	
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	241	1401	509	6762	17	1183	13	382	0
FINAL	238	1372	489	6814	17	1193	13	386	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.006	0.004	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.8649	0.
FINAL	1.3446	1.8278	3.3951	0.0265	0.2893	0.0015	0.7450	2.7447	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	35.0	64.5	0.5	28.1	0.1	71.8	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0347	0.0000	0.0021	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	44.5	60.5	112.5	0.9	9.6	0.0	24.7	-4.0	-0.
GM/MWE=YR	11.13	15.14	28.11	0.22	2.40	0.01	6.17	-0.99	-0.
GM/MWH	0.0013	0.0017	0.0032	0.0000	0.0003	0.0000	0.0007	-0.0001	-0.
GM/TON	192.5	207.3	385.1	3.0	32.8	0.2	84.5	-13.6	-0.
WATTS/MWE=YR	0.	1.7	0.2	0.0	287.4	0.0	17.3	-0.6	0.

EXPOSURE 24460.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 1103

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP +0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	244	1552	525	6715	17	1176	13	379	0
AVERAGE	239	1384	496	6794	17	1189	13	384	0
FINAL	234	1339	460	6879	17	1204	13	392	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	+0.	+0.	+0.	+0.	+0.	+0.	+0.	0.003	+0.
AVERAGE	0.001	0.005	0.003	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.002	0.007	0.006	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	+0.	+0.	+0.	+0.	+0.	+0.	+0.	2.8649	0.
FINAL	2.5896	2.1931	9.3458	0.0334	0.4203	0.0034	1.9526	3.4137	+0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	+0.	+0.	+0.	+0.	+0.	+0.	+0.	100.0	0.
FINAL	100.0	29.1	70.4	0.4	17.8	0.1	82.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0504	0.0000	0.0055	0.0019	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	52.6	44.5	108.6	0.7	8.5	0.1	39.7	11.1	+0.
GM/MWE=VR	13.15	11.14	27.15	0.17	2.13	0.02	9.92	2.79	+0.
GM/MWH	0.0015	0.0013	0.0031	0.0000	0.0002	0.0000	0.0011	0.0003	+0.
GM/TON	293.7	248.8	606.4	3.8	47.7	0.4	221.5	62.3	+0.
WATTS/MWE=VR	0.	1.2	0.2	0.0	256.1	0.0	27.8	1.6	0.

GRADED FINAL K 1.100

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1103

EXPOSURE 24460.0 MWD/Y POWER DENS 15.00 MW/Y RESIDENCE TIME 5.58 YRS. LOAD FACTOR 0.33
 THERMAL TO ELECTRICAL EFF.

TIME AFTER REACTOR DISCHARGE	UNITS OF 0.45	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
YEAR HALF-LIFE	DAYS											
		*** GM/TON ***										
0.	0.	2306.38	293.75	387.24	6427.8	3821.3	2130.1	1769.3	248.78	606.40	47.67	221.50
0.09	15.0	2306.38	293.76	390.06	6427.8	3821.6	2125.5	1769.3	253.42	606.40	44.73	221.14
0.18	30.0	2306.38	293.78	392.70	6427.8	3822.0	2120.8	1769.3	258.05	606.39	41.97	220.78
0.28	45.0	2306.38	293.80	395.16	6427.8	3822.4	2116.2	1769.3	262.67	606.39	39.37	220.43
0.37	60.0	2306.38	293.81	397.47	6427.8	3822.7	2111.5	1769.3	267.29	606.39	36.94	220.07
0.55	90.0	2306.38	293.85	401.64	6427.8	3823.4	2102.3	1769.3	276.46	606.38	32.52	219.36
0.74	120.0	2306.38	293.88	405.27	6427.8	3824.1	2093.1	1769.3	285.63	606.38	28.62	218.65
0.92	150.0	2306.38	293.92	408.44	6427.8	3824.8	2084.0	1769.3	294.74	606.37	25.20	217.95
1.10	180.0	2306.38	293.95	411.19	6427.8	3825.5	2074.9	1769.3	303.80	606.37	22.18	217.24
2.21	360.0	2306.38	294.20	421.45	6427.8	3829.7	2021.1	1769.3	357.36	606.34	10.32	213.07
4.41	720.0	2306.38	294.81	426.28	6427.9	3837.8	1917.6	1769.3	460.19	606.29	2.23	204.96
6.13	1000.0	2306.38	295.39	425.29	6427.9	3843.9	1840.8	1769.3	536.40	606.25	0.68	198.86
		*** GM/MWE=YEAR ***										
0.	0.	103.424	13.172	17.365	288.24	171.36	95.92	79.34	11.156	27.192	2.138	9.933
0.09	15.0	103.424	13.173	17.491	288.24	171.37	95.31	79.34	11.364	27.192	2.006	9.917
0.18	30.0	103.424	13.174	17.609	288.24	171.39	95.10	79.34	11.572	27.192	1.882	9.900
0.28	45.0	103.424	13.175	17.720	288.24	171.40	94.89	79.34	11.779	27.192	1.766	9.885
0.37	60.0	103.424	13.175	17.823	288.24	171.42	94.69	79.34	11.986	27.192	1.656	9.869
0.55	90.0	103.424	13.177	18.010	288.24	171.45	94.27	79.34	12.398	27.192	1.458	9.837
0.74	120.0	103.424	13.178	18.173	288.24	171.48	93.86	79.34	12.808	27.192	1.284	9.805
0.92	150.0	103.424	13.180	18.315	288.24	171.51	93.45	79.34	13.217	27.191	1.130	9.773
1.10	180.0	103.424	13.182	18.439	288.24	171.55	93.04	79.34	13.623	27.191	0.995	9.742
2.21	360.0	103.424	13.193	18.899	288.24	171.73	90.63	79.34	16.025	27.190	0.463	9.554
4.41	720.0	103.424	13.220	19.115	288.24	172.10	85.99	79.34	20.636	27.188	0.100	9.191
6.13	1000.0	103.424	13.246	19.071	288.24	172.37	82.55	79.34	24.054	27.186	0.030	8.918

GRADED FINAL K 1.100

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1183

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/MWH ***

0.	0.	0.0118	0.0015	0.0003	0.0020	0.0016	0.0016	0.0021	0.0013	0.0031	0.0002	0.0011
0.09	15.0	0.0118	0.0015	0.0003	0.0020	0.0016	0.0016	0.0021	0.0013	0.0031	0.0002	0.0011
0.18	30.0	0.0118	0.0015	0.0003	0.0020	0.0016	0.0016	0.0021	0.0013	0.0031	0.0002	0.0011
0.28	45.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0015	0.0021	0.0013	0.0031	0.0002	0.0011
0.37	60.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0015	0.0021	0.0014	0.0031	0.0002	0.0011
0.55	90.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0015	0.0021	0.0014	0.0031	0.0002	0.0011
0.74	120.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0014	0.0021	0.0015	0.0031	0.0001	0.0011
0.92	150.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0014	0.0021	0.0015	0.0031	0.0001	0.0011
1.10	180.0	0.0118	0.0015	0.0004	0.0020	0.0016	0.0013	0.0021	0.0016	0.0031	0.0001	0.0011
2.21	360.0	0.0118	0.0015	0.0005	0.0020	0.0016	0.0011	0.0021	0.0018	0.0031	0.0001	0.0011
4.41	720.0	0.0118	0.0015	0.0005	0.0020	0.0016	0.0005	0.0021	0.0024	0.0031	0.0000	0.0010
6.13	1000.0	0.0118	0.0015	0.0005	0.0020	0.0017	0.0001	0.0021	0.0027	0.0031	0.0000	0.0010

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	9.7242	0.	0.	0.	0.	0.123	0.	256.54	27.811
0.09	15.0	0.	0.	9.7950	0.	0.	0.	0.	0.125	0.	240.69	27.766
0.18	30.0	0.	0.	9.8613	0.	0.	0.	0.	0.127	0.	225.82	27.721
0.28	45.0	0.	0.	9.9232	0.	0.	0.	0.	0.130	0.	211.87	27.677
0.37	60.0	0.	0.	9.9811	0.	0.	0.	0.	0.132	0.	198.78	27.632
0.55	90.0	0.	0.	10.0358	0.	0.	0.	0.	0.136	0.	174.97	27.543
0.74	120.0	0.	0.	10.1771	0.	0.	0.	0.	0.141	0.	154.02	27.454
0.92	150.0	0.	0.	10.2566	0.	0.	0.	0.	0.145	0.	135.58	27.365
1.10	180.0	0.	0.	10.3258	0.	0.	0.	0.	0.150	0.	119.34	27.277
2.21	360.0	0.	0.	10.5835	0.	0.	0.	0.	0.176	0.	55.52	26.753
4.41	720.0	0.	0.	10.7046	0.	0.	0.	0.	0.227	0.	12.02	25.734
6.13	1000.0	0.	0.	10.6798	0.	0.	0.	0.	0.265	0.	3.65	24.969

GRADED FINAL K 1.100

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 1183

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.23	100.00	2.66	44.22	26.29	14.65	12.17	29.09	70.91	17.71	82.29
0.09	15.0	0.23	100.00	2.68	44.23	26.29	14.62	12.17	29.47	70.53	16.82	83.18
0.18	30.0	0.23	100.00	2.70	44.23	26.30	14.59	12.17	29.85	70.15	15.97	84.03
0.28	45.0	0.23	100.00	2.72	44.24	26.31	14.56	12.18	30.22	69.78	15.15	84.85
0.37	60.0	0.23	100.00	2.74	44.24	26.31	14.53	12.18	30.59	69.41	14.37	85.63
0.55	90.0	0.23	100.00	2.77	44.25	26.32	14.47	12.18	31.32	68.68	12.91	87.09
0.74	120.0	0.23	100.00	2.79	44.27	26.34	14.42	12.19	32.02	67.98	11.58	88.42
0.92	150.0	0.23	100.00	2.81	44.29	26.35	14.36	12.19	32.71	67.29	10.36	89.64
1.10	180.0	0.23	100.00	2.83	44.30	26.37	14.30	12.19	33.38	66.62	9.26	90.74
2.21	360.0	0.23	100.00	2.91	44.42	26.47	13.97	12.23	37.08	62.92	4.62	95.38
4.41	720.0	0.23	100.00	2.96	44.70	26.69	13.34	12.30	43.15	56.85	1.08	98.92
6.13	1000.0	0.23	100.00	2.97	44.93	26.87	12.87	12.37	46.94	53.06	0.34	99.66

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 1163

EXPOSURE 24460.0 MWD/Y POWER DENS 15.00 MW/T RESIDENCE TIME 5.58 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR HALF=LIVES	DAYS		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
YIELD FACTOR			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.	2237.19	975890.6	279.19	393.11	6235.0	3709.4	2030.3	1716.2	0.	0.
0.83	135.0	15.0	2237.19	975890.6	279.19	392.99	6235.0	3709.4	2025.9	1716.2	0.00	4.44
1.00	163.0	43.0	2237.19	975890.6	279.19	392.75	6235.0	3709.4	2017.6	1716.2	0.00	12.70
2.00	326.0	206.0	2237.19	975890.6	279.19	391.39	6235.0	3709.4	1970.2	1716.2	0.03	60.11
3.00	489.0	369.0	2237.19	975890.6	279.19	390.03	6235.0	3709.4	1923.9	1716.2	0.08	166.37
4.00	652.0	532.0	2237.19	975890.6	279.19	388.68	6235.0	3709.4	1878.7	1716.2	0.17	151.51
5.00	815.0	695.0	2237.19	975890.6	279.19	387.33	6235.0	3709.4	1834.5	1716.2	0.29	195.56
6.00	978.0	858.0	2237.19	975890.6	279.19	385.99	6235.0	3709.4	1791.4	1716.2	0.43	238.94
7.00	1141.0	1021.0	2237.19	975890.6	279.19	384.65	6235.0	3709.4	1749.3	1716.2	0.61	280.48

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR	HALF-LIVES		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
DAYS										
YIELD			0.950	0.950	0.	0.	0.950	0.950	0.	0.
FACTOR										
0.74	120.0	0.	271.35	576.06	0.	0.	27.19	207.72	0.	0.
0.83	135.0	15.0	271.33	576.06	0.02	0.00	25.51	207.38	1.68	0.34
1.00	163.0	43.0	271.30	576.05	0.05	0.01	22.65	206.76	4.54	0.96
2.00	326.0	206.0	271.11	576.03	0.23	0.03	11.33	203.16	15.83	4.56
3.00	489.0	369.0	270.93	576.01	0.41	0.05	5.66	199.62	21.42	8.10
4.00	652.0	532.0	270.75	575.98	0.60	0.08	2.83	196.14	24.17	11.58
5.00	815.0	695.0	270.57	575.96	0.78	0.10	1.42	192.73	25.50	14.99
6.00	978.0	858.0	270.38	575.94	0.96	0.12	0.71	189.37	26.12	16.35
7.00	1141.0	1021.0	270.20	575.91	1.15	0.15	0.35	186.07	26.38	21.65

GRADED FINAL K 1.100

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 1163

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR HALF=LIVES	DAYS		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	100.32	43761.35	12.92	17.63	279.59	166.34	91.05	76.96	0.	0.
0.83	135.0	15.0	100.32	43761.35	12.92	17.62	279.59	166.34	90.85	76.96	0.00	0.26
1.00	163.0	43.0	100.32	43761.35	12.92	17.61	279.59	166.34	90.48	76.96	0.00	0.57
2.00	326.0	206.0	100.32	43761.35	12.92	17.55	279.59	166.34	88.35	76.96	0.00	2.70
3.00	489.0	369.0	100.32	43761.35	12.92	17.49	279.59	166.34	86.27	76.96	0.00	4.77
4.00	652.0	532.0	100.32	43761.35	12.92	17.43	279.59	166.34	84.24	76.96	0.01	6.79
5.00	815.0	695.0	100.32	43761.35	12.92	17.37	279.59	166.34	82.26	76.96	0.01	8.77
6.00	978.0	858.0	100.32	43761.35	12.92	17.31	279.59	166.34	80.33	76.96	0.02	10.78
7.00	1141.0	1021.0	100.32	43761.35	12.92	17.25	279.59	166.34	78.44	76.96	0.03	12.58

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF=LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	12.17	25.83	0.	0.	1.22	9.31	0.	0.
0.83	135.0	15.0	12.17	25.83	0.00	0.0001	1.14	9.30	0.08	0.02
1.00	163.0	43.0	12.17	25.83	0.00	0.0003	1.02	9.27	0.20	0.04
2.00	326.0	206.0	12.16	25.83	0.01	0.0013	0.91	9.11	0.71	0.20
3.00	489.0	369.0	12.15	25.83	0.02	0.0024	0.75	8.95	0.96	0.36
4.00	652.0	532.0	12.14	25.83	0.03	0.0034	0.53	8.80	1.08	0.92
5.00	815.0	695.0	12.13	25.83	0.03	0.0045	0.36	8.64	1.14	0.67
6.00	978.0	858.0	12.12	25.83	0.04	0.0055	0.23	8.49	1.17	0.82
7.00	1141.0	1021.0	12.12	25.83	0.05	0.0065	0.12	8.34	1.18	0.97

GRADED FINAL K-1,100

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 1153

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR	HALF-LIVES		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0011	0.0018	0.	0.
0.83	135.0	15.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0011	0.0018	0.0000	0.0000
1.00	163.0	43.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0011	0.0018	0.0000	0.0001
2.00	326.0	206.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0008	0.0018	0.0000	0.0003
3.00	489.0	369.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0006	0.0018	0.0000	0.0005
4.00	652.0	532.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0003	0.0018	0.0000	0.0008
5.00	815.0	695.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0001	0.0018	0.0000	0.0010
6.00	978.0	858.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0001	0.0018	0.0000	0.0012
7.00	1141.0	1021.0	0.0114	0.3156	0.0014	0.0003	0.0010	0.0010	0.0003	0.0018	0.0000	0.0014

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR	HALF-LIVES		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0014	0.0029	0.	0.	0.0001	0.0011	0.	0.
0.83	135.0	15.0	0.0014	0.0029	0.0000	0.0000	0.0001	0.0011	0.0000	0.0000
1.00	163.0	43.0	0.0014	0.0029	0.0000	0.0000	0.0001	0.0011	0.0000	0.0000
2.00	326.0	206.0	0.0014	0.0029	0.0000	0.0000	0.0001	0.0010	0.0001	0.0000
3.00	489.0	369.0	0.0014	0.0029	0.0000	0.0000	0.0000	0.0010	0.0001	0.0000
4.00	652.0	532.0	0.0014	0.0029	0.0000	0.0000	0.0000	0.0010	0.0001	0.0000
5.00	815.0	695.0	0.0014	0.0029	0.0000	0.0000	0.0000	0.0010	0.0001	0.0001
6.00	978.0	858.0	0.0014	0.0029	0.0000	0.0000	0.0000	0.0010	0.0001	0.0001
7.00	1141.0	1021.0	0.0014	0.0029	0.0000	0.0000	0.0000	0.0010	0.0001	0.0001

GRADED FINAL K-1,100

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 1103

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED.....						
0.45 YR	HALF-LIVES		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	9.8718	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	9.8686	0.	0.	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	9.8627	0.	0.	0.	0.	0.	0.006
2.00	326.0	206.0	0.	0.	0.	9.8285	0.	0.	0.	0.	0.	0.030
3.00	489.0	369.0	0.	0.	0.	9.7944	0.	0.	0.	0.	0.	0.082
4.00	652.0	532.0	0.	0.	0.	9.7605	0.	0.	0.	0.	0.	0.075
5.00	815.0	695.0	0.	0.	0.	9.7266	0.	0.	0.	0.	0.	0.096
6.00	978.0	858.0	0.	0.	0.	9.6929	0.	0.	0.	0.	0.	0.118
7.00	1141.0	1021.0	0.	0.	0.	9.6592	0.	0.	0.	0.	0.	0.138

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR	HALF-LIVES		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.134	0.	0.	0.	146.32	26.081	0.	0.
0.83	135.0	15.0	0.134	0.	0.	0.	137.28	26.039	0.0422	0.
1.00	163.0	43.0	0.134	0.	0.	0.	121.87	25.960	0.1140	0.
2.00	326.0	206.0	0.134	0.	0.	0.	60.95	25.508	0.3974	0.
3.00	489.0	369.0	0.134	0.	0.	0.	30.48	25.064	0.5380	0.
4.00	652.0	532.0	0.134	0.	0.	0.	15.24	24.627	0.6071	0.
5.00	815.0	695.0	0.133	0.	0.	0.	7.62	24.198	0.6404	0.
6.00	978.0	858.0	0.133	0.	0.	0.	3.81	23.777	0.6560	0.
7.00	1141.0	1021.0	0.133	0.	0.	0.	1.91	23.363	0.6626	0.

GRADED FINAL K: 1.100

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 1103

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM	PLUTONIUM							
			..RECOVERED...		RECOVERED	RECOVERED.....							
			U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241	
0.74	120.0	0.	0.23	99.77	100.00	2.79	44.27	26.34	14.42	12.19	100.00	100.00	
0.83	135.0	15.0	0.23	99.77	100.00	2.79	44.28	26.35	14.39	12.19	100.00	100.00	
1.00	163.0	43.0	0.23	99.77	100.00	2.79	44.31	26.36	14.34	12.20	100.00	100.00	
2.00	326.0	206.0	0.23	99.77	100.00	2.79	44.46	26.45	14.05	12.24	100.00	100.00	
3.00	489.0	369.0	0.23	99.77	100.00	2.79	44.62	26.54	13.77	12.28	100.00	100.00	
4.00	652.0	532.0	0.23	99.77	100.00	2.79	44.77	26.63	13.49	12.32	100.00	100.00	
5.00	815.0	695.0	0.23	99.77	100.00	2.79	44.91	26.72	13.21	12.36	100.00	100.00	
6.00	978.0	858.0	0.23	99.77	100.00	2.79	45.06	26.81	12.95	12.40	100.00	100.00	
7.00	1141.0	1021.0	0.23	99.77	100.00	2.79	45.20	26.89	12.68	12.44	100.00	100.00	

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
			RECOVERED.....				RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	32.02	67.98	100.00	100.00	11.58	88.42	0.	0.
0.83	135.0	15.0	32.02	67.98	100.00	100.00	10.95	89.05	83.35	16.65
1.00	163.0	43.0	32.02	67.98	100.00	100.00	9.87	90.13	82.54	17.46
2.00	326.0	206.0	32.00	68.00	100.00	100.00	5.28	94.72	77.62	22.38
3.00	489.0	369.0	31.99	68.01	100.00	100.00	2.76	97.24	72.56	27.44
4.00	652.0	532.0	31.98	68.02	100.00	100.00	1.42	98.58	67.62	32.38
5.00	815.0	695.0	31.96	68.04	100.00	100.00	0.73	99.27	62.97	37.03
6.00	978.0	858.0	31.95	68.05	100.00	100.00	0.37	99.63	58.74	41.26
7.00	1141.0	1021.0	31.93	68.07	100.00	100.00	0.19	99.81	54.93	45.07

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM RECYCLE IN BOILING WATER REACTOR

CASE NUMBER 1103

A = VP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS: 610.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2001

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24182.0	INITIAL FLUX, N/SQ CM-SEC	1.12E 13	FISSILE RATIO	0.64	U235 IN TAILS/U235 ENR	0.40				
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	6.09E 12	INITIAL CONV RATIO	0.59	KG NATURAL/KG PRODUCED	9.245				
RESIDENCE TIME, YRS	3.31	MAX FLUX/MIN FLUX	2.25	NONEUEL X-SECT 1/CM	0.072	KG NAT U/MWE-YR	104.106				
TOTAL ENRICHMENT	3.27	AVG NEUTRON TEMP, C	395	FUEL DENSITY	9.26	AVERAGE R	0.303				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.61	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.191	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.012	REACTIVITY CHANGE/MWD, MK	0.0074				
ISOTOPES	PH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	740	0	0	465	0	0	1177	0	1088	0
AVERAGE	0.	739	0	0	478	0	0	1193	0	1083	0
FINAL	0.	734	0	0	486	0	0	1141	0	1085	0
ABSORPTION-INITIAL	55.21	839	364	221	584	121	15.98	1839	1467	1500	540
AVERAGE	54.98	838	362	220	599	109	15.77	1799	1352	1493	521
FINAL	53.61	832	353	217	614	100	15.28	1777	1233	1495	489
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.286	0.	0.	0.157	0.	0.027	0.
AVERAGE	0.	0.000	0.	0.	0.206	0.	0.	0.179	0.	0.041	0.
FINAL	0.	0.000	0.	0.	0.138	0.	0.	0.188	0.	0.052	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.359	0.009	0.360	0.246	0.069	0.037	0.003
AVERAGE	0.000	0.000	0.000	0.000	0.259	0.012	0.352	0.279	0.081	0.057	0.006
FINAL	0.000	0.000	0.000	0.000	0.175	0.013	0.337	0.293	0.089	0.072	0.009
ALPHA	0.	0.134	0.	0.	0.256	0.	0.	0.562	0.	0.379	0.
AVERAGE	0.	0.134	0.	0.	0.261	0.	0.	0.560	0.	0.378	0.
FINAL	0.	0.134	0.	0.	0.263	0.	0.	0.557	0.	0.378	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	42.9	0.	10.4	37.9	0.	8.8	0.
ETA	0.	2.21	0.	0.	1.93	0.	0.	1.85	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.91	0.	1.39	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.477	0.	0.108	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2001

ISOTOPES	YH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.59	0.	0.	0.57	0.	0.11	0.
FINAL	0.	0.00	0.	0.	1.20	0.	0.	0.71	0.	0.21	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.6	0.3	97.0	63.0	22.3	11.6	3.0
FINAL	100.0	0.0	100.0	0.0	1.3	0.6	98.2	54.2	23.7	15.8	6.3
ISOTOPIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.2400	0.0295	8.9028	0.0531	0.0189	0.0099	0.0026
FINAL	0.0000	0.0000	0.0000	0.0000	0.1110	0.0505	8.7250	0.0654	0.0288	0.0192	0.0077
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.0	4207.0	684.3	5799.5	402.5	324.1	304.7	166.9
GM/MWE-YR	0.0	0.0	0.0	0.1	631.1	102.7	869.9	60.4	48.6	45.7	25.0
GM/MWH	0.0000	0.0000	0.0000	0.0000	0.0720	0.0117	0.0993	0.0069	0.0056	0.0052	0.0029
GM/TON	0.0	0.0	0.0	3.2	13936.5	2267.0	19212.0	1333.3	1073.7	1009.5	553.0
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.0	3620.3	1647.3	28456.0	2132.8	939.0	627.2	250.7
GM/MWE-YR	0.	0.0	0.0	0.1	543.1	247.1	42686.6	320.	141.	94.	38.
GM/TON	0.	0.0	0.0	3.2	11993.1	5456.9	94266.8	7065.4	3110.5	2677.7	830.4

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 2001

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24182.0 INITIAL ENRICH. 3.27 POWER DENS, MW/T 135.79 AV. NEUTRON TEMPERATURE, C 395.
 RESIDENCE TIME, YRS 3.31 AVERAGE R 0.303 KW/GRAMS FISSILE 0.61 AVERAGE FLUX, NEUT/SD CM-SEC 6.09E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	108.41	84.10	62.39	IN TH-232	-0.	0.00	0.00
FROM PU-239	70.70	85.73	100.58	IN U-234	-0.	0.00	0.00
FROM PU-241	12.69	20.95	29.29	IN U-238	49.27	53.60	48.12
TOTAL	191.80	191.77	192.26	IN PU-240	9.50	12.28	12.71
NET FROM U-238	13.56	13.49	13.43	TOTAL	58.77	65.89	60.83
NET FROM U-238	0.	0.	0.				
TOTAL	205.36	205.25	205.69	NON-FERTILE CAPTURE			
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				IN U-236	1.25	1.75	1.84
IN U-233	-0.	0.00	0.00	IN PU-242	0.47	0.96	1.33
IN U-235	44.54	34.56	25.63	IN SPECIAL PRODUCTS	0.71	1.54	2.24
IN PU-239	24.51	30.06	34.86	TOTAL	2.43	4.26	5.42
IN PU-241	4.19	5.91	9.67	NON-FUEL ABSORPTION + LEAKAGE			
TOTAL	73.23	71.54	70.16	IN SM + XE	3.86	4.30	4.03
AS CAPTURE FORMING FERTILE ISOTOPES				IN OTHER F.P.	0.	8.43	11.03
IN U-233	-0.	0.00	0.00	IN STRUCT. + MOD. + IMPUR.	5.97	6.64	6.22
IN PU-239	13.78	16.83	19.43	CONTROL + LEAKAGE	15.74	15.73	15.76
IN PU-241	13.78	16.83	19.43	TOTAL	25.57	35.11	37.03
TOTAL	13.78	16.83	19.43				
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL	18.59	0.	2.41
IN U-235	11.40	9.02	6.75	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	1.59	2.61	3.65	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	12.98	11.63	10.40	TOTAL ABSORPTION + LEAKAGE	205.36	205.25	205.69
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	58.77	65.89	60.83

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS *** CASE NUMBER 2001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	270	1629	630	6962	17	1219	13	384	0
AVERAGE	269	1627	632	6968	17	1219	13	384	0
FINAL	269	1625	634	6977	17	1221	13	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.004	0.001	-0.	-0.	-0.	-0.	-0.001	-0.
AVERAGE	0.000	0.004	0.001	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	0.9207	0.4688	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	1.1281	0.9591	0.7633	0.0143	0.1793	0.0004	0.0941	0.8045	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	66.4	33.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	55.3	43.9	0.8	65.2	0.1	34.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0210	0.0000	0.0003	0.0005	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	178.0	5.4	46.5	2.3	27.6	0.1	14.8	10.5	-0.
GM/MWE-YR	26.69	0.81	6.97	0.34	4.15	0.01	2.23	1.58	-0.
GM/MWH	0.0030	0.0001	0.0008	0.0000	0.0005	0.0000	0.0003	0.0002	-0.
GM/TON	121.9	3.7	31.8	1.5	18.9	0.0	10.2	7.2	-0.
WATTS/MWE-YR	0.	0.1	0.8	0.0	497.6	0.0	6.2	0.9	0.

EXPOSURE 10000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 2001		
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		270	1629	630	6962	17	1219	13	384	0
AVERAGE		268	1624	632	6975	17	1221	13	384	0
FINAL		267	1615	630	6993	17	1224	13	386	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		0.0	0.004	0.001	0.0	0.0	0.0	0.0	0.001	0.0
AVERAGE		0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.001	0.0
FINAL		0.002	0.004	0.002	0.000	0.000	0.000	0.000	0.001	0.0
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		0.0	0.9207	0.4688	0.0	0.0	0.0	0.0	0.7377	0.0
FINAL		2.3200	1.0375	1.1325	0.0179	0.2537	0.0011	0.2416	1.0515	0.0
PERCENT OF ELEMENT COMPOSITION										
INITIAL		0.0	66.4	33.6	0.0	0.0	0.0	0.0	100.0	0.0
FINAL		100.0	47.6	51.6	0.8	51.3	0.2	48.5	100.0	0.0
HEAT OUTPUT, WATTS/CC		0.0	0.0001	0.0000	0.0000	0.0304	0.0000	0.0007	0.0006	0.0
NET ISOTOPIC PRODUCTION										
GM/TON-YR		183.0	9.2	52.3	1.4	20.0	0.1	19.1	24.7	0.0
GM/MWE-YR		27.45	1.38	7.85	0.21	3.00	0.01	2.86	3.71	0.0
GM/MWH		0.0031	0.0002	0.0009	0.0000	0.0003	0.0000	0.0003	0.0004	0.0
GM/TON		250.7	12.6	71.7	1.9	27.4	0.1	26.1	33.9	0.0
WATTS/MWE-YR		0.0	0.2	0.1	0.0	360.2	0.0	8.0	2.1	0.0

EXPOSURE 15000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 2001			
ISOTOPE		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		270	1629	630	6962	17	1219	13	384	0
AVERAGE		267	1619	630	6984	17	1222	13	385	0
FINAL		265	1602	622	7010	18	1227	13	387	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		0.0	0.004	0.001	0.0	0.0	0.0	0.0	0.001	0.0
AVERAGE		0.001	0.004	0.001	0.000	0.000	0.000	0.000	0.001	0.0
FINAL		0.002	0.005	0.002	0.000	0.000	0.000	0.000	0.001	0.0
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		0.0	0.9207	0.4688	0.0	0.0	0.0	0.0	0.7377	0.0
FINAL		3.5520	1.1392	1.5807	0.0198	0.3066	0.0019	0.4570	1.4142	0.0
PERCENT OF ELEMENT COMPOSITION										
INITIAL		0.0	66.4	33.6	0.0	0.0	0.0	0.0	100.0	0.0
FINAL		100.0	41.8	57.5	0.7	40.3	0.3	59.5	100.0	0.0
HEAT OUTPUT, WATTS/CC										
		0.0	0.0001	0.0000	0.0000	0.0368	0.0000	0.0013	0.0008	0.0
NET ISOTOPIC PRODUCTION										
GM/TON-YR		186.8	11.5	58.5	1.0	16.1	0.1	24.0	35.6	0.0
GM/MWE-YR		28.02	1.72	8.77	0.16	2.42	0.02	3.60	5.34	0.0
GM/MWH		0.0032	0.0002	0.0010	0.0000	0.0003	0.0000	0.0004	0.0006	0.0
GM/TON		383.8	23.6	120.1	2.1	33.1	0.2	49.4	73.1	0.0
WATTS/MWE-YR		0.0	0.2	0.1	0.0	290.2	0.0	10.1	3.0	0.0

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP #0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	270	1629	630	6962	17	1219	13	384	0
AVERAGE	266	1613	627	6992	17	1224	13	385	0
FINAL	263	1587	611	7028	18	1230	13	388	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	0.004	0.001	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.002	0.004	0.002	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.003	0.005	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	0.9207	0.4688	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	4.8045	1.2416	2.1121	0.0216	0.3545	0.0027	0.7555	1.8722	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	65.4	33.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	37.0	62.4	0.6	32.0	0.2	67.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0425	0.0000	0.0021	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	189.5	12.7	64.8	0.9	14.0	0.1	29.8	44.7	-0.
GM/MWE=YR	28.42	1.90	9.72	0.13	2.10	0.02	4.47	6.71	-0.
GM/MWH	0.0032	0.0002	0.0011	0.0000	0.0002	0.0000	0.0005	0.0008	-0.
GM/TON	519.1	34.7	177.5	2.3	38.3	0.3	81.6	122.6	-0.
WATTS/MWE=YR	0.	0.2	0.1	0.0	251.6	0.0	12.5	3.8	0.

EXPOSURE 24182.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP #0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	270	1629	630	6962	17	1219	13	384	0
AVERAGE	266	1607	623	6999	17	1225	13	386	0
FINAL	261	1574	601	7042	18	1233	13	390	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	0.004	0.001	-0.	-0.	-0.	-0.	0.001	-0.
AVERAGE	0.002	0.004	0.002	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.004	0.005	0.004	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	0.9207	0.4688	-0.	-0.	-0.	-0.	0.7377	0.
FINAL	5.8512	1.3188	2.6204	0.0228	0.3940	0.0034	1.0817	2.3215	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	66.4	33.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	33.5	66.0	0.6	26.8	0.2	73.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0473	0.0000	0.0030	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	190.8	13.0	70.2	0.7	12.9	0.1	35.3	51.7	-0.
GM/MWE=YR	28.63	1.95	10.53	0.11	1.93	0.02	5.29	7.75	-0.
GM/MWH	0.0033	0.0002	0.0012	0.0000	0.0002	0.0000	0.0006	0.0009	-0.
GM/TON	632.2	43.0	232.5	2.5	42.6	0.4	116.9	171.1	-0.
WATTS/MWE=YR	0.	0.2	0.1	0.0	231.3	0.0	14.8	4.3	0.

GRADED FINAL K 1.003

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 2001

EXPOSURE 24182.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.31 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
0.	0.	5456.92	632.18	250.82	7065.4	3110.5	2077.7	830.4	142.49	283.12
0.09	15.0	5456.92	632.19	253.37	7065.4	3110.7	2073.2	830.4	147.03	283.12
0.18	30.0	5456.92	632.20	255.76	7065.4	3110.9	2068.6	830.4	151.55	283.12
0.28	45.0	5456.92	632.21	257.99	7065.4	3111.1	2064.1	830.4	156.06	283.12
0.37	60.0	5456.92	632.22	260.08	7065.4	3111.3	2059.6	830.4	160.57	283.11
0.55	90.0	5456.92	632.24	263.86	7065.4	3111.6	2050.6	830.4	169.55	283.11
0.74	120.0	5456.92	632.26	267.17	7065.4	3112.0	2041.6	830.4	178.48	283.11
0.92	150.0	5456.92	632.28	270.06	7065.4	3112.4	2032.7	830.4	187.38	283.11
1.10	180.0	5456.92	632.31	272.58	7065.4	3112.8	2023.8	830.4	196.24	283.11
2.21	360.0	5456.92	632.47	282.11	7065.4	3115.0	1971.4	830.4	248.55	283.09
4.41	720.0	5456.92	632.92	287.13	7065.5	3119.2	1870.2	830.4	349.00	283.07
6.13	1000.0	5456.92	633.37	286.81	7065.5	3122.5	1795.6	830.4	423.45	283.05

*** GM/MWE-YEAR ***

0.	0.	247.515	28.674	11.377	320.47	141.09	94.24	37.67	6.463	12.842
0.09	15.0	247.515	28.675	11.492	320.47	141.10	94.03	37.67	6.669	12.842
0.18	30.0	247.515	28.675	11.601	320.47	141.10	93.83	37.67	6.874	12.842
0.28	45.0	247.515	28.676	11.702	320.47	141.11	93.62	37.67	7.079	12.842
0.37	60.0	247.515	28.676	11.797	320.47	141.12	93.42	37.67	7.283	12.841
0.55	90.0	247.515	28.677	11.968	320.47	141.14	93.01	37.67	7.690	12.841
0.74	120.0	247.515	28.678	12.118	320.47	141.15	92.60	37.67	8.096	12.841
0.92	150.0	247.515	28.679	12.249	320.47	141.17	92.20	37.67	8.499	12.841
1.10	180.0	247.515	28.680	12.364	320.47	141.19	91.80	37.67	8.901	12.841
2.21	360.0	247.515	28.688	12.796	320.47	141.29	89.42	37.67	11.274	12.841
4.41	720.0	247.515	28.708	13.024	320.48	141.48	84.84	37.67	15.830	12.839
6.13	1000.0	247.515	28.728	13.009	320.48	141.63	81.44	37.67	19.207	12.838

GRADED FINAL K 1.003

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 2001

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWE ***										

0.	0.	0.0117	0.0033	0.0009	0.0069	0.0056	0.0052	0.0029	0.0002	0.0012
0.09	15.0	0.0117	0.0033	0.0009	0.0069	0.0056	0.0052	0.0029	0.0002	0.0012
0.18	30.0	0.0117	0.0033	0.0009	0.0069	0.0056	0.0052	0.0029	0.0003	0.0012
0.28	45.0	0.0117	0.0033	0.0009	0.0069	0.0056	0.0052	0.0029	0.0003	0.0012
0.37	60.0	0.0117	0.0033	0.0009	0.0069	0.0056	0.0051	0.0029	0.0003	0.0012
0.55	90.0	0.0117	0.0033	0.0010	0.0069	0.0056	0.0051	0.0029	0.0004	0.0012
0.74	120.0	0.0117	0.0033	0.0010	0.0069	0.0056	0.0050	0.0029	0.0004	0.0012
0.92	150.0	0.0117	0.0033	0.0010	0.0069	0.0056	0.0050	0.0029	0.0005	0.0012
1.10	180.0	0.0117	0.0033	0.0010	0.0069	0.0056	0.0049	0.0029	0.0005	0.0012
2.21	360.0	0.0117	0.0033	0.0010	0.0069	0.0056	0.0047	0.0029	0.0008	0.0012
4.41	720.0	0.0117	0.0033	0.0011	0.0069	0.0056	0.0042	0.0029	0.0013	0.0012
6.13	1000.0	0.0117	0.0033	0.0011	0.0069	0.0056	0.0038	0.0029	0.0017	0.0012

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	6.3710	0.	0.	0.	0.	0.071	0.
0.09	15.0	0.	0.	6.4358	0.	0.	0.	0.	0.073	0.
0.18	30.0	0.	0.	6.4964	0.	0.	0.	0.	0.076	0.
0.28	45.0	0.	0.	6.5531	0.	0.	0.	0.	0.078	0.
0.37	60.0	0.	0.	6.6062	0.	0.	0.	0.	0.080	0.
0.55	90.0	0.	0.	6.7023	0.	0.	0.	0.	0.085	0.
0.74	120.0	0.	0.	6.7863	0.	0.	0.	0.	0.089	0.
0.92	150.0	0.	0.	6.8597	0.	0.	0.	0.	0.093	0.
1.10	180.0	0.	0.	6.9237	0.	0.	0.	0.	0.098	0.
2.21	360.0	0.	0.	7.1656	0.	0.	0.	0.	0.124	0.
4.41	720.0	0.	0.	7.2933	0.	0.	0.	0.	0.174	0.
6.13	1000.0	0.	0.	7.2851	0.	0.	0.	0.	0.211	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 2001

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

TIME AFTER REACTOR DISCHARGE UNITS OF 0.45 YEAR HALF-LIFE	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
0.	0.	0.57	100.00	1.88	52.98	23.33	15.58	6.23	33.48	66.52	26.70	73.30
0.09	15.0	0.57	100.00	1.90	52.99	23.33	15.58	6.23	34.18	65.82	25.50	74.50
0.18	30.0	0.57	100.00	1.92	53.00	23.34	15.52	6.23	34.87	65.13	24.34	75.66
0.28	45.0	0.57	100.00	1.94	53.01	23.34	15.49	6.23	35.54	64.46	23.21	76.79
0.37	60.0	0.57	100.00	1.95	53.02	23.35	15.45	6.23	36.19	63.81	22.12	77.88
0.55	90.0	0.57	100.00	1.98	53.04	23.36	15.39	6.23	37.46	62.54	20.06	79.94
0.74	120.0	0.57	100.00	2.01	53.06	23.37	15.33	6.24	38.67	61.33	18.14	81.86
0.92	150.0	0.57	100.00	2.03	53.08	23.38	15.27	6.24	39.83	60.17	16.36	83.64
1.10	180.0	0.57	100.00	2.05	53.10	23.40	15.21	6.24	40.94	59.06	14.73	85.27
2.21	360.0	0.57	100.00	2.13	53.27	23.48	14.86	6.26	46.75	53.25	7.58	92.42
4.41	720.0	0.57	100.00	2.18	53.64	23.68	14.20	6.30	55.22	44.78	1.81	98.19
6.13	1000.0	0.57	100.00	2.19	53.93	23.83	13.71	6.34	59.94	40.06	0.57	99.43

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 2001

EXPOSURE 24182.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.31 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED... U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED..... PU238 PU239 PU240 PU241 PU242 NP237 AM241
			YIELD FACTOR 0.970 0.970	0.950	0.970 0.970 0.970 0.970 0.970 0. 0.
0.74	120.0	0.	5293.21 926024.6	600.65	259.16 6853.5 3018.7 1980.4 805.5 0. 0.
0.83	135.0	15.0	5293.21 926024.6	600.65	259.07 6853.5 3018.7 1976.1 805.5 0.00 4.33
1.00	163.0	43.0	5293.21 926024.6	600.65	258.92 6853.5 3018.7 1968.0 805.5 0.00 12.39
2.00	326.0	206.0	5293.21 926024.6	600.65	258.02 6853.5 3018.7 1921.7 805.5 0.03 58.63
3.00	489.0	369.0	5293.21 926024.6	600.65	257.13 6853.5 3018.7 1876.5 805.5 0.08 103.75
4.00	652.0	532.0	5293.21 926024.6	600.65	256.23 6853.5 3018.7 1832.4 805.5 0.17 147.78
5.00	815.0	695.0	5293.21 926024.6	600.65	255.34 6853.5 3018.7 1789.4 805.5 0.28 190.75
6.00	978.0	858.0	5293.21 926024.6	600.65	254.46 6853.5 3018.7 1747.3 805.5 0.42 232.67
7.00	1141.0	1021.0	5293.21 926024.6	600.65	253.58 6853.5 3018.7 1706.2 805.5 0.59 273.98

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED..... AM241 AM243 NP237 PU239	CURIUMRECOVERED..... CM242 CM244 PU238 PU240
			YIELD FACTOR 0.950 0.950 0. 0.	0.950 0.950 0. 0.
0.74	120.0	0.	169.56 268.95 0. 0.	24.28 109.59 0. 0.
0.83	135.0	15.0	169.55 268.95 0.01 0.00	22.78 109.42 1.50 0.18
1.00	163.0	43.0	169.53 268.95 0.03 0.00	20.23 109.09 4.06 0.51
2.00	326.0	206.0	169.41 268.94 0.14 0.01	10.11 107.19 14.13 2.41
3.00	489.0	369.0	169.30 268.93 0.26 0.02	5.06 105.32 19.13 4.27
4.00	652.0	532.0	169.19 268.92 0.37 0.04	2.53 103.49 21.99 6.11
5.00	815.0	695.0	169.07 268.91 0.49 0.05	1.26 101.68 22.77 7.91
6.00	978.0	858.0	168.96 268.90 0.60 0.06	0.63 99.91 23.33 9.68
7.00	1141.0	1021.0	168.84 268.89 0.72 0.07	0.32 98.17 23.56 11.42

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 2001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	240.09	42002.61	27.24	11.75	310.86	136.92	89.63	36.54	0.	0.
0.83	135.0	15.0	240.09	42002.61	27.24	11.75	310.86	136.92	89.63	36.54	0.00	0.20
1.00	163.0	43.0	240.09	42002.61	27.24	11.74	310.86	136.92	89.26	36.54	0.00	0.98
2.00	326.0	206.0	240.09	42002.61	27.24	11.70	310.86	136.92	87.17	36.54	0.00	2.66
3.00	489.0	369.0	240.09	42002.61	27.24	11.66	310.86	136.92	85.12	36.54	0.00	4.71
4.00	652.0	532.0	240.09	42002.61	27.24	11.62	310.86	136.92	83.12	36.54	0.01	6.70
5.00	815.0	695.0	240.09	42002.61	27.24	11.58	310.86	136.92	81.16	36.54	0.01	8.65
6.00	978.0	858.0	240.09	42002.61	27.24	11.54	310.86	136.92	79.25	36.54	0.02	10.55
7.00	1141.0	1021.0	240.09	42002.61	27.24	11.50	310.86	136.92	77.39	36.54	0.03	12.41

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	7.69	12.20	0.	0.	1.10	4.97	0.	0.
0.83	135.0	15.0	7.69	12.20	0.00	0.0000	1.03	4.96	0.07	0.01
1.00	163.0	43.0	7.69	12.20	0.00	0.0001	0.92	4.95	0.18	0.02
2.00	326.0	206.0	7.68	12.20	0.01	0.0006	0.46	4.86	0.64	0.11
3.00	489.0	369.0	7.68	12.20	0.01	0.0011	0.23	4.78	0.87	0.19
4.00	652.0	532.0	7.67	12.20	0.02	0.0016	0.11	4.69	0.98	0.28
5.00	815.0	695.0	7.67	12.20	0.02	0.0021	0.06	4.61	1.03	0.36
6.00	978.0	858.0	7.66	12.20	0.03	0.0026	0.03	4.53	1.06	0.44
7.00	1141.0	1021.0	7.66	12.20	0.03	0.0031	0.01	4.45	1.07	0.52

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 2001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0047	0.0027	0.	0.
0.83	135.0	15.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0047	0.0027	0.0000	0.0000
1.00	163.0	43.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0047	0.0027	0.0000	0.0001
2.00	326.0	206.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0044	0.0027	0.0000	0.0003
3.00	489.0	369.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0042	0.0027	0.0000	0.0005
4.00	652.0	532.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0040	0.0027	0.0000	0.0008
5.00	815.0	695.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0037	0.0027	0.0000	0.0010
6.00	978.0	858.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0035	0.0027	0.0000	0.0012
7.00	1141.0	1021.0	0.0109	0.3197	0.0031	0.0009	0.0058	0.0051	0.0033	0.0027	0.0000	0.0014

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0004	0.0011	0.	0.	0.0001	0.0006	0.	0.
0.83	135.0	15.0	0.0004	0.0011	0.0000	0.0000	0.0001	0.0006	0.0000	0.0000
1.00	163.0	43.0	0.0004	0.0011	0.0000	0.0000	0.0001	0.0006	0.0000	0.0000
2.00	326.0	206.0	0.0004	0.0011	0.0000	0.0000	0.0001	0.0006	0.0001	0.0000
3.00	489.0	369.0	0.0004	0.0011	0.0000	0.0000	0.0000	0.0005	0.0001	0.0000
4.00	652.0	532.0	0.0004	0.0011	0.0000	0.0000	0.0000	0.0005	0.0001	0.0000
5.00	815.0	695.0	0.0004	0.0011	0.0000	0.0000	0.0000	0.0005	0.0001	0.0000
6.00	978.0	858.0	0.0004	0.0011	0.0000	0.0000	0.0000	0.0005	0.0001	0.0000
7.00	1141.0	1021.0	0.0004	0.0011	0.0000	0.0000	0.0000	0.0005	0.0001	0.0001

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/HWE-YEAR ***

CASE NUMBER 2001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	6,5827	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	6,5806	0.	0.	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	6,5767	0.	0.	0.	0.	0.	0.006
2.00	326.0	206.0	0.	0.	0.	6,5538	0.	0.	0.	0.	0.	0.029
3.00	489.0	369.0	0.	0.	0.	6,5311	0.	0.	0.	0.	0.	0.052
4.00	652.0	532.0	0.	0.	0.	6,5085	0.	0.	0.	0.	0.	0.074
5.00	815.0	695.0	0.	0.	0.	6,4859	0.	0.	0.	0.	0.	0.095
6.00	978.0	858.0	0.	0.	0.	6,4634	0.	0.	0.	0.	0.	0.116
7.00	1141.0	1021.0	0.	0.	0.	6,4410	0.	0.	0.	0.	0.	0.136

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.083	0.	0.	0.	132.17	13.919	0.	0.
0.83	135.0	15.0	0.085	0.	0.	0.	124.00	13.896	0.0381	0.
1.00	163.0	43.0	0.085	0.	0.	0.	110.08	13.854	0.1830	0.
2.00	326.0	206.0	0.085	0.	0.	0.	55.05	13.613	0.3590	0.
3.00	489.0	369.0	0.084	0.	0.	0.	27.53	13.376	0.4859	0.
4.00	652.0	532.0	0.084	0.	0.	0.	13.77	13.143	0.5483	0.
5.00	815.0	695.0	0.084	0.	0.	0.	6.88	12.914	0.5785	0.
6.00	978.0	858.0	0.084	0.	0.	0.	3.44	12.689	0.5925	0.
7.00	1141.0	1021.0	0.084	0.	0.	0.	1.72	12.468	0.5989	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 2001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.57	99.43	100.00	2.01	93.06	23.37	15.33	6.24	100.00	100.00
0.83	135.0	15.0	0.57	99.43	100.00	2.01	93.08	23.38	15.30	6.24	100.00	100.00
1.00	163.0	43.0	0.57	99.43	100.00	2.01	93.11	23.39	15.25	6.24	100.00	100.00
2.00	326.0	206.0	0.57	99.43	100.00	2.01	93.30	23.48	14.95	6.27	100.00	100.00
3.00	489.0	369.0	0.57	99.43	100.00	2.01	93.50	23.56	14.65	6.29	100.00	100.00
4.00	652.0	532.0	0.57	99.43	100.00	2.01	93.68	23.65	14.35	6.31	100.00	100.00
5.00	815.0	695.0	0.57	99.43	100.00	2.01	93.87	23.73	14.06	6.33	100.00	100.00
6.00	978.0	858.0	0.57	99.43	100.00	2.01	94.05	23.81	13.78	6.35	100.00	100.00
7.00	1141.0	1021.0	0.57	99.43	100.00	2.01	94.23	23.89	13.50	6.37	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	38.67	61.33	100.00	100.00	10.14	81.86	0.	0.
0.83	135.0	15.0	38.67	61.33	100.00	100.00	17.23	82.77	89.44	10.56
1.00	163.0	43.0	38.66	61.34	100.00	100.00	15.64	84.36	88.89	11.11
2.00	326.0	206.0	38.65	61.35	100.00	100.00	8.62	91.38	85.45	14.55
3.00	489.0	369.0	38.63	61.37	100.00	100.00	4.58	95.42	81.74	18.26
4.00	652.0	532.0	38.62	61.38	100.00	100.00	2.39	97.61	77.94	22.06
5.00	815.0	695.0	38.60	61.40	100.00	100.00	1.23	98.77	74.22	25.78
6.00	978.0	858.0	38.59	61.41	100.00	100.00	0.63	99.37	70.67	29.33
7.00	1141.0	1021.0	38.57	61.43	100.00	100.00	0.32	99.68	67.35	32.65

*** SPECIAL PRODUCT CONCENTRATIONS ***

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 2061

A = NP237

B = AM241

C = AM243

D = AM242

E = CM242

F = CM243

G = CM244

H = PU238

I = FP = 0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 630.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2002

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24678.0	INITIAL FLUX, N/SQ CM-SEC	9.89E 12	FISSILE RATIO	0.66	U235 IN TAILS/U235 ENR	0.41
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	3.67E 12	INITIAL CONV RATIO	0.59	KG NATURAL/KG PRODUCED	5.626
RESIDENCE TIME, YRS	3.38	MAX FLUX/MIN FLUX	3.33	NONFUEL X-SECT 1/CM	0.074	KG NAT U/MWE-YR	107.410
TOTAL ENRICHMENT	3.62	AVG NEUTRON TEMP, C	403.	FUEL DENSITY	9.26	AVERAGE R	0.329
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.55	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.182	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.018	REACTIVITY CHANGE/MWD, MK	0.0067

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	763	0	0	458	0	0	1158	0	1059	0
AVERAGE	0.	760	0	0	469	0	0	1142	0	1060	0
FINAL	0.	752	0	0	480	0	0	1134	0	1066	0
ABSORPTION-INITIAL	88.27	868	395	286	570	115	17.56	1808	1378	1456	558
AVERAGE	59.47	864	392	234	595	106	17.17	1782	1328	1457	558
FINAL	57.59	854	380	229	610	98	16.52	1767	1253	1466	503
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.298	0.	0.	0.185	0.	0.047	0.
AVERAGE	0.	0.000	0.	0.	0.222	0.	0.	0.199	0.	0.057	0.
FINAL	0.	0.000	0.	0.	0.156	0.	0.	0.204	0.	0.064	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.377	0.014	0.392	0.289	0.097	0.064	0.010
AVERAGE	0.000	0.000	0.000	0.000	0.282	0.016	0.380	0.310	0.101	0.078	0.013
FINAL	0.000	0.000	0.000	0.000	0.199	0.017	0.362	0.317	0.104	0.088	0.015
ALPHA	0.	0.138	0.	0.	0.264	0.	0.	0.561	0.	0.375	0.
AVERAGE	0.	0.137	0.	0.	0.268	0.	0.	0.560	0.	0.375	0.
FINAL	0.	0.136	0.	0.	0.271	0.	0.	0.558	0.	0.375	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	41.3	0.	10.4	37.5	0.	10.8	0.
ETA	0.	2.20	0.	0.	1.92	0.	0.	1.85	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.98	0.	1.45	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.454	0.	0.132	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2002

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.75	0.	0.	0.69	0.	0.19	0.
FINAL	0.	0.00	0.	0.	1.37	0.	0.	0.77	0.	0.26	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	2.8	0.5	96.6	54.6	24.0	15.1	6.3
FINAL	100.0	0.0	100.0	0.0	1.5	0.8	97.8	51.0	23.5	17.0	8.5
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.2542	0.0490	8.8316	0.0634	0.0288	0.0177	0.0875
FINAL	0.0000	0.0000	0.0000	0.0001	0.1270	0.0686	8.6578	0.0713	0.0329	0.0240	0.0120
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	2.4	4062.7	626.1	5556.8	251.1	158.6	200.6	146.4
GM/MWE-YR	0.0	0.0	0.0	0.4	609.4	93.9	833.5	37.7	23.8	30.1	22.0
GM/MMW	0.0000	0.0000	0.0000	0.0000	-0.0696	0.0107	-0.0952	0.0043	0.0027	0.0034	0.0025
GM/TON	0.0	0.0	0.0	8.0	13734.1	2116.7	19785.1	848.9	936.0	678.3	494.9
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	2.4	4060.2	2191.5	27670.1	2277.7	1052.2	767.0	384.7
GM/MWE-YR	0.	0.0	0.0	0.4	609.0	328.7	4150.6	342.	158.	115.	58.
GM/TON	0.	0.0	0.0	8.0	13725.7	7408.5	93541.0	7699.9	3557.0	2593.0	1300.6

GRADED BURNUP		NEUTRON BALANCE				CASE NO. 2002	
PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR							
EXPOSURE, MWD/TON	24678.0	INITIAL ENRICH.	3.62	POWER DENS, MW/T	277.02	AV. NEUTRON TEMPERATURE, °C	403.
RESIDENCE TIME, YRS.	3.38	AVERAGE R	0.329	KW/GRAMS FISSILE	0.95	AVERAGE FLUX, NEUT/SQ CM=SEC	3.67E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED		FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233		-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235		99.40	80.71	62.99				
FROM PU-239		73.09	85.57	97.30				
FROM PU-241		19.45	25.72	32.08				
TOTAL		191.93	192.00	192.37				
NET FROM U-233		13.56	13.50	13.44	TOTAL	-0.	0.00	0.00
NET FROM U-235		0.	0.	0.		0.	0.00	0.01
TOTAL		205.48	205.50	205.81		47.12	51.19	45.80
						11.61	13.58	13.10
						58.73	64.78	58.90
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION					NON-FERTILE CAPTURE			
IN U-233		-0.	0.00	0.00	IN U-236			
IN U-235		40.84	33.17	25.88	IN PU-242			
IN PU-239		25.33	29.66	33.73	IN SPECIAL PRODUCTS			
IN PU-241		6.42	8.49	10.59	TOTAL			
TOTAL		72.59	71.32	70.19				
AS CAPTURE FORMING FERTILE ISOTOPES					NON-FUEL ABSORPTION + LEAKAGE			
IN U-233		-0.	0.00	0.00	IN SM + XE			
IN PU-239		14.22	16.61	18.83	IN OTHER F.P.			
TOTAL		14.22	16.61	18.83	IN STRUCT. + MOD. + IMPUR.			
					CONTROL + LEAKAGE			
					TOTAL			
AS CAPTURE FORMING NON-FERTILE ISOTOPES					NEUTRONS INTO OR FROM OTHER FUEL			
IN U-235		10.79	8.89	7.01	IN PA-233 NON-FERTILE CAPTURE			
IN PU-241		2.41	3.18	3.97	IN NP-239 NON-FERTILE CAPTURE			
TOTAL		13.20	12.08	10.98	TOTAL ABSORPTION + LEAKAGE			
TOTAL FISSION ABSORPTION		100.00	100.00	100.00	FERTILE CAPTURE - (PA-233 + NP-239 NON-FERTILE CAPTURE)			

EXPOSURE 5000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***							CASE NUMBER 2002	
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP +0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION	ABSORPTION=INITIAL	279	1489	678	6890	17	1206	13	377	0
	AVERAGE	278	1587	677	6898	17	1207	13	377	0
	FINAL	277	1684	676	6909	17	1210	13	378	0
MACROSCOPIC CROSS SECTION	ABSORPTION=INITIAL	-0.	0.009	0.004	-0.	-0.	-0.	-0.	0.002	-0.
	AVERAGE	0.000	0.009	0.005	0.000	0.000	0.000	0.000	0.002	0.
	FINAL	0.001	0.009	0.005	0.001	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC	INITIAL	-0.	2.1511	2.4893	-0.	-0.	-0.	-0.	2.5262	0.
	FINAL	1.4343	2.0679	3.0239	0.0318	0.3605	0.0007	0.4016	2.5705	-0.
PERCENT OF ELEMENT COMPOSITION	INITIAL	-0.	46.7	53.3	-0.	-0.	-0.	-0.	100.0	0.
	FINAL	100.0	40.6	58.8	0.6	47.5	0.1	52.4	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0002	0.0000	0.0000	0.0433	0.0000	0.0011	0.0014	0.
NET ISOTOPIC PRODUCTION										
	GM/TON-YR	226.2	-14.7	84.3	5.0	56.9	0.1	63.3	7.0	-0.
	GM/MWE-YR	33.94	-2.21	12.65	0.75	8.53	0.02	9.50	1.05	-0.
	GM/MWH	0.0039	-0.0003	0.0014	0.0001	0.0010	0.0000	0.0011	0.0001	-0.
	WATTS/MWE-YR	0.	-0.2	0.1	0.0	1023.6	0.0	26.6	4.6	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	279	1689	678	6890	17	1206	13	377	0
AVERAGE	277	1683	675	6908	17	1209	13	377	0
FINAL	275	1673	669	6928	17	1213	13	379	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.009	0.004	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.009	0.005	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.002	0.009	0.006	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	2.1611	2.4893	-0.	-0.	-0.	-0.	2.5262	0.
FINAL	2.8992	2.0331	3.5919	0.0379	0.4866	0.0020	0.8872	2.9075	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	46.7	53.3	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	36.1	63.2	0.7	35.6	0.1	64.3	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0584	0.0000	0.0025	0.0016	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	228.7	-10.1	87.0	3.0	38.4	0.2	70.0	30.1	-0.
GM/MWE-YR	34.30	-1.51	13.04	0.45	5.76	0.02	10.50	4.51	-0.
GM/MWH	0.0039	-0.0002	0.0015	0.0001	0.0007	0.0000	0.0012	0.0005	-0.
GM/TON	313.2	-13.8	119.1	4.1	52.6	0.2	95.9	41.2	-0.
WATTS/MWE-YR	0.	-0.2	0.1	0.0	690.8	0.0	29.4	2.5	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	279	1689	678	6890	17	1206	13	377	0
AVERAGE	276	1678	671	6917	17	1211	13	378	0
FINAL	273	1660	658	6947	17	1216	13	380	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.009	0.004	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.001	0.009	0.005	0.001	0.000	0.000	0.000	0.003	0.
FINAL	0.003	0.008	0.007	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	2.1611	2.4893	-0.	-0.	-0.	-0.	2.5262	0.
FINAL	4.3756	2.0279	4.1919	0.0386	0.5400	0.0033	1.4625	3.3770	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	46.7	53.3	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	32.6	66.8	0.6	27.1	0.2	72.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0648	0.0000	0.0041	0.0019	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	230.1	-7.0	89.5	2.0	29.4	0.2	76.9	44.7	-0.
GM/MWE-YR	34.51	-1.05	13.43	0.30	4.26	0.03	11.53	6.71	-0.
GM/MWH	0.0039	-0.0001	0.0015	0.0000	0.0005	0.0000	0.0013	0.0008	-0.
GM/TON	472.8	-14.4	184.0	4.2	58.3	0.4	158.0	91.9	-0.
WATTS/MWE-YR	0.	-0.1	0.1	0.0	511.1	0.0	32.3	3.8	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	279	1689	678	6890	17	1206	13	377	0
AVERAGE	275	1671	667	6927	17	1212	13	378	0
FINAL	270	1644	645	6967	17	1220	13	382	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	0.009	0.004	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.002	0.009	0.006	0.001	0.000	0.000	0.000	0.003	0.
FINAL	0.004	0.008	0.008	0.001	0.000	0.000	0.000	0.004	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	2.1611	2.4893	-0.	-0.	-0.	-0.	2.5262	0.
FINAL	5.8512	2.0327	4.8253	0.0384	0.5726	0.0045	2.1354	3.9282	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	46.7	53.3	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	29.6	69.8	0.6	21.2	0.2	78.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0687	0.0000	0.0060	0.0022	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	230.7	-5.1	92.1	1.5	22.6	0.2	84.2	55.3	-0.
GM/MHE-YR	34.61	-0.76	13.82	0.23	3.39	0.03	12.63	8.29	-0.
GM/MWH	0.0040	-0.0001	0.0016	0.0000	0.0004	0.0000	0.0014	0.0009	-0.
GM/TON	632.2	-13.9	252.4	4.2	61.9	0.5	230.7	191.5	-0.
WATTS/MHE-YR	0.	-0.1	0.1	0.0	406.4	0.0	35.4	4.6	0.

EXPOSURE 24678.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	279	1689	678	6890	17	1206	13	377	0
AVERAGE	273	1665	661	6936	17	1214	13	379	0
FINAL	268	1628	632	6984	17	1223	13	383	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	0.009	0.004	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.002	0.009	0.006	0.001	0.000	0.000	0.000	0.003	0.
FINAL	0.005	0.008	0.009	0.001	0.000	0.000	0.000	0.004	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	2.1611	2.4893	-0.	-0.	-0.	-0.	2.5262	0.
FINAL	7.2206	2.0351	5.4466	0.0381	0.5979	0.0054	2.8601	4.5008	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	46.7	53.3	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	27.2	72.3	0.5	17.4	0.2	82.5	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0717	0.0000	0.0080	0.0025	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	230.8	-4.0	94.5	1.2	19.1	0.2	91.4	63.1	-0.
GM/MHE-YR	34.62	-0.60	14.18	0.18	2.87	0.03	13.71	9.47	-0.
GM/MWH	0.0040	-0.0001	0.0016	0.0000	0.0003	0.0000	0.0016	0.0011	-0.
GM/TON	780.1	-13.6	319.5	4.1	64.6	0.6	309.0	213.3	-0.
WATTS/MHE-YR	0.	-0.1	0.1	0.0	343.9	0.0	38.4	5.3	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 2002

EXPOSURE 24678.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.38 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	7408.54	780.13	486.28	7699.9	3557.0	2593.0	1300.6	219.88	588.47	64.60	359.01
0.09	15.0	7408.54	780.14	490.11	7699.9	3557.5	2587.4	1300.6	225.53	588.47	60.60	308.31
0.18	30.0	7408.54	780.16	493.70	7699.9	3558.0	2581.7	1300.6	231.18	588.46	56.86	308.02
0.28	45.0	7408.54	780.17	497.05	7699.9	3558.5	2576.0	1300.6	236.81	588.46	53.35	307.52
0.37	60.0	7408.54	780.19	500.19	7699.9	3559.0	2570.4	1300.6	242.43	588.46	50.05	307.02
0.55	90.0	7408.54	780.22	505.86	7699.9	3559.9	2559.2	1300.6	253.62	588.45	44.06	306.03
0.74	120.0	7408.54	780.25	510.81	7699.9	3560.9	2548.0	1300.6	264.77	588.45	38.78	305.04
0.92	150.0	7408.54	780.28	515.13	7700.0	3561.9	2536.9	1300.6	275.87	588.45	34.14	304.06
1.10	180.0	7408.54	780.32	518.88	7700.0	3562.9	2525.8	1300.6	286.92	588.44	30.05	303.07
2.21	360.0	7408.54	780.56	532.93	7700.0	3568.7	2460.3	1300.6	352.17	588.42	13.98	297.25
4.41	720.0	7408.54	781.18	539.76	7700.0	3580.0	2334.4	1300.6	477.48	588.36	3.03	285.94
6.13	1000.0	7408.54	781.79	538.65	7700.1	3588.5	2240.9	1300.6	570.35	588.32	0.92	277.43

*** GM/MWE-YEAR ***

0.	0.	329.282	34.674	21.613	342.23	158.09	115.25	57.81	9.773	26.155	2.871	13.735
0.09	15.0	329.282	34.675	21.784	342.23	158.12	115.00	57.81	10.024	26.155	2.694	13.712
0.18	30.0	329.282	34.675	21.943	342.23	158.14	114.75	57.81	10.275	26.155	2.527	13.690
0.28	45.0	329.282	34.676	22.092	342.23	158.16	114.50	57.81	10.525	26.155	2.371	13.668
0.37	60.0	329.282	34.676	22.232	342.23	158.18	114.25	57.81	10.775	26.155	2.225	13.646
0.55	90.0	329.282	34.678	22.484	342.23	158.23	113.75	57.81	11.273	26.155	1.998	13.602
0.74	120.0	329.282	34.679	22.704	342.23	158.27	113.25	57.81	11.768	26.154	1.724	13.558
0.92	150.0	329.282	34.681	22.896	342.23	158.31	112.75	57.81	12.261	26.154	1.517	13.514
1.10	180.0	329.282	34.682	23.063	342.23	158.36	112.26	57.81	12.753	26.154	1.336	13.471
2.21	360.0	329.282	34.693	23.687	342.24	158.62	109.35	57.81	15.653	26.153	0.621	13.212
4.41	720.0	329.282	34.720	23.990	342.24	159.12	103.75	57.81	21.222	26.151	0.134	12.709
6.13	1000.0	329.282	34.747	23.941	342.24	159.50	99.60	57.81	25.350	26.149	0.041	12.331

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 2002

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.0107	0.0040	0.0011	0.0043	0.0027	0.0034	0.0025	0.0001	0.0016	0.0003	0.0016
0.09	15.0	0.0107	0.0040	0.0011	0.0043	0.0027	0.0034	0.0025	0.0000	0.0016	0.0003	0.0016
0.18	30.0	0.0107	0.0040	0.0011	0.0043	0.0027	0.0034	0.0025	0.0000	0.0016	0.0003	0.0016
0.28	45.0	0.0107	0.0040	0.0011	0.0043	0.0027	0.0034	0.0025	0.0000	0.0016	0.0003	0.0016
0.37	60.0	0.0107	0.0040	0.0012	0.0043	0.0027	0.0033	0.0025	0.0000	0.0016	0.0003	0.0016
0.55	90.0	0.0107	0.0040	0.0012	0.0043	0.0027	0.0033	0.0025	0.0001	0.0016	0.0002	0.0016
0.74	120.0	0.0107	0.0040	0.0012	0.0043	0.0027	0.0032	0.0025	0.0002	0.0016	0.0002	0.0015
0.92	150.0	0.0107	0.0040	0.0012	0.0043	0.0027	0.0032	0.0025	0.0002	0.0016	0.0002	0.0015
1.10	180.0	0.0107	0.0040	0.0012	0.0043	0.0027	0.0031	0.0025	0.0003	0.0016	0.0002	0.0015
2.21	360.0	0.0107	0.0040	0.0013	0.0043	0.0028	0.0028	0.0025	0.0006	0.0016	0.0001	0.0015
4.41	720.0	0.0107	0.0040	0.0014	0.0043	0.0028	0.0021	0.0025	0.0012	0.0016	0.0000	0.0014
6.13	1000.0	0.0107	0.0040	0.0013	0.0043	0.0029	0.0017	0.0025	0.0017	0.0016	0.0000	0.0014

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	12.1034	0.	0.	0.	0.	0.107	0.	344.52	38.457
0.09	15.0	0.	0.	12.1988	0.	0.	0.	0.	0.110	0.	323.24	38.394
0.18	30.0	0.	0.	12.2881	0.	0.	0.	0.	0.113	0.	303.27	38.332
0.28	45.0	0.	0.	12.3716	0.	0.	0.	0.	0.116	0.	284.53	38.271
0.37	60.0	0.	0.	12.4497	0.	0.	0.	0.	0.119	0.	266.95	38.209
0.55	90.0	0.	0.	12.5202	0.	0.	0.	0.	0.124	0.	239.99	38.085
0.74	120.0	0.	0.	12.7141	0.	0.	0.	0.	0.129	0.	206.85	37.982
0.92	150.0	0.	0.	12.8215	0.	0.	0.	0.	0.135	0.	182.08	37.840
1.10	180.0	0.	0.	12.9150	0.	0.	0.	0.	0.140	0.	160.27	37.718
2.21	360.0	0.	0.	13.2647	0.	0.	0.	0.	0.172	0.	74.56	36.993
4.41	720.0	0.	0.	13.4346	0.	0.	0.	0.	0.233	0.	16.14	35.585
6.13	1000.0	0.	0.	13.4069	0.	0.	0.	0.	0.279	0.	4.91	34.527

GRADED FINAL K 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 2002

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45
YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.77	100.00	3.11	49.24	22.75	16.58	8.32	27.20	72.80	17.29	82.71
0.09	15.0	0.77	100.00	3.13	49.25	22.75	16.59	8.32	27.21	72.29	16.42	83.58
0.18	30.0	0.77	100.00	3.16	49.25	22.76	16.51	8.32	28.20	71.80	15.98	84.02
0.28	45.0	0.77	100.00	3.18	49.26	22.76	16.48	8.32	28.69	71.31	14.78	85.22
0.37	60.0	0.77	100.00	3.20	49.26	22.77	16.45	8.32	29.18	70.82	14.02	85.98
0.55	90.0	0.77	100.00	3.24	49.28	22.78	16.38	8.32	30.12	69.88	12.58	87.42
0.74	120.0	0.77	100.00	3.27	49.29	22.80	16.31	8.33	31.03	68.97	11.28	88.72
0.92	150.0	0.77	100.00	3.30	49.31	22.81	16.25	8.33	31.92	68.08	10.09	89.91
1.10	180.0	0.77	100.00	3.32	49.33	22.83	16.18	8.33	32.78	67.22	9.02	90.98
2.21	360.0	0.77	100.00	3.42	49.48	22.93	15.81	8.36	37.44	62.56	4.49	95.51
4.41	720.0	0.77	100.00	3.49	49.82	23.16	15.10	8.42	44.80	55.20	1.05	98.95
6.13	1000.0	0.77	100.00	3.50	50.10	23.35	14.50	8.46	49.22	50.78	0.33	99.67

GRADED FINAL K 1.083

*** AFTER SEPARATION ***

CASE NUMBER 2002

*** G4/TON ***

EXPOSURE 24678.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.38 YRS.

LOAD FACTOR 0.33

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVESTIME AFTER
SEPARATION
DAYSURANIUM
..RECOVERED..
U236 OTHER UNEPTUNIUM
RECOVERED
NP237PLUTONIUM
.....RECOVERED.....
PU238 PU239 PU240 PU241 PU242 NP237 AM241YIELD
FACTOR

0.970

0.970

0.950

0.970

0.970

0.970

0.970

0.970

0.970

0.970

0.970

0.74	120.0	0.	7186.28	920670.4	741.24	495.49	7468.9	3454.1	2471.6	1261.6	0.	0.
0.83	135.0	15.0	7186.28	920670.4	741.24	495.33	7468.9	3454.1	2466.2	1261.6	0.00	5.40
1.00	163.0	43.0	7186.28	920670.4	741.24	495.03	7468.9	3454.1	2456.1	1261.6	0.00	15.46
2.00	326.0	206.0	7186.28	920670.4	741.24	493.32	7468.9	3454.1	2398.4	1261.6	0.03	73.17
3.00	489.0	369.0	7186.28	920670.4	741.24	491.60	7468.9	3454.1	2342.0	1261.6	0.10	129.49
4.00	652.0	532.0	7186.28	920670.4	741.24	489.90	7468.9	3454.1	2286.9	1261.6	0.21	184.44
5.00	815.0	695.0	7186.28	920670.4	741.24	488.20	7468.9	3454.1	2233.2	1261.6	0.35	238.06
6.00	978.0	858.0	7186.28	920670.4	741.24	486.51	7468.9	3454.1	2180.7	1261.6	0.53	290.38
7.00	1141.0	1021.0	7186.28	920670.4	741.24	484.82	7468.9	3454.1	2129.4	1261.6	0.74	341.43

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVESTIME AFTER
SEPARATION
DAYSAMERICIUM
.....RECOVERED.....
AM241 AM243 NP237 PU239CURIUM
.....RECOVERED.....
CM242 CM244 PU238 PU240YIELD
FACTOR

0.950

0.950

0.

0.

0.950

0.950

0.

0.

0.

0.

0.74	120.0	0.	251.53	559.03	0.	0.	36.84	289.79	0.	0.
0.83	135.0	15.0	251.52	559.03	0.02	0.00	34.57	289.32	2.28	0.47
1.00	163.0	43.0	251.49	559.02	0.04	0.01	30.69	288.45	6.15	1.34
2.00	326.0	206.0	251.32	559.00	0.21	0.03	15.35	283.42	21.44	6.36
3.00	489.0	369.0	251.15	558.98	0.38	0.05	7.67	278.49	29.03	11.30
4.00	652.0	532.0	250.98	558.95	0.55	0.07	3.84	273.64	32.75	16.15
5.00	815.0	695.0	250.81	558.93	0.72	0.10	1.92	268.87	34.56	20.92
6.00	978.0	858.0	250.64	558.91	0.89	0.12	0.96	264.19	35.39	25.60
7.00	1141.0	1021.0	250.47	558.89	1.06	0.14	0.48	259.59	35.75	30.20

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 2002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	319.40	40920.43	32.95	22.02	331.97	153.52	109.85	56.07	0.	0.
0.83	135.0	15.0	319.40	40920.43	32.95	22.02	331.97	153.52	109.61	56.07	0.00	0.24
1.00	163.0	43.0	319.40	40920.43	32.95	22.00	331.97	153.52	109.16	56.07	0.00	0.69
2.00	326.0	206.0	319.40	40920.43	32.95	21.93	331.97	153.52	106.60	56.07	0.00	3.25
3.00	489.0	369.0	319.40	40920.43	32.95	21.85	331.97	153.52	104.09	56.07	0.00	5.76
4.00	652.0	532.0	319.40	40920.43	32.95	21.77	331.97	153.52	101.65	56.07	0.01	8.20
5.00	815.0	695.0	319.40	40920.43	32.95	21.70	331.97	153.52	99.26	56.07	0.02	10.58
6.00	978.0	858.0	319.40	40920.43	32.95	21.62	331.97	153.52	96.92	56.07	0.02	12.91
7.00	1141.0	1021.0	319.40	40920.43	32.95	21.55	331.97	153.52	94.64	56.07	0.03	15.18

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURTIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PL240
0.74	120.0	0.	11.18	24.85	0.	0.	1.64	12.88	0.	0.
0.83	135.0	15.0	11.18	24.85	0.00	0.0001	1.54	12.86	0.10	0.02
1.00	163.0	43.0	11.18	24.85	0.00	0.0003	1.36	12.82	0.27	0.06
2.00	326.0	206.0	11.17	24.85	0.01	0.0013	0.68	12.60	0.95	0.28
3.00	489.0	369.0	11.16	24.84	0.02	0.0023	0.34	12.38	1.29	0.50
4.00	652.0	532.0	11.16	24.84	0.02	0.0033	0.17	12.16	1.46	0.72
5.00	815.0	695.0	11.15	24.84	0.03	0.0043	0.09	11.95	1.54	0.93
6.00	978.0	858.0	11.14	24.84	0.04	0.0053	0.04	11.74	1.97	1.14
7.00	1141.0	1021.0	11.13	24.84	0.05	0.0063	0.02	11.54	1.59	1.34

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 2002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0028	0.0023	0.	0.
0.83	135.0	15.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0028	0.0023	0.0000	0.0000
1.00	163.0	43.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0027	0.0023	0.0000	0.0001
2.00	326.0	206.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0025	0.0023	0.0000	0.0004
3.00	489.0	369.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0022	0.0023	0.0000	0.0007
4.00	652.0	532.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0019	0.0023	0.0000	0.0009
5.00	815.0	695.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0014	0.0023	0.0000	0.0012
6.00	978.0	858.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0013	0.0023	0.0000	0.0015
7.00	1141.0	1021.0	0.0096	=0.3092	0.0038	0.0011	0.0031	0.0022	0.0011	0.0023	0.0000	0.0017

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURTIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0001	0.0015	0.	0.	0.0002	0.0015	0.	0.
0.83	135.0	15.0	0.0001	0.0015	0.0000	0.0000	0.0002	0.0015	0.0000	0.0000
1.00	163.0	43.0	0.0001	0.0015	0.0000	0.0000	0.0002	0.0015	0.0000	0.0000
2.00	326.0	206.0	0.0001	0.0015	0.0000	0.0000	0.0001	0.0014	0.0001	0.0000
3.00	489.0	369.0	0.0001	0.0015	0.0000	0.0000	0.0000	0.0014	0.0001	0.0001
4.00	652.0	532.0	0.0001	0.0015	0.0000	0.0000	0.0000	0.0014	0.0002	0.0001
5.00	815.0	695.0	0.0001	0.0015	0.0000	0.0000	0.0000	0.0014	0.0002	0.0001
6.00	978.0	858.0	0.0001	0.0015	0.0000	0.0000	0.0000	0.0013	0.0002	0.0001
7.00	1141.0	1021.0	0.0001	0.0015	0.0000	0.0000	0.0000	0.0013	0.0002	0.0002

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 2002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	12,3327	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	12,3287	0.	0.	0.	0.	0.	0.003
1.00	163.0	43.0	0.	0.	0.	12,3214	0.	0.	0.	0.	0.	0.008
2.00	326.0	206.0	0.	0.	0.	12,2786	0.	0.	0.	0.	0.	0.036
3.00	489.0	369.0	0.	0.	0.	12,2360	0.	0.	0.	0.	0.	0.063
4.00	652.0	532.0	0.	0.	0.	12,1936	0.	0.	0.	0.	0.	0.090
5.00	815.0	695.0	0.	0.	0.	12,1513	0.	0.	0.	0.	0.	0.116
6.00	978.0	858.0	0.	0.	0.	12,1091	0.	0.	0.	0.	0.	0.142
7.00	1141.0	1021.0	0.	0.	0.	12,0671	0.	0.	0.	0.	0.	0.167

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.123	0.	0.	0.	196.50	36.064	0.	0.
0.83	135.0	15.0	0.123	0.	0.	0.	184.36	36.006	0.0566	0.
1.00	163.0	43.0	0.123	0.	0.	0.	163.67	35.897	0.1531	0.
2.00	326.0	206.0	0.123	0.	0.	0.	81.85	35.272	0.5337	0.
3.00	489.0	369.0	0.123	0.	0.	0.	40.93	34.658	0.7224	0.
4.00	652.0	532.0	0.123	0.	0.	0.	20.47	34.054	0.8152	0.
5.00	815.0	695.0	0.123	0.	0.	0.	10.24	33.461	0.8601	0.
6.00	978.0	858.0	0.123	0.	0.	0.	5.12	32.878	0.8809	0.
7.00	1141.0	1021.0	0.122	0.	0.	0.	2.56	32.305	0.8898	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 2002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.77	99.23	100.00	3.27	49.29	22.80	16.31	8.33	100.00	100.00
0.83	135.0	15.0	0.77	99.23	100.00	3.27	49.31	22.81	16.28	8.33	100.00	100.00
1.00	163.0	43.0	0.77	99.23	100.00	3.27	49.35	22.82	16.23	8.34	100.00	100.00
2.00	326.0	206.0	0.77	99.23	100.00	3.27	49.54	22.91	15.91	8.37	100.00	100.00
3.00	489.0	369.0	0.77	99.23	100.00	3.27	49.73	23.00	15.59	8.40	100.00	100.00
4.00	652.0	532.0	0.77	99.23	100.00	3.27	49.92	23.09	15.29	8.43	100.00	100.00
5.00	815.0	695.0	0.77	99.23	100.00	3.28	50.11	23.17	14.98	8.46	100.00	100.00
6.00	978.0	858.0	0.77	99.23	100.00	3.28	50.29	23.26	14.68	8.49	100.00	100.00
7.00	1141.0	1021.0	0.77	99.23	100.00	3.28	50.47	23.34	14.39	8.52	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	31.03	69.97	100.00	100.00	11.28	88.72	0.	0.
0.83	135.0	15.0	31.03	68.97	100.00	100.00	10.67	89.33	82.94	17.06
1.00	163.0	43.0	31.03	68.97	100.00	100.00	9.62	90.38	82.11	17.89
2.00	326.0	206.0	31.01	68.99	100.00	100.00	5.14	94.86	77.11	22.89
3.00	489.0	369.0	31.00	69.00	100.00	100.00	2.68	97.32	71.98	28.02
4.00	652.0	532.0	30.99	69.01	100.00	100.00	1.38	98.62	66.97	33.03
5.00	815.0	695.0	30.97	69.03	100.00	100.00	0.71	99.29	62.29	37.71
6.00	978.0	858.0	30.96	69.04	100.00	100.00	0.36	99.64	58.03	41.97
7.00	1141.0	1021.0	30.95	69.05	100.00	100.00	0.18	99.82	54.20	45.80

*** SPECIAL PRODUCT CONCENTRATIONS ***

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 2002

A = VP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP = 0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 780.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2003

PU, AM AND U-234 RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24391.0	INITIAL FLUX, N/SQ CM-SEC	9.21E-12	FISSILE RATIO	0.68	U235 IN TAILS/U235 ENR	0.42				
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	2.53E-12	INITIAL CONV RATIO	0.58	KG NATURAL/KG PRODUCED	5.971				
RESIDENCE TIME, YRS	3.34	MAX FLUX/MIN FLUX	4.47	NONFUEL X-SECT 1/CM	0.075	KG NAT U/MWE-YR	110.149				
TOTAL ENRICHMENT	3.87	AVG NEUTRON TEMP, C	409.	FUEL DENSITY	9.26	AVERAGE-R	0.345				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
MW/GRAMS FISSILE	0.92	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AFC LOSSES)	0.				
INITIAL REACTIVITY	1.176	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	1.022	REACTIVITY CHANGE/MWD, MK	0.0063				
ISOTOPES	PH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	778	0	0	454	0	0.	1147	0	1042	0
AVERAGE	0.	773	0	0	444	0	0.	1138	0	1049	0
FINAL	0.	769	0	0	476	0	0.	1130	0	1033	0
ABSORPTION-INITIAL	63.33	885	418	246	576	110	18.54	1791	1372	1430	561
AVERAGE	62.38	880	412	243	591	103	18.10	1771	1340	1436	542
FINAL	60.36	870	399	237	606	96	17.41	1760	1280	1447	513
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.000	0.	0.	0.311	0.	0.	0.200	0.	0.028	0.
AVERAGE	0.	0.000	0.	0.	0.237	0.	0.	0.210	0.	0.065	0.
FINAL	0.	0.000	0.	0.	0.173	0.	0.	0.214	0.	0.070	0.
ABSORPTION-INITIAL	0.	0.000	0.	0.	0.394	0.019	0.412	0.312	0.110	0.079	0.016
AVERAGE	0.000	0.000	0.000	0.000	0.302	0.020	0.398	0.328	0.112	0.089	0.018
FINAL	0.000	0.000	0.000	0.000	0.220	0.021	0.379	0.334	0.112	0.097	0.019
ALPHA	INITIAL	0.	0.138	0.	0.	0.269	0.	0.	0.561	0.	0.372
AVERAGE	0.	0.138	0.	0.	0.272	0.	0.	0.560	0.	0.373	0.
FINAL	0.	0.137	0.	0.	0.273	0.	0.	0.558	0.	0.374	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	41.2	0.	10.4	36.9	0.	11.5	0.
ETA	0.	2.20	0.	0.	1.91	0.	0.	1.85	0.	2.21	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.99	0.	1.50	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.441	0.	0.140	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 2003

ISOTOPES	U232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	2.89	0.	0.	0.75	0.	0.24	0.
FINAL	0.	0.00	0.	0.	1.53	0.	0.	0.81	0.	0.29	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	3.0	0.7	96.3	21.4	23.7	16.3	8.6
FINAL	100.0	0.0	100.0	0.0	1.6	1.0	97.4	49.7	23.0	17.5	9.9
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.2671	0.0665	8.7763	0.0691	0.0320	0.0221	0.0117
FINAL	0.0000	0.0000	0.0000	0.0001	0.1419	0.0849	8.6104	0.0752	0.0349	0.0267	0.0152
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	3.9	-4049.9	596.8	-5366.6	197.6	93.5	149.3	112.5
GM/MWE-YR	0.0	0.0	0.0	0.6	-607.5	89.5	-805.0	29.6	14.0	22.4	16.9
GM/MWH	0.0000	0.0000	0.0000	0.0001	-0.0693	0.0102	-0.0919	0.0034	0.0016	0.0026	0.0019
GM/TON	0.0	0.0	0.0	13.2	-13531.8	1994.0	-17931.2	660.2	312.6	498.9	375.9
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.	0.	3.9	4987.4	2746.9	278424.	2432.8	1129.4	864.6	490.1
GM/MWE-YR	0.	0.	0.	0.6	688.1	412.0	41764.	365.	169.	130.	74.
GM/TON	0.	0.0	0.0	13.2	15327.6	9178.1	930287.	8128.7	3773.5	2888.7	1637.5

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 2003

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24391.0 INITIAL ENRICH. 3.87 POWER DENS. MW/T 345.09 AV. NEUTRON TEMPERATURE, C 409.
 RESIDENCE TIME, YRS 3.34 AVERAGE R 0.345 KW/GRAMS FISSILE 0.52 AVERAGE FLUX, NEUT/SD CM-SEC 2.53E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	96.32	80.27	64.74				
FROM PU-239	73.40	84.35	94.99				
FROM PU-241	22.22	27.42	32.76				
TOTAL	191.95	192.04	192.49				
NET FROM U-238	13.55	13.51	13.46				
NET FROM U-238	0.	0.	0.				
TOTAL	205.50	205.55	205.95				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	39.57	32.98	26.60				
IN PU-239	25.44	29.24	32.92				
IN PU-241	7.33	9.05	10.81				
TOTAL	72.35	71.27	70.33				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	14.28	16.38	18.36				
TOTAL	14.28	16.38	18.36				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	10.63	8.98	7.26				
IN PU-241	2.73	3.38	4.05				
TOTAL	13.37	12.35	11.31				
TOTAL FISSILE ABSORPTION	100.00	100.00	100.00				
				NON-FERTILE CAPTURE			
				IN U-236	2.08	2.52	2.43
				IN PU-242	1.82	2.24	2.26
				IN SPECIAL PRODUCTS	2.97	3.99	4.27
				TOTAL	6.88	8.71	8.97
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	3.52	3.94	3.69
				IN OTHER F.P.	0.	8.01	10.43
				IN STRUCT. + MOD. + IMPUR.	4.86	5.44	5.10
				CONTROL + LEAKAGE	15.75	15.75	15.78
				TOTAL	24.14	33.15	35.01
				NEUTRONS INTO OR FROM OTHER FUEL	16.25	0.	4.47
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	205.50	205.55	205.95
				FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	58.24	63.68	57.50

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	285	1724	697	6851	17	1199	13	373	0
AVERAGE	283	1722	696	6859	17	1200	13	373	0
FINAL	283	1719	694	6871	17	1203	13	374	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.013	0.009	-0.	-0.	-0.	-0.	0.005	-0.
AVERAGE	0.001	0.013	0.009	0.000	0.000	0.000	0.000	0.004	0.
FINAL	0.001	0.012	0.010	0.001	0.000	0.000	0.000	0.004	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	3.0666	5.1763	-0.	-0.	-0.	-0.	4.7774	0.
FINAL	1.6617	2.8666	5.7492	0.0441	0.4797	0.0009	0.7616	4.7379	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	37.4	62.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	33.3	66.2	0.5	38.8	0.1	61.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0576	0.0000	0.0021	0.0027	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	262.1	-31.6	-90.4	7.0	-79.7	0.1	-120.1	-6.2	-0.
GM/MWE-YR	39.32	-4.73	-13.56	1.04	-11.35	0.02	-18.02	-0.93	-0.
GM/MWH	0.0049	-0.0005	-0.0015	0.0001	-0.0013	0.0000	-0.0021	-0.0001	-0.
GM/TON	179.5	-21.6	-61.9	4.8	-51.8	0.1	-82.3	-4.3	-0.
WATTS/MWE-YR	0.	-0.5	-0.1	0.0	1362.2	0.0	-50.5	-0.5	0.

*** PROPERTIES OF SPECIAL PRODUCTS ***									
CASE NUMBER 2003									
EXPOSURE 10000.0 MWD/T									
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	285	1724	697	6851	17	1199	13	373	0
AVERAGE	282	1718	693	6869	17	1202	13	373	0
FINAL	280	1709	686	6891	17	1206	13	375	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.013	0.009	-0.	-0.	-0.	-0.	0.005	-0.
AVERAGE	0.001	0.012	0.010	0.001	0.000	0.000	0.000	0.005	0.
FINAL	0.002	0.012	0.011	0.001	0.000	0.000	0.000	0.005	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	3.0666	5.1763	-0.	-0.	-0.	-0.	4.7774	0.
FINAL	3.3364	2.7377	6.3302	0.0526	0.6348	0.0025	1.6067	5.0698	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	37.4	62.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	30.2	69.2	0.6	28.5	0.1	71.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0762	0.0000	0.0045	0.0028	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	263.1	-25.9	91.0	4.2	50.1	0.2	126.7	23.1	-0.
GM/MWE-YR	39.47	-3.89	13.65	0.62	7.51	0.03	19.01	3.46	-0.
GM/MMH	0.0045	-0.0004	0.0016	0.0001	0.0009	0.0000	0.0022	0.0004	-0.
GM/TON	360.5	-35.5	124.7	5.7	68.6	0.3	173.6	31.6	-0.
WATTS/MWE-YR	0.	0.4	0.1	0.0	901.3	0.0	53.2	1.9	0.

*** PROPERTIES OF SPECIAL PRODUCTS ***									
CASE NUMBER 2003									
EXPOSURE 15000.0 MWD/T									
ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	285	1724	697	6851	17	1199	13	373	0
AVERAGE	281	1713	689	6879	17	1204	13	374	0
FINAL	278	1695	675	6910	17	1210	13	376	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.013	0.009	-0.	-0.	-0.	-0.	0.005	-0.
AVERAGE	0.002	0.012	0.010	0.001	0.000	0.000	0.000	0.005	0.
FINAL	0.004	0.011	0.012	0.001	0.000	0.000	0.000	0.005	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	3.0666	5.1763	-0.	-0.	-0.	-0.	4.7774	0.
FINAL	5.0091	2.6505	6.9152	0.0527	0.6867	0.0041	2.5372	5.5440	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	37.4	62.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	27.7	71.7	0.5	21.4	0.1	78.5	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0924	0.0000	0.0071	0.0031	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	263.4	-21.9	91.4	2.8	36.1	0.2	133.4	48.3	-0.
GM/MWE-YR	39.51	-3.28	13.71	0.42	5.42	0.03	20.01	6.05	-0.
GM/MMH	0.0045	-0.0004	0.0016	0.0000	0.0006	0.0000	0.0023	0.0007	-0.
GM/TON	541.2	-45.0	187.9	5.7	74.2	0.4	274.1	82.8	-0.
WATTS/MWE-YR	0.	0.4	0.1	0.0	649.9	0.1	56.0	3.4	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE	STABLE	459 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	285	1724	697	6851	17	1199	13	373	0
AVERAGE	280	1707	684	6889	17	1206	13	374	0
FINAL	275	1680	662	6930	17	1213	13	378	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.013	0.009	-0.	-0.	-0.	-0.	0.005	-0.
AVERAGE	0.002	0.012	0.011	0.001	0.000	0.000	0.000	0.005	0.
FINAL	0.005	0.011	0.012	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	3.0666	5.1763	-0.	-0.	-0.	-0.	4.7774	0.
FINAL	6.6657	2.5349	7.5123	0.0311	0.7684	0.0055	3.5549	6.1611	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	37.4	62.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	25.6	73.9	0.5	16.7	0.1	83.2	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0003	0.0001	0.0000	0.0050	0.0000	0.0100	0.0034	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	262.9	-19.0	92.1	2.0	27.9	0.2	140.2	52.2	-0.
GM/MWE-YR	39.43	-2.85	13.82	0.30	4.19	0.03	21.03	7.83	-0.
GM/MWH	0.0045	-0.0003	0.0016	0.0000	0.0005	0.0000	0.0024	0.0009	-0.
GM/TON	720.2	-52.1	252.4	5.5	76.5	0.6	384.1	143.0	-0.
WATTS/MWE-YR	0.	-0.3	0.1	0.0	502.8	0.1	58.9	4.4	0.

EXPOSURE 24391.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 2003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP-20
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	285	1724	697	6851	17	1199	13	373	0
AVERAGE	279	1701	679	6898	17	1207	13	375	0
FINAL	272	1665	649	6947	17	1216	13	379	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.013	0.009	-0.	-0.	-0.	-0.	0.005	-0.
AVERAGE	0.003	0.012	0.011	0.001	0.000	0.000	0.000	0.005	0.
FINAL	0.006	0.011	0.013	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	3.0666	5.1763	-0.	-0.	-0.	-0.	4.7774	0.
FINAL	6.1020	2.5340	6.0449	0.0495	0.7212	0.0065	4.5251	6.6306	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	37.4	62.6	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	24.0	75.5	0.5	13.8	0.1	86.0	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0003	0.0001	0.0000	0.0065	0.0000	0.0127	0.0037	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	262.0	-17.2	92.8	1.6	23.3	0.2	146.3	59.9	-0.
GM/MWE-YR	39.30	-2.58	13.91	0.24	3.50	0.03	21.95	8.99	-0.
GM/MWH	0.0045	-0.0003	0.0016	0.0000	0.0004	0.0000	0.0025	0.0010	-0.
GM/TON	875.4	-57.5	309.9	5.3	77.9	0.7	488.9	200.2	-0.
WATTS/MWE-YR	0.	-0.3	0.1	0.0	419.8	0.1	61.5	5.0	0.

GRADED		FINAL K 1.083		*** AFTER DISCHARGE BEFORE SEPARATION ***						CASE NUMBER 2003			
EXPOSURE 24391.0 MWD/T		POWER DENS 25.00 MW/T		RESIDENCE TIME 3.34 YRS.				LOAD FACTOR 0.33					
THERMAL TO ELECTRICAL EFF.													
TIME AFTER REACTOR DISCHARGE													
UNITS OF 0.45		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244	
YEAR HALF-LIFE		DAYS											
*** GM/TON ***													
0.	0.	9178.12	875.36	716.39	8128.7	3773.5	2888.7	1637.5	273.78	869.19	77.92	488.91	
0.09	15.0	9178.12	875.38	720.98	8128.7	3774.3	2882.4	1637.5	280.08	869.19	73.11	488.12	
0.18	30.0	9178.12	875.40	725.26	8128.7	3775.1	2876.1	1637.5	286.37	869.18	68.99	487.33	
0.28	45.0	9178.12	875.41	729.27	8128.7	3775.9	2869.8	1637.5	292.64	869.18	64.35	486.54	
0.37	60.0	9178.12	875.43	733.01	8128.7	3776.7	2863.5	1637.5	298.90	869.18	60.38	485.75	
0.55	90.0	9178.12	875.47	739.77	8128.7	3778.2	2851.0	1637.5	311.37	869.17	53.15	484.19	
0.74	120.0	9178.12	875.51	745.66	8128.7	3779.8	2838.6	1637.5	323.79	869.16	46.78	482.62	
0.92	150.0	9178.12	875.55	750.78	8128.7	3781.4	2826.2	1637.5	336.15	869.16	41.18	481.06	
1.10	180.0	9178.12	875.59	755.23	8128.7	3782.9	2813.8	1637.5	348.45	869.15	36.25	479.51	
2.21	360.0	9178.12	875.88	771.68	8128.7	3792.1	2740.9	1637.5	421.12	869.11	16.86	470.30	
4.41	720.0	9178.12	876.61	778.94	8128.8	3810.0	2600.6	1637.5	560.68	869.03	3.65	452.39	
6.13	1000.0	9178.12	877.32	776.83	8128.9	3823.5	2496.4	1637.5	684.10	868.97	1.11	438.94	

		*** GM/MWE-YEAR ***										
0.	0.	412.734	39.364	32.216	365.54	169.69	129.90	73.64	12.312	39.087	3.504	21.986
0.09	15.0	412.734	39.365	32.422	365.54	169.73	129.62	73.64	12.595	39.087	3.288	21.950
0.18	30.0	412.734	39.366	32.615	365.54	169.76	129.34	73.64	12.878	39.087	3.085	21.915
0.28	45.0	412.734	39.367	32.795	365.54	169.80	129.05	73.64	13.160	39.086	2.894	21.879
0.37	60.0	412.734	39.368	32.963	365.54	169.83	128.77	73.64	13.441	39.086	2.715	21.844
0.55	90.0	412.734	39.369	33.267	365.54	169.90	128.21	73.64	14.002	39.086	2.390	21.774
0.74	120.0	412.734	39.371	33.532	365.54	169.97	127.65	73.64	14.561	39.086	2.104	21.703
0.92	150.0	412.734	39.373	33.762	365.54	170.04	127.09	73.64	15.116	39.085	1.852	21.633
1.10	180.0	412.734	39.375	33.962	365.54	170.11	126.54	73.64	15.670	39.085	1.630	21.563
2.21	360.0	412.734	39.388	34.702	365.54	170.53	123.25	73.64	18.938	39.083	0.798	21.149
4.41	720.0	412.734	39.421	35.028	365.55	171.33	116.95	73.64	25.214	39.080	0.164	20.344
6.13	1000.0	412.734	39.453	34.934	365.55	171.94	112.26	73.64	29.864	39.077	0.050	19.739

GRADED		FINAL K 1.083		*** AFTER DISCHARGE,BEFORE SEPARATION ***							CASE NUMBER 2003	
TIME AFTER REACTOR DISCHARGE		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
UNITS OF	0.45											
YEAR HALF-LIFE	DAYS	*** GM/MW ***										
0.	0.	0.0102	0.0045	0.0010	0.0034	0.0016	0.0026	0.0019	-0.0003	0.0016	0.0004	0.0025
0.09	15.0	0.0102	0.0045	0.0011	0.0034	0.0016	0.0025	0.0019	-0.0003	0.0016	0.0004	0.0025
0.18	30.0	0.0102	0.0045	0.0011	0.0034	0.0016	0.0025	0.0019	-0.0002	0.0016	0.0004	0.0025
0.28	45.0	0.0102	0.0045	0.0011	0.0034	0.0016	0.0025	0.0019	-0.0002	0.0016	0.0003	0.0025
0.37	60.0	0.0102	0.0045	0.0011	0.0034	0.0016	0.0024	0.0019	-0.0002	0.0016	0.0003	0.0025
0.55	90.0	0.0102	0.0045	0.0011	0.0034	0.0016	0.0024	0.0019	-0.0001	0.0016	0.0003	0.0025
0.74	120.0	0.0102	0.0045	0.0012	0.0034	0.0016	0.0023	0.0019	-0.0000	0.0016	0.0002	0.0025
0.92	150.0	0.0102	0.0045	0.0012	0.0034	0.0016	0.0022	0.0019	0.0000	0.0016	0.0002	0.0025
1.10	180.0	0.0102	0.0045	0.0012	0.0034	0.0017	0.0022	0.0019	0.0001	0.0016	0.0002	0.0025
2.21	360.0	0.0102	0.0045	0.0013	0.0034	0.0017	0.0018	0.0019	0.0005	0.0016	0.0001	0.0024
4.41	720.0	0.0102	0.0045	0.0013	0.0034	0.0018	0.0011	0.0019	0.0012	0.0016	0.0000	0.0023
6.13	1000.0	0.0102	0.0045	0.0013	0.0034	0.0019	0.0005	0.0019	0.0017	0.0016	0.0000	0.0023

		*** WATTS/MWE-YEAR ***										
0.	0.	0.	0.	18.0408	0.	0.	0.	0.	0.135	0.	420.49	61.560
0.09	15.0	0.	0.	18.1563	0.	0.	0.	0.	0.139	0.	394.52	61.461
0.18	30.0	0.	0.	18.2642	0.	0.	0.	0.	0.142	0.	370.14	61.361
0.28	45.0	0.	0.	18.3650	0.	0.	0.	0.	0.145	0.	347.27	61.262
0.37	60.0	0.	0.	18.4593	0.	0.	0.	0.	0.148	0.	325.82	61.163
0.55	90.0	0.	0.	18.6295	0.	0.	0.	0.	0.154	0.	286.80	60.966
0.74	120.0	0.	0.	18.7778	0.	0.	0.	0.	0.160	0.	252.46	60.769
0.92	150.0	0.	0.	18.9068	0.	0.	0.	0.	0.166	0.	222.23	60.573
1.10	180.0	0.	0.	19.0189	0.	0.	0.	0.	0.172	0.	195.62	60.377
2.21	360.0	0.	0.	19.4332	0.	0.	0.	0.	0.208	0.	91.00	59.217
4.41	720.0	0.	0.	19.6158	0.	0.	0.	0.	0.277	0.	19.69	56.963
6.13	1000.0	0.	0.	19.5628	0.	0.	0.	0.	0.329	0.	5.99	55.269

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 2003

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.96	100.00	4.18	47.41	22.01	16.85	9.55	23.95	76.05	13.75	86.25
0.09	15.0	0.96	100.00	4.21	47.41	22.02	16.81	9.55	24.37	75.63	13.03	86.97
0.18	30.0	0.96	100.00	4.23	47.42	22.02	16.78	9.55	24.78	75.22	12.34	87.66
0.28	45.0	0.96	100.00	4.25	47.42	22.03	16.74	9.55	25.19	74.81	11.68	88.32
0.37	60.0	0.96	100.00	4.28	47.43	22.04	16.71	9.55	25.59	74.41	11.06	88.94
0.55	90.0	0.96	100.00	4.32	47.44	22.05	16.64	9.56	26.38	73.62	9.89	90.11
0.74	120.0	0.96	100.00	4.35	47.45	22.07	16.57	9.56	27.14	72.86	8.84	91.16
0.92	150.0	0.96	100.00	4.38	47.47	22.08	16.50	9.56	27.89	72.11	7.89	92.11
1.10	180.0	0.96	100.00	4.41	47.49	22.10	16.44	9.57	28.62	71.38	7.03	92.97
2.21	360.0	0.96	100.00	4.52	47.62	22.21	16.06	9.59	32.64	67.36	3.46	96.54
4.41	720.0	0.96	100.00	4.59	47.94	22.47	15.34	9.66	39.22	60.78	0.80	99.20
6.13	1000.0	0.96	100.00	4.61	48.21	22.67	14.80	9.71	43.32	56.68	0.25	99.75

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 2003

EXPOSURE 24391.0 MW/D/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.34 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
		YIELD FACTOR	0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.
0.74	120.0	0.	8902.78	917260.3	831.73	723.29	7884.8	3666.4	2753.4	1588.3	0.
0.83	135.0	15.0	8902.78	917260.3	831.73	723.06	7884.8	3666.4	2747.4	1588.3	0.00
1.00	163.0	43.0	8902.78	917260.3	831.73	722.63	7884.8	3666.4	2736.2	1588.3	0.00
2.00	326.0	206.0	8902.78	917260.3	831.73	720.12	7884.8	3666.4	2671.9	1588.3	0.03
3.00	489.0	369.0	8902.78	917260.3	831.73	717.62	7884.8	3666.4	2609.1	1588.3	0.11
4.00	652.0	532.0	8902.78	917260.3	831.73	715.13	7884.8	3666.4	2547.7	1588.3	0.23
5.00	815.0	695.0	8902.78	917260.3	831.73	712.65	7884.8	3666.4	2487.8	1588.3	0.39
6.00	978.0	858.0	8902.78	917260.3	831.73	710.18	7884.8	3666.4	2429.3	1588.3	0.59
7.00	1141.0	1021.0	8902.78	917260.3	831.73	707.72	7884.8	3666.4	2372.2	1588.3	0.82

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
		YIELD FACTOR	0.950	0.950	0.	0.	0.	0.	0.
0.74	120.0	0.	307.60	825.70	0.	0.	44.44	458.49	0.
0.83	135.0	15.0	307.58	825.70	0.02	0.00	41.70	457.75	2.75
1.00	163.0	43.0	307.54	825.70	0.05	0.01	37.02	456.37	7.42
2.00	326.0	206.0	307.34	825.66	0.26	0.04	18.51	448.42	25.87
3.00	489.0	369.0	307.13	825.63	0.47	0.08	9.26	440.61	35.01
4.00	652.0	532.0	306.92	825.60	0.68	0.11	4.63	432.94	39.51
5.00	815.0	695.0	306.71	825.56	0.88	0.14	2.32	425.39	41.68
6.00	978.0	858.0	306.51	825.53	1.09	0.18	1.16	417.99	42.70
7.00	1141.0	1021.0	306.30	825.50	1.30	0.21	0.58	410.70	43.12

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 2003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	400.35	41248.58	37.40	32.93	354.58	164.88	123.82	71.43	0.	0.
0.83	135.0	15.0	400.35	41248.58	37.40	32.92	354.58	164.88	123.55	71.43	0.00	0.27
1.00	163.0	43.0	400.35	41248.58	37.40	32.90	354.58	164.88	123.04	71.43	0.00	0.77
2.00	326.0	206.0	400.35	41248.58	37.40	32.38	354.58	164.88	120.15	71.43	0.00	3.67
3.00	489.0	369.0	400.35	41248.58	37.40	32.27	354.58	164.88	117.33	71.43	0.01	6.49
4.00	652.0	532.0	400.35	41248.58	37.40	32.16	354.58	164.88	114.57	71.43	0.01	9.24
5.00	815.0	695.0	400.35	41248.58	37.40	32.05	354.58	164.88	111.88	71.43	0.02	11.93
6.00	978.0	858.0	400.35	41248.58	37.40	31.94	354.58	164.88	109.25	71.43	0.03	14.55
7.00	1141.0	1021.0	400.35	41248.58	37.40	31.83	354.58	164.88	106.68	71.43	0.04	17.16

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURTIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	13.83	37.13	0.	0.	2.00	20.62	0.	0.
0.83	135.0	15.0	13.83	37.13	0.00	0.0001	1.88	20.58	0.12	0.03
1.00	163.0	43.0	13.83	37.13	0.00	0.0004	1.66	20.52	0.33	0.10
2.00	326.0	206.0	13.82	37.13	0.01	0.0019	0.83	20.17	1.16	0.45
3.00	489.0	369.0	13.81	37.13	0.02	0.0034	0.42	19.81	1.97	0.80
4.00	652.0	532.0	13.80	37.13	0.03	0.0049	0.21	19.47	1.78	1.15
5.00	815.0	695.0	13.79	37.12	0.04	0.0064	0.10	19.13	1.87	1.49
6.00	978.0	858.0	13.78	37.12	0.05	0.0079	0.05	18.80	1.92	1.82
7.00	1141.0	1021.0	13.77	37.12	0.06	0.0094	0.03	18.47	1.94	2.15

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 2003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0088	=0.3069	0.0043	0.0011	0.0021	0.0011	0.0019	0.0017	0.	0.
0.83	135.0	15.0	0.0088	=0.3069	0.0043	0.0011	0.0021	0.0011	0.0018	0.0017	0.0000	0.0000
1.00	163.0	43.0	0.0088	=0.3069	0.0043	0.0011	0.0021	0.0011	0.0018	0.0017	0.0000	0.0001
2.00	326.0	206.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0014	0.0017	0.0000	0.0004
3.00	489.0	369.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0011	0.0017	0.0000	0.0007
4.00	652.0	532.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0008	0.0017	0.0000	0.0011
5.00	815.0	695.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0005	0.0017	0.0000	0.0014
6.00	978.0	858.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0002	0.0017	0.0000	0.0017
7.00	1141.0	1021.0	0.0088	=0.3069	0.0043	0.0010	0.0021	0.0011	0.0001	0.0017	0.0000	0.0020

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURTIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	-0.0001	0.0014	0.	0.	0.0002	0.0024	0.	0.
0.83	135.0	15.0	-0.0001	0.0014	0.0000	0.0000	0.0002	0.0023	0.0000	0.0000
1.00	163.0	43.0	-0.0001	0.0014	0.0000	0.0000	0.0002	0.0023	0.0000	0.0000
2.00	326.0	206.0	-0.0001	0.0014	0.0000	0.0000	0.0001	0.0023	0.0001	0.0001
3.00	489.0	369.0	-0.0001	0.0014	0.0000	0.0000	0.0000	0.0023	0.0002	0.0001
4.00	652.0	532.0	-0.0001	0.0014	0.0000	0.0000	0.0000	0.0022	0.0002	0.0001
5.00	815.0	695.0	-0.0001	0.0014	0.0000	0.0000	0.0000	0.0022	0.0002	0.0002
6.00	978.0	858.0	-0.0001	0.0014	0.0000	0.0000	0.0000	0.0021	0.0002	0.0002
7.00	1141.0	1021.0	-0.0001	0.0014	0.0000	0.0000	0.0000	0.0021	0.0002	0.0002

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 2003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	18.2145	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	18.2086	0.	0.	0.	0.	0.	0.003
1.00	163.0	43.0	0.	0.	0.	18.1978	0.	0.	0.	0.	0.	0.009
2.00	326.0	206.0	0.	0.	0.	18.1346	0.	0.	0.	0.	0.	0.040
3.00	489.0	369.0	0.	0.	0.	18.0717	0.	0.	0.	0.	0.	0.071
4.00	652.0	532.0	0.	0.	0.	18.0090	0.	0.	0.	0.	0.	0.102
5.00	815.0	695.0	0.	0.	0.	17.9466	0.	0.	0.	0.	0.	0.131
6.00	978.0	858.0	0.	0.	0.	17.8843	0.	0.	0.	0.	0.	0.160
7.00	1141.0	1021.0	0.	0.	0.	17.8223	0.	0.	0.	0.	0.	0.188

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.152	0.	0.	0.	239.84	57.731	0.	0.
0.83	135.0	15.0	0.152	0.	0.	0.	225.02	57.637	0.0A91	0.
1.00	163.0	43.0	0.152	0.	0.	0.	199.76	57.464	0.1869	0.
2.00	326.0	206.0	0.152	0.	0.	0.	99.90	56.463	0.6514	0.
3.00	489.0	369.0	0.152	0.	0.	0.	49.96	55.479	0.8818	0.
4.00	652.0	532.0	0.152	0.	0.	0.	24.98	54.513	0.9950	0.
5.00	815.0	695.0	0.152	0.	0.	0.	12.49	53.563	1.0497	0.
6.00	978.0	858.0	0.152	0.	0.	0.	6.25	52.630	1.0752	0.
7.00	1141.0	1021.0	0.152	0.	0.	0.	3.12	51.714	1.0860	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 2003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.96	99.04	100.00	4.35	47.45	22.07	16.57	9.56	100.00	100.00
0.83	135.0	15.0	0.96	99.04	100.00	4.35	47.47	22.07	16.54	9.56	100.00	100.00
1.00	163.0	43.0	0.96	99.04	100.00	4.35	47.50	22.09	16.48	9.57	100.00	100.00
2.00	326.0	206.0	0.96	99.04	100.00	4.36	47.70	22.18	16.16	9.61	100.00	100.00
3.00	489.0	369.0	0.96	99.04	100.00	4.36	47.88	22.27	15.84	9.65	100.00	100.00
4.00	652.0	532.0	0.96	99.04	100.00	4.36	48.07	22.35	15.53	9.68	100.00	100.00
5.00	815.0	695.0	0.96	99.04	100.00	4.36	48.25	22.44	15.23	9.72	100.00	100.00
6.00	978.0	858.0	0.96	99.04	100.00	4.36	48.44	22.52	14.92	9.76	100.00	100.00
7.00	1141.0	1021.0	0.96	99.04	100.00	4.36	48.61	22.60	14.63	9.79	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	27.14	72.86	100.00	100.00	8.84	91.16	0.	0.
0.83	135.0	15.0	27.14	72.86	100.00	100.00	8.35	91.65	78.79	21.25
1.00	163.0	43.0	27.14	72.86	100.00	100.00	7.50	92.50	77.78	22.22
2.00	326.0	206.0	27.13	72.87	100.00	100.00	3.96	96.04	75.98	24.02
3.00	489.0	369.0	27.11	72.89	100.00	100.00	2.06	97.94	68.20	31.80
4.00	652.0	532.0	27.10	72.90	100.00	100.00	1.06	98.94	60.72	39.28
5.00	815.0	695.0	27.09	72.91	100.00	100.00	0.94	99.46	52.74	47.26
6.00	978.0	858.0	27.08	72.92	100.00	100.00	0.28	99.72	51.32	48.68
7.00	1141.0	1021.0	27.06	72.94	100.00	100.00	0.14	99.86	47.44	52.56

*** SPECIAL PRODUCT CONCENTRATIONS ***

PU, AM AND U-236 RECYCLE IN PRESSURIZED WATER REACTOR

CASE NUMBER 2003

A = NP237

B = AM241

C = AM243

D = AM242

E = CM242

F = CM243

G = CM244

H = PU238

I = FP-0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 870.0 GRAMS/TON

PERCENT OF FULL SCALE

GRADED BURVUP

*** FUEL PROPERTIES ***

CASE NUMBER 3000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24578.0	INITIAL PLUX/N/SQ CM*SEC	1.59E 13	FISSILE RATIO	0.25	U235 IN TAILS/U235 ENR	0.01				
POWER DENS, MW/T	25.00	AVG FLUX/NEUT/SQ CM*SEC	3.09E 13	INITIAL CONV RATIO	0.28	KG NATURAL/KG PRODUCED	1.025				
RESIDENCE TIME, YRS	3.37	MAX FLUX/MIN FLUX	3.04	NONFUEL X*SECT 1/CM	0.057	KG NAT U/MWE-YR	127.482				
TOTAL ENRICHMENT	1.94	AVG NEUTRON TEMP, C	316	FUEL DENSITY	9.26	AVERAGE R	0.050				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	1.03	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.459	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	0.856	REACTIVITY CHANGE/MWD,PK	0.0245				
ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	509	0	0	476	0	0.	890	0	1028	0
AVERAGE	0.	535	0	0	502	0	0.	998	0	1126	0
FINAL	0.	546	0	0	513	0	0.	1041	0	1165	0
ABSORPTION-INITIAL	14.23	563	85	108	566	33	5.29	1323	430	1410	98
AVERAGE	14.48	592	87	111	598	30	4.82	1504	427	1552	90
FINAL	14.58	604	89	112	612	29	4.64	1576	439	1609	85
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.078	0.	0.	0.219	0.	0.044	0.
AVERAGE	0.	0.000	0.	0.	0.037	0.	0.	0.104	0.	0.037	0.
FINAL	0.	0.000	0.	0.	0.012	0.	0.	0.066	0.	0.033	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.093	-0.	0.120	0.326	0.039	0.061	-0.001
AVERAGE	0.000	0.000	0.000	0.000	0.044	0.000	0.108	0.156	0.048	0.051	0.003
FINAL	0.000	0.000	0.000	0.000	0.014	0.001	0.103	0.101	0.045	0.046	0.004
ALPHA											
INITIAL	0.	0.106	0.	0.	0.189	0.	0.	0.487	0.	0.372	0.
AVERAGE	0.	0.105	0.	0.	0.191	0.	0.	0.507	0.	0.379	0.
FINAL	0.	0.106	0.	0.	0.193	0.	0.	0.514	0.	0.381	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	18.4	0.	6.0	54.3	0.	21.2	0.
ETA	0.	2.26	0.	0.	2.04	0.	0.	1.91	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	4.54	0.	1.76	3.46	0.	42.43	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.204	0.	0.081	0.

GRADED BURVUP

*** FUEL PROPERTIES ***

CASE NUMBER 3000

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	0.69	0.	0.	1.06	0.	0.19	0.
FINAL	0.	0.00	0.	0.	0.10	0.	0.	0.27	0.	0.12	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	0.7	-0.	99.3	62.9	23.0	11.0	3.1
FINAL	100.0	0.0	100.0	0.0	0.1	0.1	99.8	26.3	41.8	11.7	20.2
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.0643	-0.	8.9383	0.0977	0.0358	0.0173	0.0048
FINAL	0.0000	0.0000	0.0000	0.0000	0.0090	0.0084	8.7961	0.0253	0.0404	0.0114	0.0197
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.9	-1773.0	268.9	-4564.8	-2323.0	147.9	-189.6	475.1
GM/MWE-YR	0.0	0.0	0.0	0.1	-266.0	40.3	-684.7	-348.5	22.2	-28.4	71.3
GM/MMH	0.0000	0.0000	0.0000	0.0000	-0.0304	0.0046	-0.0782	-0.0398	0.0025	-0.0032	0.0081
GM/TON	0.0	0.0	0.0	2.9	-5969.6	905.5	-15369.6	-7821.3	498.1	-638.5	1599.7
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.9	289.1	268.9	282259.	813.3	1297.8	365.4	630.7
GM/MWE-YR	0.	0.0	0.0	0.1	43.4	40.3	42340.	122.	195.	55.	95.
GM/TON	0.	0.0	0.0	2.9	973.4	905.5	950352.	2738.3	4369.8	1230.4	2123.7

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 3000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24578.0 INITIAL ENRICH, 1.94 POWER DENS, MW/T 0. AV. NEUTRON TEMPERATURE, C 316.
 RESIDENCE TIME, YRS 9.37 AVERAGE R 0.050 KW/GRAMS FISSILE 1.83 AVERAGE FLUX, NEUT/SQ CM=SEC 3.09E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	39.75	35.82	17.95				
FROM PU-239	131.74	119.17	119.45				
FROM PU-241	28.05	44.43	62.56				
TOTAL	199.55	199.43	199.97				
NET FROM U-238	7.38	7.36	7.33				
NET FROM U-238	0.	0.	0.				
TOTAL	206.93	206.78	207.29				
				FERTILE CAPTURE			
				IN TH-232	-0.	0.00	0.00
				IN U-234	-0.	0.00	0.00
				IN U-238	20.64	41.15	54.46
				IN PU-240	6.67	18.26	23.49
				TOTAL	27.31	59.42	77.95
				NON-FERTILE CAPTURE			
				IN U-236	-0.	0.16	0.33
				IN PU-242	0.20	1.06	2.19
				IN SPECIAL PRODUCTS	0.32	1.38	2.28
				TOTAL	0.52	2.61	4.80
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	4.28	9.44	13.10
				IN OTHER F.P.	0.	7.07	13.32
				IN STRUCT. + MOD. + IMPUR.	5.62	12.39	17.19
				CONTROL + LEAKAGE	15.86	15.85	15.89
				TOTAL	25.77	44.76	59.49
				AS CAPTURE FORMING FERTILE ISOTOPES			
				IN U-233	-0.	0.00	0.00
				IN PU-239	22.22	20.86	21.28
				TOTAL	22.22	20.86	21.28
				AS CAPTURE FORMING NON-FERTILE ISOTOPES			
				IN U-235	3.09	2.81	1.42
				IN PU-241	3.44	5.55	7.87
				TOTAL	6.53	8.37	9.29
				NEUTRONS INTO OR FROM OTHER FUEL	53.33	0.	-34.95
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	206.93	206.78	207.29
				FERTILE CAPTURE = (PA-233 + NP-239)			
				NON-FERTILE CAPTURE	27.31	59.42	77.95
				TOTAL FISSION ABSORPTION	100.00	100.00	100.00

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	171	855	145	6831	17	1196	13	427	0
AVERAGE	172	802	145	6927	17	1212	13	432	0
FINAL	175	810	146	7040	18	1233	13	439	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.7201	0.
FINAL	0.1537	0.4990	0.2113	0.0032	0.0475	0.0001	0.0057	1.4680	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	69.7	29.9	0.5	89.3	0.2	10.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0057	0.0000	0.0000	0.0008	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	24.2	77.1	33.3	0.5	7.9	0.0	0.9	-39.8	-0.
GM/MWE=VR	3.64	11.57	5.00	0.08	1.12	0.00	0.13	-5.97	-0.
GM/MWH	0.0004	0.0013	0.0006	0.0000	0.0001	0.0000	0.0000	-0.0007	-0.
GM/TON	16.6	52.8	22.8	0.3	5.1	0.0	0.6	-27.2	-0.
WATTS/MWE=VR	0.	1.3	0.0	0.0	134.7	0.0	0.4	-3.3	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	171	855	145	6831	17	1196	13	427	0
AVERAGE	174	911	146	7024	17	1229	13	437	0
FINAL	177	935	147	7214	18	1263	14	448	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.7201	0.
FINAL	0.3266	0.7310	0.5693	0.0063	0.1466	0.0007	0.0337	1.2767	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	56.2	43.4	0.5	81.1	0.4	18.5	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0176	0.0000	0.0001	0.0007	0.
NET ISOTOPIC PRODUCTION									
GM/TON*YR	25.8	57.7	44.9	0.5	11.6	0.1	2.7	35.0	-0.
GM/MWE*YR	3.86	8.65	6.73	0.07	1.73	0.01	0.40	5.25	-0.
GM/MWH	0.0004	0.0010	0.0008	0.0000	0.0002	0.0000	0.0000	0.0006	-0.
GM/TGN	35.3	79.0	61.5	0.7	15.8	0.1	3.6	47.9	-0.
WATTS/MWE*YR	0.	1.0	0.8	0.0	208.1	0.0	1.1	2.9	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	171	855	145	6831	17	1196	13	427	0
AVERAGE	175	822	146	7108	17	1244	13	442	0
FINAL	179	854	148	7340	18	1285	14	455	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.7201	0.
FINAL	0.5226	0.7795	1.1474	0.0072	0.2566	0.0020	0.1148	1.1704	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	40.5	59.1	0.4	68.9	0.5	30.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0308	0.0000	0.0003	0.0007	0.
NET ISOTOPIC PRODUCTION									
GM/TON*YR	27.5	41.0	60.3	0.4	13.5	0.1	6.0	28.9	-0.
GM/MWE*YR	4.12	6.15	9.05	0.06	2.02	0.02	0.91	4.34	-0.
GM/MWH	0.0005	0.0007	0.0010	0.0000	0.0002	0.0000	0.0001	0.0005	-0.
GM/TGN	56.5	84.2	124.0	0.8	27.7	0.2	12.4	59.4	-0.
WATTS/MWE*YR	0.	0.7	0.1	0.0	242.8	0.0	2.5	2.4	0.

EXPOSURE 20000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	171	855	145	6831	17	1196	13	427	0
AVERAGE	176	831	146	7175	17	1256	13	445	0
FINAL	180	866	148	7418	19	1299	14	459	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.7201	0.
FINAL	0.7382	0.7038	2.0096	0.0067	0.3398	0.0036	0.3024	1.1372	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	26.0	73.7	0.2	92.8	0.6	46.6	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0408	0.0000	0.0008	0.0006	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	29.1	27.8	79.2	0.3	13.4	0.1	11.9	-23.0	-0.
GM/MWE-YR	4.37	4.16	11.89	0.04	2.01	0.02	1.79	-3.45	-0.
GM/MWH	0.0005	0.0005	0.0014	0.0000	0.0002	0.0000	0.0002	-0.0004	-0.
GM/TON	79.8	76.0	217.1	0.7	36.7	0.4	32.7	-63.0	-0.
WATTS/MWE-YR	0.	0.5	0.1	0.0	241.2	0.0	5.0	-1.9	0.

EXPOSURE 24578.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	171	855	145	6831	17	1196	13	427	0
AVERAGE	177	838	147	7224	18	1264	13	448	0
FINAL	181	872	147	7461	19	1306	14	461	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	1.7201	0.
FINAL	0.9389	0.5926	3.0509	0.0057	0.3710	0.0047	0.6239	1.1412	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	16.4	83.5	0.2	37.3	0.5	62.2	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0001	0.0000	0.0000	0.0445	0.0000	0.0017	0.0006	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	30.1	19.0	97.9	0.2	11.9	0.1	20.0	-18.6	-0.
GM/MWE-YR	4.52	2.85	14.69	0.03	1.79	0.02	3.00	-2.79	-0.
GM/MWH	0.0005	0.0003	0.0017	0.0000	0.0002	0.0000	0.0003	-0.0003	-0.
GM/TON	101.4	64.0	329.6	0.6	40.1	0.5	67.4	-62.5	-0.
WATTS/MWE-YR	0.	0.3	0.1	0.0	214.3	0.0	8.4	-1.6	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 3000

EXPOSURE 24578.0 MWD/Y POWER DENS 25.00 MW/T RESIDENCE TIME 3.36 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	905.54	101.44	123.30	2738.3	4369.8	1230.4	2123.7	64.03	329.63	40.08	67.41
0.09	15.0	905.54	101.44	125.73	2738.3	4369.9	1227.7	2123.7	66.71	329.63	37.60	67.30
0.18	30.0	905.54	101.45	128.02	2738.3	4370.0	1225.0	2123.7	69.39	329.63	35.28	67.19
0.28	45.0	905.54	101.45	130.16	2738.3	4370.1	1222.3	2123.7	72.07	329.63	33.10	67.08
0.37	60.0	905.54	101.46	132.16	2738.3	4370.2	1219.6	2123.7	74.74	329.62	31.06	66.97
0.55	90.0	905.54	101.47	135.79	2738.3	4370.4	1214.3	2123.7	80.05	329.62	27.34	66.75
0.74	120.0	905.54	101.48	138.98	2738.3	4370.6	1209.0	2123.7	85.35	329.62	24.06	66.54
0.92	150.0	905.54	101.49	141.77	2738.3	4370.9	1203.7	2123.7	90.62	329.62	21.18	66.32
1.10	180.0	905.54	101.50	144.21	2738.3	4371.1	1198.5	2123.7	95.87	329.61	18.65	66.11
2.21	360.0	905.54	101.58	153.61	2738.3	4372.3	1167.4	2123.7	126.86	329.60	8.67	64.84
4.41	720.0	905.54	101.81	159.70	2738.3	4374.8	1107.6	2123.7	186.38	329.57	1.88	62.37
6.13	1000.0	905.54	102.06	159.56	2738.4	4376.7	1063.3	2123.7	230.42	329.55	0.57	60.52

*** GM/MWE-YEAR ***

0.	0.	40.411	4.527	5.502	122.20	195.01	54.91	94.77	2.857	14.710	1.789	3.008
0.09	15.0	40.411	4.527	5.611	122.20	195.02	54.79	94.77	2.977	14.710	1.678	3.003
0.18	30.0	40.411	4.527	5.713	122.20	195.02	54.67	94.77	3.097	14.710	1.575	2.998
0.28	45.0	40.411	4.527	5.808	122.20	195.03	54.55	94.77	3.216	14.710	1.477	2.994
0.37	60.0	40.411	4.528	5.898	122.20	195.03	54.43	94.77	3.335	14.710	1.386	2.989
0.55	90.0	40.411	4.528	6.060	122.20	195.04	54.19	94.77	3.573	14.710	1.220	2.979
0.74	120.0	40.411	4.529	6.202	122.20	195.05	53.95	94.77	3.809	14.710	1.074	2.969
0.92	150.0	40.411	4.529	6.327	122.20	195.06	53.72	94.77	4.044	14.710	0.945	2.960
1.10	180.0	40.411	4.530	6.436	122.20	195.07	53.48	94.77	4.278	14.710	0.832	2.950
2.21	360.0	40.411	4.533	6.855	122.20	195.13	52.10	94.77	5.661	14.709	0.367	2.894
4.41	720.0	40.411	4.544	7.105	122.20	195.24	49.43	94.77	8.318	14.708	0.084	2.783
6.13	1000.0	40.411	4.555	7.121	122.21	195.32	47.45	94.77	10.286	14.707	0.025	2.701

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 3000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0003	0.0017	0.0002	0.0003
0.09	15.0	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0003	0.0017	0.0002	0.0003
0.18	30.0	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0004	0.0017	0.0002	0.0003
0.28	45.0	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0004	0.0017	0.0002	0.0003
0.37	60.0	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0004	0.0017	0.0002	0.0003
0.55	90.0	0.0046	0.0005	-0.0003	-0.0398	0.0025	-0.0033	0.0081	0.0004	0.0017	0.0001	0.0003
0.74	120.0	0.0046	0.0005	-0.0002	-0.0398	0.0025	-0.0034	0.0081	0.0004	0.0017	0.0001	0.0003
0.92	150.0	0.0046	0.0005	-0.0002	-0.0398	0.0025	-0.0034	0.0081	0.0005	0.0017	0.0001	0.0003
1.10	180.0	0.0046	0.0005	-0.0002	-0.0398	0.0025	-0.0034	0.0081	0.0005	0.0017	0.0001	0.0003
2.21	360.0	0.0046	0.0005	-0.0002	-0.0398	0.0025	-0.0036	0.0081	0.0006	0.0017	0.0000	0.0003
4.41	720.0	0.0046	0.0005	-0.0001	-0.0398	0.0026	-0.0039	0.0081	0.0009	0.0017	0.0000	0.0003
6.13	1000.0	0.0046	0.0005	-0.0001	-0.0398	0.0026	-0.0041	0.0081	0.0012	0.0017	0.0000	0.0003

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	3.0814	0.	0.	0.	0.	0.031	0.	214.65	8.423
0.09	15.0	0.	0.	3.1423	0.	0.	0.	0.	0.033	0.	201.38	8.409
0.18	30.0	0.	0.	3.1993	0.	0.	0.	0.	0.034	0.	188.94	8.395
0.28	45.0	0.	0.	3.2528	0.	0.	0.	0.	0.035	0.	177.27	8.382
0.37	60.0	0.	0.	3.3028	0.	0.	0.	0.	0.037	0.	166.32	8.368
0.55	90.0	0.	0.	3.3936	0.	0.	0.	0.	0.039	0.	146.40	8.341
0.74	120.0	0.	0.	3.4732	0.	0.	0.	0.	0.042	0.	128.87	8.314
0.92	150.0	0.	0.	3.5430	0.	0.	0.	0.	0.044	0.	113.44	8.288
1.10	180.0	0.	0.	3.6041	0.	0.	0.	0.	0.047	0.	95.85	8.261
2.21	360.0	0.	0.	3.8390	0.	0.	0.	0.	0.062	0.	46.45	8.102
4.41	720.0	0.	0.	3.9787	0.	0.	0.	0.	0.091	0.	10.05	7.794
6.13	1000.0	0.	0.	3.9875	0.	0.	0.	0.	0.113	0.	3.06	7.562

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 3000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***										
0.	0.	0.10	100.00	1.16	25.87	41.28	11.62	20.06	16.26	83.74
0.09	15.0	0.10	100.00	1.19	25.87	41.28	11.60	20.06	16.83	83.17
0.18	30.0	0.10	100.00	1.21	25.87	41.29	11.57	20.06	17.39	82.61
0.28	45.0	0.10	100.00	1.23	25.87	41.29	11.55	20.06	17.94	82.06
0.37	60.0	0.10	100.00	1.25	25.87	41.29	11.52	20.06	18.48	81.52
0.55	90.0	0.10	100.00	1.28	25.88	41.30	11.47	20.07	19.54	80.46
0.74	120.0	0.10	100.00	1.31	25.88	41.31	11.43	20.07	20.57	79.43
0.92	150.0	0.10	100.00	1.34	25.89	41.32	11.38	20.08	21.56	78.44
1.10	180.0	0.10	100.00	1.36	25.89	41.33	11.33	20.08	22.53	77.47
2.21	360.0	0.10	100.00	1.46	25.94	41.42	11.06	20.12	27.79	72.21
4.41	720.0	0.10	100.00	1.52	26.07	41.65	10.55	20.22	36.12	63.88
6.13	1000.0	0.10	100.00	1.53	26.18	41.84	10.16	20.38	41.16	58.84

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** G4/TON ***

CASE NUMBER 3000

EXPOSURE 24578.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.36 YRS.

LOAD FACTOR 0.33

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS		TIME AFTER SEPARATION DAYS		URANIUM RECOVERED... U236 OTHER U		NEPTUNIUM RECOVERED NP237		PLUTONIUM RECOVERED.....					
								PU238	PU239	PU240	PU241	PU242	NP237 AM241
		YIELD FACTOR		0.970 0.970		0.950		0.970	0.970	0.970	0.970	0.970	n. 0.
0.74	120.0	0.	0.	878.37	922789.1	96.40	96.40	134.81	2656.1	4239.5	1172.7	2059.9	0.00 0.
0.83	135.0	15.0	15.0	878.37	922789.1	96.40	96.40	134.77	2656.1	4239.5	1170.2	2059.9	0.00 2.56
1.00	163.0	43.0	43.0	878.37	922789.1	96.40	96.40	134.69	2656.1	4239.5	1165.4	2059.9	0.00 7.34
2.00	326.0	206.0	206.0	878.37	922789.1	96.40	96.40	134.22	2656.1	4239.5	1138.0	2059.9	0.01 34.72
3.00	489.0	369.0	369.0	878.37	922789.1	96.40	96.40	133.75	2656.1	4239.5	1111.2	2059.9	0.05 61.44
4.00	652.0	532.0	532.0	878.37	922789.1	96.40	96.40	133.29	2656.1	4239.5	1085.1	2059.9	0.10 87.51
5.00	815.0	695.0	695.0	878.37	922789.1	96.40	96.40	132.83	2656.1	4239.5	1059.6	2059.9	0.17 112.96
6.00	978.0	858.0	858.0	878.37	922789.1	96.40	96.40	132.37	2656.1	4239.5	1034.7	2059.9	0.25 137.78
7.00	1141.0	1021.0	1021.0	878.37	922789.1	96.40	96.40	131.91	2656.1	4239.5	1010.4	2059.9	0.35 162.01

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS		TIME AFTER SEPARATION DAYS		AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
				AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
		YIELD FACTOR		0.950	0.950	0	0.	0.950	0.950	0.	0.
0.74	120.0	0.	0.	81.08	313.14	0.	0.	22.86	63.21	0.	0.
0.83	135.0	15.0	15.0	81.08	313.14	0.01	0.00	21.45	63.11	1.41	0.10
1.00	163.0	43.0	43.0	81.07	313.13	0.01	0.00	19.04	62.92	3.82	0.29
2.00	326.0	206.0	206.0	81.01	313.12	0.07	0.02	9.52	61.82	13.31	1.39
3.00	489.0	369.0	369.0	80.96	313.11	0.12	0.03	4.76	60.75	18.01	2.47
4.00	652.0	532.0	532.0	80.90	313.10	0.18	0.04	2.38	59.69	20.32	3.52
5.00	815.0	695.0	695.0	80.85	313.08	0.23	0.05	1.19	58.65	21.44	4.56
6.00	978.0	858.0	858.0	80.79	313.07	0.29	0.07	0.60	57.63	21.96	5.58
7.00	1141.0	1021.0	1021.0	80.74	313.06	0.34	0.08	0.30	56.62	22.18	6.59

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 3000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	39.20	41181.48	4.30	6.02	118.54	189.20	52.34	91.93	0.	0.
0.83	135.0	15.0	39.20	41181.48	4.30	6.01	118.54	189.20	52.22	91.93	0.00	0.11
1.00	163.0	43.0	39.20	41181.48	4.30	6.01	118.54	189.20	52.01	91.93	0.00	0.33
2.00	326.0	206.0	39.20	41181.48	4.30	5.99	118.54	189.20	50.79	91.93	0.00	1.55
3.00	489.0	369.0	39.20	41181.48	4.30	5.97	118.54	189.20	49.59	91.93	0.00	2.74
4.00	652.0	532.0	39.20	41181.48	4.30	5.95	118.54	189.20	48.43	91.93	0.00	3.91
5.00	815.0	695.0	39.20	41181.48	4.30	5.93	118.54	189.20	47.29	91.93	0.01	5.04
6.00	978.0	858.0	39.20	41181.48	4.30	5.91	118.54	189.20	46.18	91.93	0.01	6.15
7.00	1141.0	1021.0	39.20	41181.48	4.30	5.89	118.54	189.20	45.09	91.93	0.02	7.23

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	3.62	13.97	0.	0.	1.02	2.82	0.	0.
0.83	135.0	15.0	3.62	13.97	0.00	0.0001	0.96	2.82	0.06	0.00
1.00	163.0	43.0	3.62	13.97	0.00	0.0001	0.85	2.81	0.17	0.01
2.00	326.0	206.0	3.62	13.97	0.00	0.0007	0.42	2.76	0.59	0.06
3.00	489.0	369.0	3.61	13.97	0.01	0.0013	0.21	2.71	0.80	0.11
4.00	652.0	532.0	3.61	13.97	0.01	0.0018	0.11	2.66	0.91	0.16
5.00	815.0	695.0	3.61	13.97	0.01	0.0024	0.05	2.62	0.96	0.20
6.00	978.0	858.0	3.61	13.97	0.01	0.0030	0.03	2.57	0.98	0.25
7.00	1141.0	1021.0	3.60	13.97	0.02	0.0035	0.01	2.53	0.99	0.29

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 3000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0045	0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0035	0.0078	0.	0.
0.83	135.0	15.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0036	0.0078	0.0000	0.0000
1.00	163.0	43.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0036	0.0078	0.0000	0.0000
2.00	326.0	206.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0037	0.0078	0.0000	0.0002
3.00	489.0	369.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0039	0.0078	0.0000	0.0003
4.00	652.0	532.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0040	0.0078	0.0000	0.0004
5.00	815.0	695.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0041	0.0078	0.0000	0.0006
6.00	978.0	858.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0042	0.0078	0.0000	0.0007
7.00	1141.0	1021.0	0.0045	-0.2539	0.0005	-0.0003	-0.0402	0.0019	-0.0044	0.0078	0.0000	0.0008

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0004	0.0016	0.	0.	0.0001	0.0003	0.	0.
0.83	135.0	15.0	0.0004	0.0016	0.0000	0.0000	0.0001	0.0003	0.0000	0.0000
1.00	163.0	43.0	0.0004	0.0016	0.0000	0.0000	0.0001	0.0003	0.0000	0.0000
2.00	326.0	206.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000
3.00	489.0	369.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000
4.00	652.0	532.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000
5.00	815.0	695.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000
6.00	978.0	858.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000
7.00	1141.0	1021.0	0.0004	0.0016	0.0000	0.0000	0.0000	0.0003	0.0001	0.0000

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** HATTS/HWE-YEAR ***

CASE NUMBER 3000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
0.45 YR	DAYS	DAYS	DAYS	U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	0.	3.3690	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	15.0	0.	0.	0.	3.3680	0.	0.	0.	0.	0.	0.001
1.00	163.0	43.0	43.0	0.	0.	0.	3.3659	0.	0.	0.	0.	0.	0.004
2.00	326.0	206.0	206.0	0.	0.	0.	3.3543	0.	0.	0.	0.	0.	0.017
3.00	489.0	369.0	369.0	0.	0.	0.	3.3426	0.	0.	0.	0.	0.	0.030
4.00	652.0	532.0	532.0	0.	0.	0.	3.3310	0.	0.	0.	0.	0.	0.043
5.00	815.0	695.0	695.0	0.	0.	0.	3.3195	0.	0.	0.	0.	0.	0.055
6.00	978.0	858.0	858.0	0.	0.	0.	3.3080	0.	0.	0.	0.	0.	0.068
7.00	1141.0	1021.0	1021.0	0.	0.	0.	3.2965	0.	0.	0.	0.	0.	0.080

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR	DAYS	DAYS	DAYS	AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.	0.040	0.	0.	0.	122.43	7.899	0.	0.
0.83	135.0	15.0	15.0	0.040	0.	0.	0.	114.86	7.886	0.0393	0.
1.00	163.0	43.0	43.0	0.040	0.	0.	0.	101.97	7.862	0.0954	0.
2.00	326.0	206.0	206.0	0.040	0.	0.	0.	50.99	7.725	0.3525	0.
3.00	489.0	369.0	369.0	0.040	0.	0.	0.	25.50	7.591	0.4901	0.
4.00	652.0	532.0	532.0	0.040	0.	0.	0.	12.75	7.458	0.5079	0.
5.00	815.0	695.0	695.0	0.040	0.	0.	0.	6.38	7.329	0.5352	0.
6.00	978.0	858.0	858.0	0.040	0.	0.	0.	3.19	7.201	0.5488	0.
7.00	1141.0	1021.0	1021.0	0.040	0.	0.	0.	1.59	7.075	0.5544	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 3000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
0.45 YR	DAYS	DAYS	DAYS	U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.10	99.90	100.00	1.31	25.88	41.31	11.43	20.07	100.00	100.00
0.83	135.0	15.0	15.0	0.10	99.90	100.00	1.31	25.89	41.32	11.40	20.08	100.00	100.00
1.00	163.0	43.0	43.0	0.10	99.90	100.00	1.31	25.90	41.34	11.36	20.09	100.00	100.00
2.00	326.0	206.0	206.0	0.10	99.90	100.00	1.31	25.97	41.45	11.33	20.14	100.00	100.00
3.00	489.0	369.0	369.0	0.10	99.90	100.00	1.31	26.04	41.56	10.89	20.19	100.00	100.00
4.00	652.0	532.0	532.0	0.10	99.90	100.00	1.31	26.11	41.67	10.67	20.25	100.00	100.00
5.00	815.0	695.0	695.0	0.10	99.90	100.00	1.31	26.17	41.78	10.44	20.30	100.00	100.00
6.00	978.0	858.0	858.0	0.10	99.90	100.00	1.31	26.24	41.88	10.22	20.35	100.00	100.00
7.00	1141.0	1021.0	1021.0	0.10	99.90	100.00	1.31	26.30	41.98	10.01	20.40	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR	DAYS	DAYS	DAYS	AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.	20.57	79.43	100.00	100.00	26.56	73.44	0.	0.
0.83	135.0	15.0	15.0	20.57	79.43	100.00	100.00	25.37	74.63	93.26	6.74
1.00	163.0	43.0	43.0	20.56	79.44	100.00	100.00	23.23	76.77	92.89	7.11
2.00	326.0	206.0	206.0	20.55	79.45	100.00	100.00	13.35	86.65	90.55	9.45
3.00	489.0	369.0	369.0	20.54	79.46	100.00	100.00	7.27	92.73	87.96	12.04
4.00	652.0	532.0	532.0	20.53	79.47	100.00	100.00	3.84	96.16	85.23	14.77
5.00	815.0	695.0	695.0	20.52	79.48	100.00	100.00	1.99	98.01	82.45	17.55
6.00	978.0	858.0	858.0	20.51	79.49	100.00	100.00	1.02	98.98	79.73	20.27
7.00	1141.0	1021.0	1021.0	20.50	79.50	100.00	100.00	0.52	99.48	77.10	22.90

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 3000

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 330.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 3001

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/Y	24324.0	INITIAL FLUX, N/SQ CM-SEC	1.25E 13	FISSILE RATIO	0.41	U235 IN TAILS/U235-ENR	0.01				
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	1.87E 13	INITIAL CONV RATIO	0.40	KG NATURAL/KG PRODUCED	1.025				
RESIDENCE TIME, YRS	3.33	MAX FLUX/MIN FLUX	2.02	NONFUEL X-SECT 1/CM	0.062	KG NAT U/MWE-YR	126.620				
TOTAL ENRICHMENT	2.30	AVG NEUTRON TEMP, C	341.	FUEL DENSITY	9.26	AVERAGE R	0.150				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.87	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.340	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	-0.921	REACTIVITY CHANGE/MWD, MK	-0.0172				
ISOTOPES	PM232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	586	0	0	471	0	0.	940	0	1010	0
AVERAGE	0.	605	0	0	492	0	0.	1031	0	1085	0
FINAL	0.	616	0	0	505	0	0.	1085	0	1130	0
ABSORPTION-INITIAL	29.46	657	189	152	576	87	8.94	1421	674	1388	253
AVERAGE	29.61	677	190	152	603	79	8.93	1575	647	1497	235
FINAL	29.70	689	192	153	619	75	8.31	1665	657	1561	220
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.077	0.	0.	0.299	0.	0.056	0.
AVERAGE	0.	0.000	0.	0.	0.048	0.	0.	0.183	0.	0.060	0.
FINAL	0.	0.000	0.	0.	0.025	0.	0.	0.126	0.	0.062	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.094	-0.	0.201	0.452	0.078	0.077	0.004
AVERAGE	0.000	0.000	0.000	0.000	0.059	0.001	0.190	0.279	0.088	0.083	0.007
FINAL	0.000	0.000	0.000	0.000	0.031	0.001	0.184	0.193	0.085	0.085	0.010
ALPHA	0.	0.121	0.	0.	0.223	0.	0.	0.512	0.	0.374	0.
AVERAGE	0.	0.119	0.	0.	0.224	0.	0.	0.527	0.	0.379	0.
FINAL	0.	0.119	0.	0.	0.226	0.	0.	0.535	0.	0.381	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	15.1	0.	6.0	58.4	0.	20.5	0.
ETA	0.	2.24	0.	0.	1.99	0.	0.	1.89	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	5.59	0.	1.70	3.10	0.	473.44	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.278	0.	0.125	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 3001

ISOTOPES	PM232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	0.69	0.	0.	1.36	0.	0.24	0.
FINAL	0.	0.00	0.	0.	0.21	0.	0.	0.50	0.	0.24	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	0.7	-0.	99.3	62.9	23.0	11.0	3.1
FINAL	100.0	0.0	100.0	0.0	0.2	0.1	99.7	33.4	37.3	15.7	13.6
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.0639	-0.	8.8909	0.1262	0.0463	0.0223	0.0063
FINAL	0.0000	0.0000	0.0000	0.0000	0.0196	0.0075	8.7447	0.0460	0.0516	0.0218	0.0189
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.4	-1439.0	241.8	-4740.8	-2599.1	174.4	-17.0	410.3
GM/MWE-YR	0.0	0.0	0.0	0.2	-215.8	36.3	-711.1	-389.9	26.2	-2.5	61.5
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0246	0.0041	-0.0812	-0.0445	0.0030	-0.0003	0.0070
GM/TON	0.0	0.0	0.0	4.6	-4794.7	805.6	-15796.5	-8660.3	581.2	-56.6	1367.0
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.4	634.6	241.8	283549.	1492.5	1674.5	707.2	613.2
GM/MWE-YR	0.	0.0	0.0	0.2	95.2	36.3	42532.	224.	251.	106.	92.
GM/TON	0.	0.0	0.0	4.6	2114.5	805.6	944802.	4973.2	5572.5	2356.5	2043.3

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24324.0 INITIAL ENRICH. 2.30 POWER DENS, MW/T 39.32 AV. NEUTRON TEMPERATURE, C 341.
 RESIDENCE TIME, YRS 3.33 AVERAGE R 0.150 KW/GRAMS FISSILE 0.87 AVERAGE FLUX, NEUT/SQ CM*SEC 1.87E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	30.12	27.66	19.94				
FROM PU-239	138.26	125.27	117.40				
FROM PU-241	27.39	43.51	60.35				
TOTAL	195.76	196.44	197.68				
NET FROM U-238	7.20	7.19	7.20				
NET FROM U-238	0.	0.	0.				
TOTAL	202.96	203.64	204.89				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	12.38	11.36	8.19				
IN PU-239	47.92	43.47	40.69				
IN PU-241	9.04	14.36	19.92				
TOTAL	69.34	69.20	68.80				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	24.52	22.82	21.75				
TOTAL	24.52	22.82	21.75				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	2.76	2.54	1.85				
IN PU-241	3.38	5.45	7.60				
TOTAL	6.14	7.99	9.45				
TOTAL FISSILE ABSORPTION	100.00	100.00	100.00				
				NEUTRONS INTO OR FROM OTHER FUEL	38.94	0.	-17.57
				IN PA-233 NON-FERTILE CAPTURE	0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	202.96	203.64	204.89
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	38.99	62.66	71.96

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP +0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	209	1216	327	6762	17	1184	13	399	0
AVERAGE	209	1109	327	6829	17	1195	13	402	0
FINAL	210	1105	327	6910	17	1210	13	407	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/GC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2208	0.
FINAL	0.1634	0.6962	0.5023	0.0053	0.0663	0.0001	0.0233	1.9912	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	57.7	41.9	0.4	74.0	0.1	25.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0080	0.0000	0.0001	0.0011	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	25.8	108.2	79.2	0.8	10.5	0.0	3.7	-36.2	-0.
GM/MWE-YR	3.87	16.24	11.89	0.13	1.57	0.00	0.55	-5.43	-0.
GM/MWH	0.0004	0.0019	0.0014	0.0000	0.0002	0.0000	0.0001	-0.0006	-0.
GM/TON	17.7	74.1	54.3	0.6	7.2	0.0	2.5	-24.8	-0.
WATTS/MWE-YR	0.	1.8	0.1	0.0	188.2	0.0	1.5	-3.0	0.

EXPOSURE 10000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	209	1216	327	6762	17	1184	13	399	0
AVERAGE	209	1110	326	6900	17	1207	13	406	0
FINAL	211	1122	326	7039	18	1232	13	414	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2208	0.
FINAL	0.3663	1.1336	1.1934	0.0122	0.2008	0.0007	0.1166	1.8651	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	48.7	50.8	0.5	63.3	0.2	36.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0241	0.0000	0.0003	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	28.9	89.4	94.1	1.0	15.8	0.1	9.2	-28.0	-0.
GM/MWE-YR	4.33	13.41	14.12	0.14	2.38	0.01	1.38	-4.21	-0.
GM/MWH	0.0005	0.0015	0.0016	0.0000	0.0003	0.0000	0.0002	-0.0005	-0.
GM/TON	39.6	122.5	128.9	1.3	21.7	0.1	12.6	-38.4	-0.
WATTS/MWE-YR	0.	1.5	0.1	0.0	282.1	0.0	3.9	-2.4	0.

EXPOSURE 15000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	209	1216	327	6762	17	1184	13	399	0
AVERAGE	210	1116	326	6962	17	1218	13	409	0
FINAL	212	1137	325	7143	18	1250	13	419	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2208	0.
FINAL	0.6107	1.3701	2.1157	0.0165	0.3493	0.0020	0.3278	1.8710	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	39.3	60.2	0.5	51.6	0.3	48.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0419	0.0000	0.0009	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	32.1	72.0	111.2	0.9	18.4	0.1	17.2	-18.4	-0.
GM/MWE-YR	4.82	10.81	16.69	0.13	2.76	0.02	2.59	-2.76	-0.
GM/MWH	0.0005	0.0012	0.0019	0.0000	0.0003	0.0000	0.0003	-0.0003	-0.
GM/TON	66.0	148.0	228.6	1.8	37.7	0.2	35.4	-37.8	-0.
WATTS/MWE-YR	0.	1.2	0.1	0.0	330.6	0.0	7.2	-1.5	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	209	1216	327	6762	17	1184	13	399	0
AVERAGE	210	1123	325	7017	17	1228	13	412	0
FINAL	213	1149	322	7221	18	1264	14	424	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.002	=0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	2.2208	0.
FINAL	0.8928	1.4349	3.2918	0.0181	0.4793	0.0038	0.7207	1.9916	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	100.0	0.
FINAL	100.0	30.4	69.2	0.4	48.0	0.3	99.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0575	0.0000	0.0020	0.0011	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	35.2	56.6	129.8	0.7	18.9	0.2	28.4	-9.0	=0.
GM/MWE=YR	5.28	8.49	19.47	0.11	2.84	0.02	4.26	-1.36	=0.
GM/MWH	0.0006	0.0010	0.0022	0.0000	0.0003	0.0000	0.0005	-0.0002	=0.
GM/TBN	96.5	155.0	355.7	2.0	51.8	0.4	77.9	-24.8	=0.
WATTS/MWE=YR	0.	0.9	0.1	0.0	340.3	0.0	11.9	-0.8	0.

EXPOSURE 24324.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	209	1216	327	6762	17	1184	13	399	0
AVERAGE	211	1128	324	7057	17	1235	13	414	0
FINAL	213	1156	320	7271	18	1273	14	426	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	0.002	=0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.004	0.004	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	2.2208	0.
FINAL	1.1584	1.3929	4.5025	0.0179	0.5593	0.0054	1.2603	2.1540	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	100.0	0.
FINAL	100.0	23.7	76.0	0.3	30.8	0.3	68.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0671	0.0000	0.0035	0.0012	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	37.6	45.2	146.0	0.6	18.1	0.2	40.9	-2.2	=0.
GM/MWE=YR	5.63	6.77	21.90	0.09	2.72	0.03	6.13	-0.32	=0.
GM/MWH	0.0006	0.0008	0.0023	0.0000	0.0003	0.0000	0.0007	-0.0000	=0.
GM/TBN	125.2	150.5	486.5	1.9	60.4	0.6	136.2	-7.2	=0.
WATTS/MWE=YR	0.	0.7	0.2	0.0	326.4	0.0	17.2	-0.2	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 3001

EXPOSURE 24324.0 MW/DY POWER DENS 25.00 MW/T RESIDENCE TIME 3.33 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
0.	0.	805.63	125.16	232.72	4973.2	5579.5	2356.5	2043.3	150.49	486.47
0.09	15.0	805.63	125.17	236.38	4973.2	5579.8	2351.4	2043.3	155.63	486.46
0.18	30.0	805.63	125.18	239.81	4973.2	5580.0	2346.2	2043.3	160.76	486.46
0.28	45.0	805.63	125.19	243.02	4973.2	5580.2	2341.1	2043.3	165.89	486.46
0.37	60.0	805.63	125.20	246.02	4973.2	5580.4	2336.0	2043.3	170.99	486.46
0.55	90.0	805.63	125.22	251.47	4973.2	5580.9	2325.8	2043.3	181.18	486.46
0.74	120.0	805.63	125.25	256.24	4973.2	5581.3	2315.6	2043.3	191.32	486.46
0.92	150.0	805.63	125.27	260.42	4973.2	5581.7	2305.5	2043.3	201.41	486.45
1.10	180.0	805.63	125.30	264.08	4973.3	5582.2	2295.4	2043.3	211.46	486.44
2.21	360.0	805.63	125.48	278.07	4973.3	5584.7	2235.9	2043.3	270.79	486.42
4.41	720.0	805.63	125.97	286.14	4973.3	5589.7	2121.5	2043.3	384.75	486.38
6.13	1000.0	805.63	126.46	286.40	4973.3	5593.5	2036.5	2043.3	469.20	486.35

*** GM/MWE-YEAR ***

0.	0.	36.328	5.644	10.494	224.26	251.60	106.26	92.14	6.786	21.936
0.09	15.0	36.328	5.644	10.659	224.26	251.61	106.03	92.14	7.018	21.936
0.18	30.0	36.328	5.645	10.814	224.26	251.62	105.80	92.14	7.249	21.936
0.28	45.0	36.328	5.645	10.958	224.26	251.63	105.57	92.14	7.480	21.936
0.37	60.0	36.328	5.646	11.094	224.26	251.64	105.34	92.14	7.711	21.936
0.55	90.0	36.328	5.647	11.339	224.26	251.66	104.88	92.14	8.170	21.936
0.74	120.0	36.328	5.649	11.555	224.26	251.68	104.42	92.14	8.627	21.936
0.92	150.0	36.328	5.649	11.743	224.26	251.70	103.96	92.14	9.082	21.936
1.10	180.0	36.328	5.650	11.908	224.26	251.72	103.51	92.14	9.535	21.936
2.21	360.0	36.328	5.658	12.539	224.26	251.83	100.83	92.14	12.211	21.934
4.41	720.0	36.328	5.680	12.903	224.26	252.06	95.66	92.14	17.350	21.932
6.13	1000.0	36.328	5.703	12.915	224.26	252.23	91.83	92.14	21.158	21.931

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 3001

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWE ***										
0.	0.	0.0041	0.0006	-0.0000	-0.0445	0.0030	-0.0003	0.0070	0.0008	0.0025
0.09	15.0	0.0041	0.0006	-0.0000	-0.0445	0.0030	-0.0003	0.0070	0.0008	0.0025
0.18	30.0	0.0041	0.0006	-0.0000	-0.0445	0.0030	-0.0003	0.0070	0.0008	0.0025
0.28	45.0	0.0041	0.0006	0.0000	-0.0445	0.0030	-0.0004	0.0070	0.0009	0.0025
0.37	60.0	0.0041	0.0006	0.0000	-0.0445	0.0030	-0.0004	0.0070	0.0009	0.0025
0.55	90.0	0.0041	0.0006	0.0001	-0.0445	0.0030	-0.0004	0.0070	0.0009	0.0025
0.74	120.0	0.0041	0.0006	0.0001	-0.0445	0.0030	-0.0005	0.0070	0.0010	0.0025
0.92	150.0	0.0041	0.0006	0.0001	-0.0445	0.0030	-0.0006	0.0070	0.0010	0.0025
1.10	180.0	0.0041	0.0006	0.0001	-0.0445	0.0030	-0.0006	0.0070	0.0011	0.0025
2.21	360.0	0.0041	0.0006	0.0002	-0.0445	0.0030	-0.0009	0.0070	0.0014	0.0025
4.41	720.0	0.0041	0.0006	0.0002	-0.0445	0.0030	-0.0015	0.0070	0.0020	0.0025
6.13	1000.0	0.0041	0.0007	0.0002	-0.0445	0.0031	-0.0019	0.0070	0.0024	0.0025

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	5.8767	0.	0.	0.	0.075	0.	326.99
0.09	15.0	0.	0.	5.9691	0.	0.	0.	0.077	0.	306.78
0.18	30.0	0.	0.	6.0556	0.	0.	0.	0.080	0.	287.83
0.28	45.0	0.	0.	6.1367	0.	0.	0.	0.082	0.	270.05
0.37	60.0	0.	0.	6.2125	0.	0.	0.	0.085	0.	253.36
0.55	90.0	0.	0.	6.3501	0.	0.	0.	0.090	0.	223.02
0.74	120.0	0.	0.	6.4706	0.	0.	0.	0.095	0.	196.32
0.92	150.0	0.	0.	6.5762	0.	0.	0.	0.100	0.	172.81
1.10	180.0	0.	0.	6.6685	0.	0.	0.	0.105	0.	152.12
2.21	360.0	0.	0.	7.0218	0.	0.	0.	0.134	0.	70.77
4.41	720.0	0.	0.	7.2256	0.	0.	0.	0.191	0.	15.31
6.13	1000.0	0.	0.	7.2322	0.	0.	0.	0.233	0.	4.66

GRADED FINAL K 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 3001

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.09	100.00	1.53	32.75	36.74	15.52	13.46	23.63	76.37	30.74	69.26
0.09	15.0	0.09	100.00	1.56	32.75	36.75	15.49	13.46	24.24	75.76	29.43	70.57
0.18	30.0	0.09	100.00	1.58	32.76	36.75	15.45	13.46	24.84	75.16	28.16	71.84
0.28	45.0	0.09	100.00	1.60	32.76	36.76	15.42	13.46	25.43	74.57	26.92	73.08
0.37	60.0	0.09	100.00	1.62	32.76	36.76	15.39	13.46	26.01	73.99	25.71	74.29
0.55	90.0	0.09	100.00	1.66	32.77	36.78	15.33	13.47	27.14	72.86	23.41	76.59
0.74	120.0	0.09	100.00	1.69	32.78	36.79	15.26	13.47	28.23	71.77	21.25	78.75
0.92	150.0	0.09	100.00	1.72	32.80	36.81	15.20	13.47	29.28	70.72	19.25	80.75
1.10	180.0	0.09	100.00	1.74	32.81	36.83	15.14	13.48	30.30	69.70	17.39	82.61
2.21	360.0	0.09	100.00	1.84	32.90	36.95	14.79	13.52	35.76	64.24	9.08	90.92
4.41	720.0	0.09	100.00	1.91	33.12	37.23	14.13	13.61	44.17	55.83	2.20	97.80
6.13	1000.0	0.09	100.00	1.92	33.30	37.46	13.64	13.68	49.10	50.90	0.70	99.30

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GWTON ***

CASE NUMBER 3001

EXPOSURE 24324.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.33 YRS.

LOAD FACTOR 0.33

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVES DAYSTIME AFTER
SEPARATION
DAYSURANIUM
RECOVERED...
U236 OTHER UNEPTUNIUM
RECOVERED
NP237PLUTONIUM
RECOVERED.....
PU238 PU239 PU240 PU241 PU242 NP237 AM241YIELD
FACTOR

0.74	120.0	0.	781.46	918514.3	118.98	248.55	4824.0	5413.9	2246.2	1982.0	0.	0.
0.83	135.0	15.0	781.46	918514.3	118.98	248.47	4824.0	5413.9	2241.3	1982.0	0.00	4.91
1.00	163.0	43.0	781.46	918514.3	118.98	248.33	4824.0	5413.9	2232.1	1982.0	0.00	14.05
2.00	326.0	206.0	781.46	918514.3	118.98	247.46	4824.0	5413.9	2179.6	1982.0	0.03	66.50
3.00	489.0	369.0	781.46	918514.3	118.98	246.61	4824.0	5413.9	2128.4	1982.0	0.09	117.68
4.00	652.0	532.0	781.46	918514.3	118.98	245.75	4824.0	5413.9	2078.4	1982.0	0.19	167.62
5.00	815.0	695.0	781.46	918514.3	118.98	244.90	4824.0	5413.9	2029.5	1982.0	0.32	216.35
6.00	978.0	858.0	781.46	918514.3	118.98	244.05	4824.0	5413.9	1981.8	1982.0	0.48	263.90
7.00	1141.0	1021.0	781.46	918514.3	118.98	243.20	4824.0	5413.9	1935.2	1982.0	0.67	310.29

TIME AFTER DISCHARGE
0.45 YR
HALF-LIVES DAYSTIME AFTER
SEPARATION
DAYSAMERICIUM
RECOVERED.....
AM241 AM243 NP237 PU239CURTIUM
RECOVERED.....
CM242 CM244 PU238 PU240YIELD
FACTOR

0.74	120.0	0.	181.75	462.13	0.	0.	34.47	127.70	0.	0.
0.83	135.0	15.0	181.74	462.13	0.01	0.00	32.34	127.49	2.13	0.21
1.00	163.0	43.0	181.72	462.12	0.03	0.00	28.71	127.11	5.76	0.59
2.00	326.0	206.0	181.60	462.11	0.16	0.02	14.36	124.89	20.06	2.80
3.00	489.0	369.0	181.47	462.09	0.28	0.04	7.18	122.72	27.15	4.96
4.00	652.0	532.0	181.35	462.07	0.40	0.06	3.59	120.58	30.64	7.12
5.00	815.0	695.0	181.23	462.05	0.52	0.08	1.80	118.48	32.33	9.22
6.00	978.0	858.0	181.11	462.03	0.64	0.10	0.90	116.41	33.11	11.28
7.00	1141.0	1021.0	180.98	462.01	0.77	0.12	0.45	114.39	33.44	13.31

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 3001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	35.24	41418.74	5.37	11.21	217.53	244.13	101.29	89.38	0.	0.
0.83	135.0	15.0	35.24	41418.74	5.37	11.20	217.53	244.13	101.07	89.38	0.00	0.22
1.00	163.0	43.0	35.24	41418.74	5.37	11.20	217.53	244.13	100.65	89.38	0.00	0.63
2.00	326.0	206.0	35.24	41418.74	5.37	11.16	217.53	244.13	98.29	89.38	0.00	3.00
3.00	489.0	369.0	35.24	41418.74	5.37	11.12	217.53	244.13	95.98	89.38	0.00	5.31
4.00	652.0	532.0	35.24	41418.74	5.37	11.08	217.53	244.13	93.72	89.38	0.01	7.56
5.00	815.0	695.0	35.24	41418.74	5.37	11.04	217.53	244.13	91.52	89.38	0.01	9.76
6.00	978.0	858.0	35.24	41418.74	5.37	11.00	217.53	244.13	89.37	89.38	0.02	11.90
7.00	1141.0	1021.0	35.24	41418.74	5.37	10.97	217.53	244.13	87.26	89.38	0.03	13.99

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	8.20	20.84	0.	0.	1.55	5.76	0.	0.
0.83	135.0	15.0	8.20	20.84	0.00	0.0001	1.46	5.75	0.10	0.01
1.00	163.0	43.0	8.19	20.84	0.00	0.0002	1.29	5.73	0.26	0.03
2.00	326.0	206.0	8.19	20.84	0.01	0.0011	0.65	5.63	0.90	0.13
3.00	489.0	369.0	8.18	20.84	0.01	0.0019	0.32	5.53	1.22	0.22
4.00	652.0	532.0	8.18	20.84	0.02	0.0027	0.16	5.44	1.38	0.32
5.00	815.0	695.0	8.17	20.84	0.02	0.0036	0.08	5.34	1.46	0.42
6.00	978.0	858.0	8.17	20.83	0.03	0.0044	0.04	5.25	1.49	0.51
7.00	1141.0	1021.0	8.16	20.83	0.03	0.0053	0.02	5.16	1.51	0.60

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 3001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0009	0.0067	0.	0.
0.83	135.0	15.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0009	0.0067	0.0000	0.0000
1.00	163.0	43.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0009	0.0067	0.0000	0.0001
2.00	326.0	206.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0012	0.0067	0.0000	0.0003
3.00	489.0	369.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0015	0.0067	0.0000	0.0006
4.00	652.0	532.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0017	0.0067	0.0000	0.0009
5.00	815.0	695.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0020	0.0067	0.0000	0.0011
6.00	978.0	858.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0022	0.0067	0.0000	0.0014
7.00	1141.0	1021.0	0.0040	0.2520	0.0006	0.0000	-0.0453	0.0021	-0.0025	0.0067	0.0000	0.0016

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0009	0.0024	0.	0.	0.0002	0.0007	0.	0.
0.83	135.0	15.0	0.0009	0.0024	0.0000	0.0000	0.0002	0.0007	0.0000	0.0000
1.00	163.0	43.0	0.0009	0.0024	0.0000	0.0000	0.0001	0.0007	0.0000	0.0000
2.00	326.0	206.0	0.0009	0.0024	0.0000	0.0000	0.0001	0.0006	0.0001	0.0000
3.00	489.0	369.0	0.0009	0.0024	0.0000	0.0000	0.0000	0.0006	0.0001	0.0000
4.00	652.0	532.0	0.0009	0.0024	0.0000	0.0000	0.0000	0.0006	0.0002	0.0000
5.00	815.0	695.0	0.0009	0.0024	0.0000	0.0000	0.0000	0.0006	0.0002	0.0000
6.00	978.0	858.0	0.0009	0.0024	0.0000	0.0000	0.0000	0.0006	0.0002	0.0001
7.00	1141.0	1021.0	0.0009	0.0024	0.0000	0.0000	0.0000	0.0006	0.0002	0.0001

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 3001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM					
0.45 YR HALF-LIVES	DAYS		RECOVERED...	OTHER U		RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED
			U236			NP237	PU238	PU239	PU240	PU241	PU242
0.74	120.0	0.	0.	0.	0.	0.	6.2765	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	0.	6.2745	0.	0.	0.	0.002
1.00	163.0	43.0	0.	0.	0.	0.	6.2708	0.	0.	0.	0.007
2.00	326.0	206.0	0.	0.	0.	0.	6.2490	0.	0.	0.	0.033
3.00	489.0	369.0	0.	0.	0.	0.	6.2273	0.	0.	0.	0.058
4.00	652.0	532.0	0.	0.	0.	0.	6.2057	0.	0.	0.	0.083
5.00	815.0	695.0	0.	0.	0.	0.	6.1842	0.	0.	0.	0.107
6.00	978.0	858.0	0.	0.	0.	0.	6.1628	0.	0.	0.	0.131
7.00	1141.0	1021.0	0.	0.	0.	0.	6.1414	0.	0.	0.	0.154

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED...	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.090	0.	0.	0.	186.50	16.123	0.	0.
0.83	135.0	15.0	0.090	0.	0.	0.	174.98	16.097	0.0638	0.
1.00	163.0	43.0	0.090	0.	0.	0.	155.34	16.048	0.1453	0.
2.00	326.0	206.0	0.090	0.	0.	0.	77.68	15.769	0.5066	0.
3.00	489.0	369.0	0.090	0.	0.	0.	38.85	15.494	0.6857	0.
4.00	652.0	532.0	0.090	0.	0.	0.	19.43	15.224	0.7738	0.
5.00	815.0	695.0	0.090	0.	0.	0.	9.71	14.959	0.8163	0.
6.00	978.0	858.0	0.090	0.	0.	0.	4.86	14.699	0.8361	0.
7.00	1141.0	1021.0	0.090	0.	0.	0.	2.43	14.443	0.8445	0.

GRADED FINAL K 1,083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 3001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM					
0.45 YR HALF-LIVES	DAYS		RECOVERED...	OTHER U		RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED
			U236			NP237	PU238	PU239	PU240	PU241	PU242
0.74	120.0	0.	0.09	99.91	100.00	1.69	32.78	36.79	15.26	13.47	100.00
0.83	135.0	15.0	0.09	99.91	100.00	1.69	32.80	36.80	15.24	13.47	100.00
1.00	163.0	43.0	0.09	99.91	100.00	1.69	32.82	36.83	15.18	13.48	100.00
2.00	326.0	206.0	0.09	99.91	100.00	1.69	32.94	36.96	14.88	13.53	100.00
3.00	489.0	369.0	0.09	99.91	100.00	1.69	33.05	37.09	14.58	13.58	100.00
4.00	652.0	532.0	0.09	99.91	100.00	1.69	33.17	37.22	14.29	13.63	100.00
5.00	815.0	695.0	0.09	99.91	100.00	1.69	33.28	37.35	14.00	13.67	100.00
6.00	978.0	858.0	0.09	99.91	100.00	1.69	33.39	37.48	13.72	13.72	100.00
7.00	1141.0	1021.0	0.09	99.91	100.00	1.69	33.50	37.60	13.44	13.77	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED...	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED	RECOVERED
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	28.23	71.77	100.00	100.00	21.25	78.75	0.	0.
0.83	135.0	15.0	28.23	71.77	100.00	100.00	20.23	79.77	91.17	8.83
1.00	163.0	43.0	28.22	71.78	100.00	100.00	18.42	81.58	90.69	9.31
2.00	326.0	206.0	28.21	71.79	100.00	100.00	10.31	89.69	87.73	12.27
3.00	489.0	369.0	28.20	71.80	100.00	100.00	5.53	94.47	84.50	15.50
4.00	652.0	532.0	28.19	71.81	100.00	100.00	2.89	97.11	81.15	18.85
5.00	815.0	695.0	28.17	71.83	100.00	100.00	1.49	98.51	77.81	22.19
6.00	978.0	858.0	28.16	71.84	100.00	100.00	0.77	99.23	74.59	25.41
7.00	1141.0	1021.0	28.15	71.85	100.00	100.00	0.39	99.61	71.53	28.47

CASE NUMBER 3001

E. ■ CM242

1 B FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 480.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 3002

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24475.0	INITIAL FLUX, N/SQ CM=SEC		9.85E 12	FISSILE RATIO		0.52	U235 IN TAILS/U235 ENR		0.01		
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM=SEC		1.29E 13	INITIAL CONV RATIO		0.47	KG NATURAL/KG PRODUCED		1.025		
RESIDENCE TIME, YRS	3.35	MAX FLUX/MIN FLUX		1.65	NONFUEL X-SECT 1/CM		0.066	KG NAT U/MWE-YR		119.939		
TOTAL ENRICHMENT	2.82	AVG NEUTRON TEMP, C		364	FUEL DENSITY		9.26	AVERAGE R		0.250		
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33								
KW/GRAMS FISSILE	0.71	WATTS/CC		185.12	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.		
INITIAL REACTIVITY	1.280	FINAL INTEGRATED REACTIVITY		1.083	FINAL REACTIVITY		0.956	REACTIVITY CHANGE/MWD, MK		0.0132		
ISOTOPES		TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	665	0	0	466	0	0.	949	0	971	0
AVERAGE		0.	678	0	0	484	0	0.	1030	0	1031	0
FINAL		0.	688	0	0	498	0	0.	1090	0	1075	0
ABSORPTION-INITIAL		45.28	752	298	195	586	142	12.83	1447	846	1331	405
AVERAGE		45.34	766	298	194	609	131	12.45	1583	817	1418	380
FINAL		45.40	778	300	194	626	125	12.21	1685	825	1483	359
MACROSCOPIC CROSS SECTION												
FISSION-INITIAL		0.	0.	0.	0.	0.076	0.	0.	0.402	0.	0.072	0.
AVERAGE		0.	0.000	0.	0.	0.054	0.	0.	0.279	0.	0.086	0.
FINAL		0.	0.000	0.	0.	0.035	0.	0.	0.202	0.	0.094	0.
ABSORPTION-INITIAL		0.	0.	0.	0.	0.095	0.	0.286	0.613	0.131	0.099	0.008
AVERAGE		0.000	0.000	0.000	0.000	0.068	0.001	0.276	0.429	0.140	0.119	0.013
FINAL		0.000	0.000	0.000	0.000	0.044	0.002	0.268	0.312	0.137	0.130	0.017
ALPHA		0.	0.131	0.	0.	0.258	0.	0.	0.525	0.	0.371	0.
AVERAGE		0.	0.130	0.	0.	0.257	0.	0.	0.537	0.	0.376	0.
FINAL		0.	0.131	0.	0.	0.257	0.	0.	0.546	0.	0.380	0.
PERCENT OF TOTAL FISSION		0.	0.0	0.	0.	12.0	0.	6.0	62.1	0.	20.0	0.
ETA		0.	2.21	0.	0.	1.94	0.	0.	1.88	0.	2.20	0.
MWD/GRAM DESTROYED		0.	0.	0.	0.	6.97	0.	1.71	2.64	0.	0.	0.
INITIAL CONVERSION RATIO		0.	0.	0.	0.	0.	0.	0.	0.312	0.	0.162	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 3002

ISOTOPE	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	0.69	0.	0.	1.82	0.	0.32	0.
FINAL	0.	0.00	0.	0.	0.30	0.	0.	0.79	0.	0.38	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	0.7	0.	99.3	62.9	23.0	11.0	3.1
FINAL	100.0	0.0	100.0	0.0	0.3	0.1	99.6	38.0	34.0	17.9	10.0
ISOTOPIC DENSITY, GM/CC											
INITIAL	0.	0.	0.	0.	0.0534	0.	8.8237	0.1681	0.0616	0.0297	0.0083
FINAL	0.0000	0.0000	0.0000	0.0001	0.0276	0.0067	8.6775	0.0736	0.0661	0.0350	0.0195
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	2.1	-1155.3	215.7	-4711.6	-3046.0	145.1	169.0	361.1
GM/MWE-YR	0.0	0.0	0.0	0.3	-173.3	32.3	-706.7	-456.9	21.8	25.4	54.2
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0198	0.0037	-0.0807	-0.0522	0.0025	0.0029	0.0062
GM/TON	0.0	0.0	0.0	6.9	-3873.2	723.1	-15796.5	-10212.3	486.5	566.8	1210.7
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	2.1	889.2	215.7	27964.1	2370.8	2130.3	1127.6	629.8
GM/MWE-YR	0.	0.0	0.0	0.3	133.4	32.3	41945.	356.	320.	169.	94.
GM/TON	0.	0.0	0.0	6.9	2981.2	723.1	93754.4	7948.6	7142.3	3780.6	2111.5

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24478.0 INITIAL ENRICH, 2.82 POWER DENS, MW/T 44.51 AV. NEUTRON TEMPERATURE, C 364.
 RESIDENCE TIME, YRS 3.35 AVERAGE R 0.250 KW/GRAMS FISSILE 0.71 AVERAGE FLUX, NEUT/SQ CM-SEC 1.29E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSION CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	22.85	21.32	17.63				
FROM PU-239	143.68	130.79	119.87				
FROM PU-241	27.10	42.48	58.57				
TOTAL	193.63	194.60	196.07				
NET FROM U-238	7.04	7.05	7.07				
NET FROM U-238	0.	0.	0.				
TOTAL	200.67	201.65	203.14				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-238	-0.	0.19	0.36
IN U-235	9.39	8.76	7.24	IN PU-242	0.92	1.99	2.92
IN PU-239	49.80	45.37	41.55	IN SPECIAL PRODUCTS	0.31	1.98	3.41
IN PU-241	8.94	14.02	19.33	TOTAL	1.23	4.16	6.69
TOTAL	68.13	68.15	68.12	NON-FUEL ABSORPTION + LEAKAGE			
AS CAPTURE FORMING FERTILE ISOTOPES				IN SM + XE	3.68	5.12	5.59
IN U-233	-0.	0.00	0.00	IN OTHER F.P.	0.	8.12	11.48
IN PU-239	26.13	24.33	22.68	IN STRUCT. + MOD. + IMPUR.	3.59	5.00	5.46
TOTAL	26.13	24.33	22.68	CONTROL + LEAKAGE	15.39	15.46	15.57
AS CAPTURE FORMING NON-FERTILE ISOTOPES				TOTAL	22.65	33.70	38.10
IN U-235	2.42	2.25	1.86	NEUTRONS INTO OR FROM OTHER FUEL	30.86	0.	-9.45
IN PU-241	3.32	5.27	7.34	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
TOTAL	5.73	7.52	9.20	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	TOTAL ABSORPTION + LEAKAGE	200.67	201.65	203.14
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	45.93	63.79	67.79

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP #0
HALF LIFE	STABLE	459 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	243	1556	518	6669	17	1167	13	172	0
AVERAGE	243	1391	516	6718	17	1175	13	174	0
FINAL	243	1376	515	6777	17	1186	13	178	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.9577	0.
FINAL	0.1654	0.9583	0.7762	0.0079	0.0865	0.0001	0.0443	2.7404	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	55.2	44.3	0.5	66.2	0.1	33.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0104	0.0000	0.0001	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	26.1	151.2	122.4	1.3	13.6	0.0	7.0	-34.3	-0.
GM/MWE-YR	3.91	22.68	18.37	0.19	2.05	0.00	1.05	-5.14	-0.
GM/MWH	0.0004	0.0026	0.0021	0.0000	0.0002	0.0000	0.0001	-0.0006	-0.
GM/TON	17.9	103.5	83.9	0.9	9.3	0.0	4.8	-23.5	-0.
WATTS/MWE-YR	0.	2.5	0.1	0.0	245.5	0.0	2.9	-2.9	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	243	1556	518	6669	17	1167	13	372	0
AVERAGE	243	1385	514	6770	17	1185	13	377	0
FINAL	243	1385	511	6877	17	1204	13	383	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.006	0.002	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.9577	0.
FINAL	0.3742	1.6702	1.7018	0.0204	0.2596	0.0007	0.2007	2.6625	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	49.4	50.0	0.6	56.5	0.2	43.3	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0312	0.0000	0.0006	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	29.5	131.7	134.2	1.6	20.5	0.1	15.8	-23.3	-0.
GM/MWE=VR	4.43	19.76	20.13	0.24	3.07	0.01	2.37	-3.49	-0.
GM/MWH	0.0005	0.0023	0.0023	0.0000	0.0004	0.0000	0.0003	-0.0004	-0.
GM/TON	40.4	180.4	183.9	2.2	28.1	0.1	21.7	-31.9	-0.
WATTS/MWE=VR	0.	2.2	0.1	0.0	368.6	0.0	6.6	-2.0	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	243	1556	518	6669	17	1167	13	372	0
AVERAGE	243	1386	513	6819	17	1193	13	379	0
FINAL	243	1395	507	6965	17	1219	13	388	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.004	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.007	0.004	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.9577	0.
FINAL	0.6257	2.1503	2.8004	0.0304	0.4520	0.0020	0.5117	2.7625	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	43.4	56.0	0.6	47.0	0.2	52.8	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0542	0.0000	0.0014	0.0015	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	32.9	113.1	147.2	1.6	23.8	0.1	26.9	-10.3	-0.
GM/MWE=VR	4.93	16.96	22.09	0.24	3.57	0.02	4.04	-1.54	-0.
GM/MWH	0.0006	0.0019	0.0025	0.0000	0.0004	0.0000	0.0003	-0.0002	-0.
GM/TON	67.6	232.3	302.6	3.3	48.8	0.2	55.3	-21.1	-0.
WATTS/MWE=VR	0.	1.9	0.2	0.0	427.8	0.0	11.3	-0.9	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	243	1556	518	6669	17	1167	13	372	0
AVERAGE	242	1390	511	6864	17	1201	13	382	0
FINAL	244	1405	502	7039	18	1232	13	392	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.008	0.005	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.9577	0.
FINAL	0.9164	2.4192	4.0929	0.0366	0.6316	0.0038	1.0282	3.0249	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	37.2	62.2	0.6	38.2	0.2	61.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0758	0.0000	0.0029	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	36.1	95.4	161.0	1.4	24.9	0.2	40.5	2.6	-0.
GM/HWE-YR	5.42	14.31	24.15	0.22	3.74	0.02	6.08	0.40	-0.
GM/MWH	0.0006	0.0016	0.0028	0.0000	0.0004	0.0000	0.0007	0.0000	-0.
GM/TON	99.0	261.4	441.1	4.0	68.2	0.4	111.1	7.3	-0.
WATTS/HWE-YR	0.	1.6	0.2	0.0	448.3	0.0	17.0	0.2	0.

EXPOSURE 24475.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	243	1556	518	6669	17	1167	13	372	0
AVERAGE	243	1393	509	6900	17	1208	13	384	0
FINAL	244	1413	497	7095	18	1242	13	395	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.006	0.003	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.009	0.007	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.9577	0.
FINAL	1.2045	2.5084	5.3821	0.0392	0.7650	0.0057	1.7092	3.3635	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	31.8	67.7	0.5	31.0	0.2	68.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0918	0.0000	0.0048	0.0019	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	38.8	80.8	173.4	1.3	24.7	0.2	55.1	13.1	-0.
GM/HWE-YR	5.82	12.13	26.02	0.19	3.70	0.03	8.26	1.96	-0.
GM/MWH	0.0007	0.0014	0.0030	0.0000	0.0004	0.0000	0.0009	0.0002	-0.
GM/TON	130.1	271.0	581.5	4.2	82.7	0.6	184.7	43.8	-0.
WATTS/HWE-YR	0.	1.3	0.2	0.0	443.7	0.0	23.1	1.1	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 3002

EXPOSURE 24475.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.35 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	723.07	130.14	363.41	7948.6	7142.3	3780.6	2111.5	271.02	581.49	82.65	184.66
0.09	15.0	723.07	130.15	368.39	7948.6	7142.6	3772.3	2111.5	279.27	581.49	77.55	184.37
0.18	30.0	723.07	130.17	373.07	7948.6	7142.9	3764.1	2111.5	287.50	581.49	72.76	184.07
0.28	45.0	723.07	130.19	377.44	7948.6	7143.2	3755.8	2111.5	295.71	581.49	68.26	183.77
0.37	60.0	723.07	130.21	381.54	7948.6	7143.5	3747.6	2111.5	303.91	581.48	64.04	183.47
0.55	90.0	723.07	130.25	388.96	7948.6	7144.1	3731.3	2111.5	320.24	581.48	56.38	182.88
0.74	120.0	723.07	130.29	395.46	7948.6	7144.7	3715.0	2111.5	336.50	581.48	49.62	182.29
0.92	150.0	723.07	130.33	401.15	7948.6	7145.3	3698.7	2111.5	352.69	581.47	43.68	181.70
1.10	180.0	723.07	130.37	406.12	7948.6	7145.9	3682.6	2111.5	368.80	581.47	38.45	181.12
2.21	360.0	723.07	130.68	425.08	7948.6	7149.4	3587.1	2111.5	463.98	581.44	17.89	177.63
4.41	720.0	723.07	131.51	435.78	7948.7	7156.1	3403.5	2111.5	646.75	581.39	3.87	170.87
6.13	1000.0	723.07	132.34	435.88	7948.7	7161.2	3267.2	2111.5	782.21	581.35	1.18	160.79

*** GM/MWE-YEAR ***

0.	0.	32.405	5.832	16.286	356.22	320.08	169.43	94.63	12.146	26.060	3.704	8.276
0.09	15.0	32.405	5.833	16.510	356.22	320.10	169.06	94.63	12.515	26.060	3.475	8.262
0.18	30.0	32.405	5.834	16.719	356.22	320.11	168.69	94.63	12.884	26.059	3.261	8.249
0.28	45.0	32.405	5.834	16.915	356.22	320.12	168.32	94.63	13.252	26.059	3.059	8.236
0.37	60.0	32.405	5.835	17.099	356.22	320.14	167.95	94.63	13.620	26.059	2.870	8.222
0.55	90.0	32.405	5.837	17.431	356.22	320.16	167.22	94.63	14.352	26.059	2.526	8.196
0.74	120.0	32.405	5.839	17.723	356.22	320.19	166.49	94.63	15.080	26.059	2.224	8.169
0.92	150.0	32.405	5.841	17.977	356.22	320.22	165.76	94.63	15.806	26.059	1.958	8.143
1.10	180.0	32.405	5.843	18.200	356.22	320.24	165.03	94.63	16.528	26.058	1.723	8.117
2.21	360.0	32.405	5.857	19.050	356.22	320.40	160.75	94.63	20.793	26.057	0.802	7.961
4.41	720.0	32.405	5.894	19.530	356.22	320.70	152.53	94.63	28.984	26.055	0.173	7.658
6.13	1000.0	32.405	5.931	19.534	356.22	320.93	146.42	94.63	35.055	26.053	0.053	7.430

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 3002

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MW ***

0.	0.	0.0037	0.0007	0.0002	-0.0522	0.0025	0.0029	0.0062	0.0014	0.0030	0.0004	0.0009
0.09	15.0	0.0037	0.0007	0.0002	-0.0522	0.0025	0.0029	0.0062	0.0014	0.0030	0.0004	0.0009
0.18	30.0	0.0037	0.0007	0.0003	-0.0522	0.0025	0.0028	0.0062	0.0015	0.0030	0.0004	0.0009
0.28	45.0	0.0037	0.0007	0.0003	-0.0522	0.0025	0.0028	0.0062	0.0015	0.0030	0.0003	0.0009
0.37	60.0	0.0037	0.0007	0.0003	-0.0522	0.0025	0.0027	0.0062	0.0016	0.0030	0.0003	0.0009
0.55	90.0	0.0037	0.0007	0.0004	-0.0522	0.0025	0.0026	0.0062	0.0016	0.0030	0.0003	0.0009
0.74	120.0	0.0037	0.0007	0.0004	-0.0522	0.0025	0.0026	0.0062	0.0017	0.0030	0.0003	0.0009
0.92	150.0	0.0037	0.0007	0.0004	-0.0522	0.0025	0.0025	0.0062	0.0018	0.0030	0.0002	0.0009
1.10	180.0	0.0037	0.0007	0.0004	-0.0522	0.0025	0.0024	0.0062	0.0019	0.0030	0.0002	0.0009
2.21	360.0	0.0037	0.0007	0.0005	-0.0522	0.0025	0.0019	0.0062	0.0024	0.0030	0.0001	0.0009
4.41	720.0	0.0037	0.0007	0.0006	-0.0522	0.0026	0.0010	0.0062	0.0033	0.0030	0.0000	0.0009
6.13	1000.0	0.0037	0.0007	0.0006	-0.0522	0.0026	0.0003	0.0062	0.0040	0.0030	0.0000	0.0008

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	9.1202	0.	0.	0.	0.	0.134	0.	444.50	23.172
0.09	15.0	0.	0.	9.2454	0.	0.	0.	0.	0.138	0.	417.04	23.135
0.18	30.0	0.	0.	9.3626	0.	0.	0.	0.	0.142	0.	391.27	23.097
0.28	45.0	0.	0.	9.4724	0.	0.	0.	0.	0.146	0.	367.10	23.060
0.37	60.0	0.	0.	9.5752	0.	0.	0.	0.	0.150	0.	344.42	23.023
0.55	90.0	0.	0.	9.7615	0.	0.	0.	0.	0.158	0.	303.17	22.948
0.74	120.0	0.	0.	9.9246	0.	0.	0.	0.	0.166	0.	266.87	22.874
0.92	150.0	0.	0.	10.0674	0.	0.	0.	0.	0.174	0.	234.91	22.800
1.10	180.0	0.	0.	10.1922	0.	0.	0.	0.	0.182	0.	206.78	22.727
2.21	360.0	0.	0.	10.6681	0.	0.	0.	0.	0.229	0.	96.20	22.290
4.41	720.0	0.	0.	10.9366	0.	0.	0.	0.	0.319	0.	20.82	21.441
6.13	1000.0	0.	0.	10.9389	0.	0.	0.	0.	0.386	0.	6.33	20.804

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 3002

TIME AFTER REACTOR DISCHARGE		PERCENT OF ELEMENT ***										
UNITS OF 0.45	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
YEAR HALF-LIFE												
0.	0.	0.08	100.00	1.70	37.24	33.46	17.71	9.89	31.79	68.21	30.92	69.08
0.09	15.0	0.08	100.00	1.73	37.24	33.47	17.67	9.89	32.44	67.56	29.61	70.39
0.18	30.0	0.08	100.00	1.75	37.25	33.47	17.64	9.89	33.08	66.92	28.33	71.67
0.28	45.0	0.08	100.00	1.77	37.25	33.48	17.60	9.90	33.71	66.29	27.08	72.92
0.37	60.0	0.08	100.00	1.79	37.26	33.49	17.57	9.90	34.32	65.68	25.87	74.13
0.55	90.0	0.08	100.00	1.82	37.27	33.50	17.50	9.90	35.51	64.49	23.56	76.44
0.74	120.0	0.08	100.00	1.86	37.29	33.52	17.43	9.91	36.66	63.34	21.40	78.60
0.92	150.0	0.08	100.00	1.88	37.31	33.54	17.36	9.91	37.75	62.25	19.38	80.62
1.10	180.0	0.08	100.00	1.91	37.33	33.56	17.29	9.92	38.81	61.19	17.51	82.49
2.21	360.0	0.08	100.00	2.00	37.46	33.69	16.90	9.95	44.38	55.62	9.15	90.85
4.41	720.0	0.08	100.00	2.07	37.75	33.99	16.16	10.03	52.66	47.34	2.22	97.78
6.13	1080.0	0.08	100.00	2.08	37.99	34.22	15.61	10.09	57.37	42.63	0.71	99.29

GRADED FINAL K 1.083

*** AFTER SEPARATION ***

CASE NUMBER 3002

*** G4/T04 ***

EXPOSURE 24475.0 MWD/Y POWER DENS 25.00 MW/T RESIDENCE TIME 3.35 YRS. LOAD FACTOR 0.33
 THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		URANIUM RECOVERED		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS	DAYS		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
			YIELD FACTOR	0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.		701.38	912317.5	123.77	383.60	7710.2	6930.4	3603.5	2048.2	0.	0.
0.83	135.0	15.0		701.38	912317.5	123.77	383.47	7710.2	6930.4	3595.6	2048.2	0.00	7.88
1.00	163.0	43.0		701.38	912317.5	123.77	383.25	7710.2	6930.4	3581.0	2048.2	0.00	22.54
2.00	326.0	206.0		701.38	912317.5	123.77	381.92	7710.2	6930.4	3496.8	2048.2	0.05	186.68
3.00	489.0	369.0		701.38	912317.5	123.77	380.59	7710.2	6930.4	3414.6	2048.2	0.15	188.79
4.00	652.0	532.0		701.38	912317.5	123.77	379.27	7710.2	6930.4	3334.3	2048.2	0.30	268.91
5.00	815.0	695.0		701.38	912317.5	123.77	377.96	7710.2	6930.4	3255.9	2048.2	0.51	347.08
6.00	978.0	858.0		701.38	912317.5	123.77	376.64	7710.2	6930.4	3179.4	2048.2	0.77	423.37
7.00	1141.0	1021.0		701.38	912317.5	123.77	375.34	7710.2	6930.4	3104.6	2048.2	1.08	497.80

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
			YIELD FACTOR	0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.		319.68	552.40	0.	0.	47.14	173.18	0.	0.
0.83	135.0	15.0		319.66	552.40	0.02	0.00	44.23	172.90	2.91	0.28
1.00	163.0	43.0		319.62	552.40	0.06	0.01	39.27	172.37	7.87	0.80
2.00	326.0	206.0		319.41	552.37	0.27	0.03	19.64	169.37	27.44	3.80
3.00	489.0	369.0		319.19	552.35	0.49	0.05	9.82	166.42	37.14	6.75
4.00	652.0	532.0		318.97	552.33	0.70	0.07	4.91	163.52	41.91	9.65
5.00	815.0	695.0		318.76	552.31	0.92	0.10	2.46	160.68	44.22	12.50
6.00	978.0	858.0		318.54	552.28	1.13	0.12	1.23	157.88	45.29	15.30
7.00	1141.0	1021.0		318.33	552.26	1.35	0.14	0.61	155.13	45.74	18.05

GRADED FINAL: K 1.083

*** AFTER SEPARATION ***
*** GM/MWE=YEAR ***

CASE NUMBER 3002

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	31.43	40885.50	5.55	17.19	345.53	310.58	161.49	91.79	0.	0.
0.83	135.0	15.0	31.43	40885.50	5.55	17.19	345.53	310.58	161.14	91.79	0.00	0.35
1.00	163.0	43.0	31.43	40885.50	5.55	17.18	345.53	310.58	160.48	91.79	0.00	1.01
2.00	326.0	206.0	31.43	40885.50	5.55	17.12	345.53	310.58	156.71	91.79	0.00	4.78
3.00	489.0	369.0	31.43	40885.50	5.55	17.06	345.53	310.58	153.02	91.79	0.01	8.46
4.00	652.0	532.0	31.43	40885.50	5.55	17.00	345.53	310.58	149.43	91.79	0.01	12.05
5.00	815.0	695.0	31.43	40885.50	5.55	16.94	345.53	310.58	145.91	91.79	0.02	15.55
6.00	978.0	858.0	31.43	40885.50	5.55	16.88	345.53	310.58	142.48	91.79	0.03	18.97
7.00	1141.0	1021.0	31.43	40885.50	5.55	16.82	345.53	310.58	139.13	91.79	0.05	22.31

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURTIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	14.33	24.76	0.	0.	2.11	7.76	0.	0.
0.83	135.0	15.0	14.33	24.76	0.00	0.0001	1.98	7.75	0.13	0.01
1.00	163.0	43.0	14.32	24.76	0.00	0.0003	1.76	7.72	0.35	0.04
2.00	326.0	206.0	14.31	24.75	0.01	0.0013	0.88	7.59	1.23	0.17
3.00	489.0	369.0	14.30	24.75	0.02	0.0023	0.44	7.46	1.66	0.30
4.00	652.0	532.0	14.29	24.75	0.03	0.0033	0.22	7.33	1.88	0.43
5.00	815.0	695.0	14.29	24.75	0.04	0.0043	0.11	7.20	1.98	0.56
6.00	978.0	858.0	14.28	24.75	0.05	0.0053	0.06	7.08	2.03	0.69
7.00	1141.0	1021.0	14.27	24.75	0.06	0.0063	0.03	6.95	2.05	0.81

GRADED FINAL: K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 3002

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0020	0.0059	0.	0.
0.83	135.0	15.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0020	0.0059	0.0000	0.0000
1.00	163.0	43.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0019	0.0059	0.0000	0.0001
2.00	326.0	206.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0014	0.0059	0.0000	0.0005
3.00	489.0	369.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0010	0.0059	0.0000	0.0010
4.00	652.0	532.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0006	0.0059	0.0000	0.0014
5.00	815.0	695.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0002	0.0059	0.0000	0.0018
6.00	978.0	858.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0002	0.0059	0.0000	0.0022
7.00	1141.0	1021.0	0.0036	0.2448	0.0006	0.0003	0.0534	0.0014	0.0006	0.0059	0.0000	0.0025

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURTIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0016	0.0028	0.	0.	0.0002	0.0009	0.	0.
0.83	135.0	15.0	0.0016	0.0028	0.0000	0.0000	0.0002	0.0009	0.0000	0.0000
1.00	163.0	43.0	0.0016	0.0028	0.0000	0.0000	0.0002	0.0009	0.0000	0.0000
2.00	326.0	206.0	0.0016	0.0028	0.0000	0.0000	0.0001	0.0009	0.0001	0.0000
3.00	489.0	369.0	0.0016	0.0028	0.0000	0.0000	0.0001	0.0009	0.0002	0.0000
4.00	652.0	532.0	0.0016	0.0028	0.0000	0.0000	0.0000	0.0008	0.0002	0.0000
5.00	815.0	695.0	0.0016	0.0028	0.0000	0.0000	0.0000	0.0008	0.0002	0.0001
6.00	978.0	858.0	0.0016	0.0028	0.0000	0.0000	0.0000	0.0008	0.0002	0.0001
7.00	1141.0	1021.0	0.0016	0.0028	0.0000	0.0000	0.0000	0.0008	0.0002	0.0001

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 3002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	9.6269	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	9.6238	0.	0.	0.	0.	0.	0.004
1.00	163.0	43.0	0.	0.	0.	9.6181	0.	0.	0.	0.	0.	0.011
2.00	326.0	206.0	0.	0.	0.	9.5847	0.	0.	0.	0.	0.	0.053
3.00	489.0	369.0	0.	0.	0.	9.5515	0.	0.	0.	0.	0.	0.093
4.00	652.0	532.0	0.	0.	0.	9.5183	0.	0.	0.	0.	0.	0.133
5.00	815.0	695.0	0.	0.	0.	9.4853	0.	0.	0.	0.	0.	0.171
6.00	978.0	858.0	0.	0.	0.	9.4524	0.	0.	0.	0.	0.	0.209
7.00	1141.0	1021.0	0.	0.	0.	9.4196	0.	0.	0.	0.	0.	0.245

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.158	0.	0.	0.	253.53	21.730	0.	0.
0.83	135.0	15.0	0.158	0.	0.	0.	237.86	21.695	0.0731	0.
1.00	163.0	43.0	0.158	0.	0.	0.	211.17	21.630	0.1976	0.
2.00	326.0	206.0	0.157	0.	0.	0.	105.60	21.253	0.6886	0.
3.00	489.0	369.0	0.157	0.	0.	0.	52.81	20.883	0.9321	0.
4.00	652.0	532.0	0.157	0.	0.	0.	26.41	20.519	1.0518	0.
5.00	815.0	695.0	0.157	0.	0.	0.	13.21	20.192	1.1097	0.
6.00	978.0	858.0	0.157	0.	0.	0.	6.60	19.811	1.1366	0.
7.00	1141.0	1021.0	0.157	0.	0.	0.	3.30	19.466	1.1480	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 3002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.08	99.92	100.00	1.86	37.29	33.52	17.43	9.91	100.00	100.00
0.83	135.0	15.0	0.08	99.92	100.00	1.86	37.31	33.53	17.40	9.91	100.00	100.00
1.00	163.0	43.0	0.08	99.92	100.00	1.86	37.33	33.56	17.34	9.92	100.00	100.00
2.00	326.0	206.0	0.08	99.92	100.00	1.86	37.49	33.70	17.00	9.96	100.00	100.00
3.00	489.0	369.0	0.08	99.92	100.00	1.86	37.64	33.83	16.67	10.00	100.00	100.00
4.00	652.0	532.0	0.08	99.92	100.00	1.86	37.79	33.97	16.34	10.04	100.00	100.00
5.00	815.0	695.0	0.08	99.92	100.00	1.86	37.94	34.10	16.02	10.08	100.00	100.00
6.00	978.0	858.0	0.08	99.92	100.00	1.86	38.08	34.23	15.70	10.12	100.00	100.00
7.00	1141.0	1021.0	0.08	99.92	100.00	1.86	38.23	34.36	15.39	10.16	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	36.66	63.34	100.00	100.00	21.40	78.60	0.	0.
0.83	135.0	15.0	36.66	63.34	100.00	100.00	20.37	79.63	91.23	8.77
1.00	163.0	43.0	36.65	63.35	100.00	100.00	18.55	81.45	90.77	9.23
2.00	326.0	206.0	36.64	63.36	100.00	100.00	10.39	89.61	87.83	12.17
3.00	489.0	369.0	36.62	63.38	100.00	100.00	5.57	94.43	84.61	15.39
4.00	652.0	532.0	36.61	63.39	100.00	100.00	2.92	97.08	81.28	18.72
5.00	815.0	695.0	36.59	63.41	100.00	100.00	1.51	98.49	77.96	22.04
6.00	978.0	858.0	36.58	63.42	100.00	100.00	0.77	99.23	74.75	25.25
7.00	1141.0	1021.0	36.56	63.44	100.00	100.00	0.39	99.61	71.71	28.29

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 3002

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP-0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 570.0 GRAMS/TON

GRADED BURNUP.

*** FUEL PROPERTIES ***

CASE NUMBER 3003

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24493.0	INITIAL FLUX, N/SQ CM=SEC	7.93E 12	FISSILE RATIO	0.61	U235 IN TAILS/U235 ENR	0.01				
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM=SEC	9.64E 12	INITIAL CONV RATIO	0.52	KG NATURAL/KG PRODUCED	1.024				
RESIDENCE TIME, YRS	3.36	MAX FLUX/MIN FLUX	1.45	NONFUEL X-SECT 1/CM	0.070	KG NAT U/MWE-YR	120.653				
TOTAL ENRICHMENT	3.47	AVG NEUTRON TEMP, C	388.	FUEL DENSITY	9.26	AVERAGE R	0.350				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.58	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.242	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	0.980	REACTIVITY CHANGE/MWD, MK	0.0107				
ISOTOPES	U232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	749	0	0	464	0	0.	936	0	924	0
AVERAGE	0.	757	0	0	479	0	0.	1005	0	969	0
FINAL	0.	766	0	0	492	0	0.	1066	0	1009	0
ABSORPTION-INITIAL	61.74	853	410	240	599	200	16.96	1433	977	1262	553
AVERAGE	61.71	863	410	239	618	186	16.60	1551	955	1328	526
FINAL	61.73	872	411	239	635	177	16.35	1655	962	1385	500
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.075	0.	0.	0.518	0.	0.090	0.
AVERAGE	0.	0.000	0.	0.	0.058	0.	0.	0.391	0.	0.112	0.
FINAL	0.	0.000	0.	0.	0.042	0.	0.	0.299	0.	0.127	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.096	0.	0.375	0.792	0.197	0.122	0.015
AVERAGE	0.000	0.000	0.000	0.000	0.074	0.002	0.364	0.603	0.205	0.154	0.020
FINAL	0.000	0.000	0.000	0.000	0.054	0.003	0.356	0.464	0.200	0.175	0.025
ALPHA	0.	0.139	0.	0.	0.291	0.	0.	0.531	0.	0.366	0.
AVERAGE	0.	0.139	0.	0.	0.291	0.	0.	0.543	0.	0.369	0.
FINAL	0.	0.138	0.	0.	0.291	0.	0.	0.553	0.	0.373	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	9.6	0.	5.9	65.2	0.	19.2	0.
ETA	0.	2.20	0.	0.	1.88	0.	0.	1.87	0.	2.21	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	8.50	0.	1.71	2.31	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.329	0.	0.195	0.

GRADED BURNUP.

*** FUEL PROPERTIES ***

CASE NUMBER 3003

ISOTOPES	U232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	0.68	0.	0.	2.37	0.	0.42	0.
FINAL	0.	0.00	0.	0.	0.36	0.	0.	1.20	0.	0.55	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	0.7	0.	99.3	62.9	23.0	11.0	3.1
FINAL	100.0	0.0	100.0	0.0	0.4	0.1	99.5	42.1	31.3	19.0	7.6
ISOTOPIIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.0629	0.	8.7447	0.2194	0.0805	0.0388	0.0109
FINAL	0.0000	0.0000	0.0000	0.0001	0.0334	0.0061	8.5985	0.1112	0.0829	0.0505	0.0204
NET ISOTOPIIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	2.8	947.2	195.1	4708.0	3485.8	79.6	376.9	305.6
GM/MWE-YR	0.0	0.0	0.0	0.4	142.1	29.3	706.2	522.9	11.9	56.5	45.8
GM/MWH	0.8000	0.0000	0.0000	0.0000	0.0162	0.0033	0.0806	0.0597	0.0014	0.0065	0.0052
GM/TON	0.0	0.0	0.0	9.6	3178.1	654.5	15796.5	11695.7	266.9	1264.5	1025.4
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	2.8	1076.9	195.1	27688.4	3580.4	2670.2	1627.4	656.2
GM/MWE-YR	0.	0.0	0.0	0.4	161.5	29.3	41933.1	537.	401.	244.	98.
GM/TON	0.	0.0	0.0	9.6	3613.1	654.5	92900.6	12012.9	8959.1	5460.1	2201.8

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 3003

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24493.0 INITIAL ENRICH. 3.47 POWER DENS, MW/T 45.49 AV. NEUTRON TEMPERATURE, C 388.
 RESIDENCE TIME, YRS 3.36 AVERAGE R 0.350 KW/GRAMS FISSILE 0.58 AVERAGE FLUX, NEUT/SQ CM-SEC 0.64E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	17.99	16.86	14.81				
FROM PU-239	147.64	135.70	124.33				
FROM PU-241	26.86	40.93	55.71				
TOTAL	192.50	193.49	194.85				
NET FROM U-238	6.92	6.93	6.95				
NET FROM U-238	0.	0.	0.				
TOTAL	199.42	200.42	201.80				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	7.39	6.93	6.08				
IN PU-239	51.18	47.06	43.10				
IN PU-241	8.87	13.51	18.39				
TOTAL	67.43	67.50	67.57				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	27.17	25.49	23.81				
TOTAL	27.17	25.49	23.81				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	2.15	2.02	1.77				
IN PU-241	3.24	4.99	6.85				
TOTAL	5.39	7.01	8.62				
TOTAL FISSION ABSORPTION	100.00	100.00	100.00				
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	50.83	64.38	64.47

NON-FERTILE CAPTURE

IN U-236	-0.	0.18	0.32
IN PU-242	1.33	2.26	2.94
IN SPECIAL PRODUCTS	0.30	2.27	3.83
TOTAL	1.63	4.71	7.09

NON-FUEL ABSORPTION + LEAKAGE			
IN SM + XE	3.30	4.20	4.30
IN OTHER F.P.	0.	8.07	10.91
IN STRUCT. + MOD. + IMPUR.	2.89	3.69	3.78
CONTROL + LEAKAGE	15.29	13.36	15.47
TOTAL	21.48	31.33	34.47

NEUTRONS INTO OR FROM OTHER FUEL	25.47	0.	4.22
IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL ABSORPTION + LEAKAGE	199.42	200.42	201.80

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	278	1888	717	6611	17	1197	12	349	0
AVERAGE	277	1665	713	6645	17	1163	12	350	0
FINAL	276	1639	710	6688	17	1171	13	353	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/GC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.8614	0.
FINAL	0.1646	1.2848	1.0542	0.0109	0.1081	0.0001	0.0668	3.6516	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	94.9	44.7	0.5	61.9	0.1	38.0	100.0	0.
HEAT OUTPUT, WATTS/GC	0.	0.0001	0.0000	0.0000	0.0130	0.0000	0.0002	0.0020	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	26.0	202.7	166.3	1.7	17.0	0.0	10.5	-33.1	-0.
GM/MWE=VR	3.89	30.40	24.94	0.26	2.96	0.00	1.58	-4.96	-0.
GM/MWH	0.0004	0.0035	0.0028	0.0000	0.0003	0.0000	0.0002	-0.0006	-0.
GM/TGN	17.0	138.8	113.9	1.2	11.7	0.0	7.2	-22.7	-0.
WATTS/MWE=VR	0.	3.3	0.2	0.0	306.9	0.0	4.4	-9.8	0.

EXPOSURE 10000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	278	1888	717	6611	17	1157	12	349	0
AVERAGE	276	1651	710	6683	17	1169	12	352	0
FINAL	275	1638	703	6762	17	1184	13	357	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.009	0.004	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.8614	0.
FINAL	0.3721	2.3096	2.1895	0.0302	0.3224	0.0007	0.2842	3.6188	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	51.2	48.1	0.7	53.3	0.1	46.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0387	0.0000	0.0008	0.0020	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	29.3	182.2	172.7	2.4	25.4	0.1	22.4	-19.1	-0.
GM/MWE=VR	4.40	27.32	25.90	0.36	3.81	0.01	3.36	-2.87	-0.
GM/MWH	0.0005	0.0031	0.0030	0.0000	0.0004	0.0000	0.0004	0.0003	-0.
GM/TON	40.2	249.5	236.6	3.3	34.8	0.1	30.7	-26.2	-0.
WATTS/MWE=VR	0.	3.0	0.2	0.0	457.6	0.0	9.4	-1.6	0.

EXPOSURE 15000.0 MWD/Y

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	278	1888	717	6611	17	1157	12	349	0
AVERAGE	275	1647	706	6720	17	1176	12	354	0
FINAL	275	1642	696	6832	17	1196	13	361	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.007	0.003	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.013	0.006	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.8614	0.
FINAL	0.6205	3.0830	3.4253	0.0483	0.5605	0.0020	0.6814	3.8112	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	47.2	52.0	0.7	45.3	0.2	54.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0003	0.0000	0.0000	0.0673	0.0000	0.0019	0.0021	0.
NET ISOTOPIC PRODUCTION									
GM/TON=VR	32.6	162.1	180.1	2.5	29.5	0.1	35.8	-2.6	-0.
GM/MWE=VR	4.89	24.32	27.02	0.38	4.42	0.02	5.37	-0.40	-0.
GM/MWH	0.0006	0.0028	0.0031	0.0000	0.0005	0.0000	0.0006	0.0000	-0.
GM/TON	67.0	333.1	370.1	5.2	60.6	0.2	73.6	-5.4	-0.
WATTS/MWE=VR	0.	2.7	0.2	0.0	530.5	0.0	15.0	-0.2	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	278	1888	717	6611	17	1157	12	349	0
AVERAGE	275	1646	703	6755	17	1182	12	356	0
FINAL	275	1648	688	6897	17	1207	13	364	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.009	0.004	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.015	0.008	0.001	0.000	0.000	0.000	0.004	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.8614	0.
FINAL	0.9058	3.6180	4.7729	0.0619	0.7887	0.0038	1.2931	4.2163	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	43.0	56.3	0.7	38.0	0.2	61.8	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0004	0.0000	0.0000	0.0946	0.0000	0.0036	0.0024	0.
NET ISOTOPIC PRODUCTION									
GM/IDN-YR	35.7	142.7	188.2	2.4	31.1	0.1	51.0	14.0	-0.
GM/HWE-YR	5.36	21.40	28.23	0.37	4.67	0.02	7.65	2.10	-0.
GM/MWH	0.0006	0.0024	0.0032	0.0000	0.0005	0.0000	0.0009	0.0002	-0.
GM/TON	97.9	390.9	515.7	6.7	85.2	0.4	139.7	38.3	-0.
WATTS/HWE-YR	0.	2.4	0.2	0.0	559.9	0.0	21.4	1.2	0.

EXPOSURE 24493.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 3003

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	278	1888	717	6611	17	1157	12	349	0
AVERAGE	275	1647	699	6785	17	1187	12	358	0
FINAL	275	1655	681	6949	17	1216	13	367	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	-0.
AVERAGE	0.000	0.010	0.005	0.001	0.000	0.000	0.000	0.004	0.
FINAL	0.001	0.016	0.010	0.001	0.000	0.000	0.000	0.004	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.8614	0.
FINAL	1.1899	3.9113	6.0841	0.0702	0.9707	0.0058	2.0555	4.7339	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	39.1	60.2	0.7	32.2	0.2	67.6	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0004	0.0000	0.0000	0.1165	0.0000	0.0058	0.0027	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	38.3	125.9	195.9	2.3	31.3	0.2	66.2	28.1	-0.
GM/HWE-YR	5.75	18.89	29.39	0.34	4.69	0.03	9.93	4.21	-0.
GM/MWH	0.0007	0.0022	0.0034	0.0000	0.0005	0.0000	0.0011	0.0005	-0.
GM/TON	128.6	422.6	657.3	7.6	104.9	0.6	222.1	94.3	-0.
WATTS/HWE-YR	0.	2.1	0.2	0.0	562.7	0.0	27.8	2.4	0.

GRADED		FINAL K 1.083		*** AFTER DISCHARGE,BEFORE SEPARATION ***						CASE NUMBER 3003			
EXPOSURE 24493.0 MWD/Y		POWER DENS 25.00 MW/T		RESIDENCE TIME 3.35 YRS,				LOAD FACTOR 0.33					
THERMAL TO ELECTRICAL EFF,													
TIME AFTER REACTOR DISCHARGE													
UNITS OF 0.45		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244	
YEAR HALF-LIFE		DAYS											
*** GM/TON ***													
0.	0.	654.49	128.56	511.47	12012.9	8959.1	5460.1	2201.8	422.59	657.34	104.88	222.09	
0.09	15.0	654.49	128.59	517.78	12012.9	8959.5	5448.2	2201.8	434.50	657.34	98.40	221.73	
0.18	30.0	654.49	128.62	523.69	12012.9	8959.8	5436.3	2201.8	446.39	657.34	92.32	221.37	
0.28	45.0	654.49	128.64	529.23	12012.9	8960.2	5424.4	2201.8	458.25	657.33	86.62	221.01	
0.37	60.0	654.49	128.67	534.41	12012.9	8960.6	5412.5	2201.8	470.08	657.33	81.27	220.65	
0.55	90.0	654.49	128.73	543.80	12012.9	8961.3	5388.9	2201.8	493.67	657.33	71.53	219.94	
0.74	120.0	654.49	128.80	552.01	12012.9	8962.0	5365.3	2201.8	517.15	657.32	62.97	219.23	
0.92	150.0	654.49	128.86	559.20	12012.9	8962.7	5341.9	2201.8	540.52	657.32	55.43	218.52	
1.10	180.0	654.49	128.93	565.48	12012.9	8963.4	5318.6	2201.8	563.79	657.31	48.79	217.82	
2.21	360.0	654.49	129.40	589.35	12013.0	8967.6	5180.7	2201.8	701.22	657.28	22.70	213.63	
4.41	720.0	654.49	130.65	602.54	12013.0	8975.7	4915.5	2201.8	965.15	657.22	4.91	205.50	
6.13	1000.0	654.49	131.88	602.36	12013.1	8981.8	4718.7	2201.8	1160.74	657.18	1.49	199.39	

		*** GM/MWE=YEAR ***										
0.	0.	29.309	5.757	22.904	537.96	401.21	244.52	98.60	18.924	29.437	4.697	9.946
0.09	15.0	29.309	5.758	23.187	537.96	401.22	243.98	98.60	19.458	29.437	4.407	9.929
0.18	30.0	29.309	5.760	23.452	537.96	401.24	243.45	98.60	19.920	29.437	4.134	9.913
0.28	45.0	29.309	5.761	23.700	537.96	401.26	242.92	98.60	20.521	29.437	3.879	9.897
0.37	60.0	29.309	5.762	23.932	537.96	401.27	242.38	98.60	21.051	29.437	3.639	9.881
0.55	90.0	29.309	5.765	24.352	537.96	401.30	241.33	98.60	22.107	29.436	3.203	9.849
0.74	120.0	29.309	5.768	24.720	537.96	401.34	240.27	98.60	23.159	29.436	2.820	9.818
0.92	150.0	29.309	5.771	25.042	537.96	401.37	239.22	98.60	24.206	29.436	2.482	9.786
1.10	180.0	29.309	5.774	25.323	537.96	401.40	238.18	98.60	25.248	29.436	2.185	9.754
2.21	360.0	29.309	5.795	26.392	537.97	401.59	232.00	98.60	31.402	29.434	1.016	9.567
4.41	720.0	29.309	5.851	26.983	537.97	401.95	220.13	98.60	43.221	29.432	0.220	9.203
6.13	1000.0	29.309	5.906	26.975	537.97	402.22	211.31	98.60	51.980	29.430	0.067	8.929

GRADED		FINAL K 1.083		*** AFTER DISCHARGE,BEFORE SEPARATION ***						CASE NUMBER 3003			
TIME AFTER REACTOR DISCHARGE													
UNITS OF 0.45		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244	
YEAR HALF-LIFE	DAYS	*** GM/MW ***											
0.	0.	0.0033	0.0007	0.0005	-0.0597	0.0014	0.0065	0.0052	0.0022	0.0034	0.0005	0.0011	
0.09	15.0	0.0033	0.0007	0.0005	-0.0597	0.0014	0.0064	0.0052	0.0022	0.0034	0.0005	0.0011	
0.18	30.0	0.0033	0.0007	0.0005	-0.0597	0.0014	0.0063	0.0052	0.0023	0.0034	0.0005	0.0011	
0.28	45.0	0.0033	0.0007	0.0006	-0.0597	0.0014	0.0063	0.0052	0.0023	0.0034	0.0004	0.0011	
0.37	60.0	0.0033	0.0007	0.0006	-0.0597	0.0014	0.0062	0.0052	0.0024	0.0034	0.0004	0.0011	
0.55	90.0	0.0033	0.0007	0.0006	-0.0597	0.0014	0.0061	0.0052	0.0025	0.0034	0.0004	0.0011	
0.74	120.0	0.0033	0.0007	0.0007	-0.0597	0.0014	0.0060	0.0052	0.0026	0.0034	0.0003	0.0011	
0.92	150.0	0.0033	0.0007	0.0007	-0.0597	0.0014	0.0059	0.0052	0.0028	0.0034	0.0003	0.0011	
1.10	180.0	0.0033	0.0007	0.0008	-0.0597	0.0014	0.0057	0.0052	0.0029	0.0034	0.0002	0.0011	
2.21	360.0	0.0033	0.0007	0.0009	-0.0597	0.0014	0.0050	0.0052	0.0036	0.0034	0.0001	0.0011	
4.41	720.0	0.0033	0.0007	0.0009	-0.0597	0.0014	0.0037	0.0052	0.0049	0.0034	0.0000	0.0010	
6.13	1000.0	0.0033	0.0007	0.0009	-0.0597	0.0015	0.0027	0.0052	0.0059	0.0034	0.0000	0.0010	

		*** WATTS/MWE-YEAR ***										
0.	0.	0.	0.	12.8265	0.	0.	0.	0.	0.208	0.	563.61	27.847
0.09	15.0	0.	0.	12.9849	0.	0.	0.	0.	0.214	0.	528.79	27.802
0.18	30.0	0.	0.	13.1332	0.	0.	0.	0.	0.220	0.	496.12	27.757
0.28	45.0	0.	0.	13.2720	0.	0.	0.	0.	0.226	0.	465.47	27.713
0.37	60.0	0.	0.	13.4019	0.	0.	0.	0.	0.232	0.	436.71	27.668
0.55	90.0	0.	0.	13.6373	0.	0.	0.	0.	0.243	0.	384.42	27.579
0.74	120.0	0.	0.	13.8433	0.	0.	0.	0.	0.255	0.	332.38	27.489
0.92	150.0	0.	0.	14.0235	0.	0.	0.	0.	0.266	0.	297.86	27.401
1.10	180.0	0.	0.	14.1810	0.	0.	0.	0.	0.278	0.	262.20	27.312
2.21	360.0	0.	0.	14.7796	0.	0.	0.	0.	0.345	0.	121.97	26.787
4.41	720.0	0.	0.	15.1105	0.	0.	0.	0.	0.475	0.	26.40	25.768
6.13	1000.0	0.	0.	15.1060	0.	0.	0.	0.	0.572	0.	8.03	25.002

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 3003

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.07	100.00	1.75	41.22	30.74	18.73	7.55	39.13	60.87	32.08	67.92
0.09	15.0	0.07	100.00	1.78	41.22	30.75	18.70	7.56	39.80	60.20	30.74	49.26
0.18	30.0	0.07	100.00	1.80	41.23	30.75	18.66	7.56	40.44	59.56	29.43	70.57
0.28	45.0	0.07	100.00	1.82	41.24	30.76	18.62	7.56	41.08	58.92	28.16	71.84
0.37	60.0	0.07	100.00	1.84	41.25	30.77	18.59	7.56	41.70	58.30	26.92	73.08
0.55	90.0	0.07	100.00	1.87	41.27	30.79	18.51	7.56	42.89	57.11	24.54	75.46
0.74	120.0	0.07	100.00	1.90	41.29	30.80	18.44	7.57	44.03	55.97	22.31	77.69
0.92	150.0	0.07	100.00	1.92	41.31	30.82	18.37	7.57	45.12	54.88	20.23	79.77
1.10	180.0	0.07	100.00	1.95	41.34	30.84	18.30	7.58	46.17	53.83	18.30	81.70
2.21	360.0	0.07	100.00	2.04	41.49	30.97	17.89	7.60	51.62	48.38	9.60	90.40
4.41	720.0	0.07	100.00	2.10	41.84	31.26	17.12	7.67	59.49	40.51	2.33	97.67
6.13	1000.0	0.07	100.00	2.11	42.12	31.50	16.55	7.72	63.85	36.15	0.74	99.26

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 3003

EXPOSURE 24493.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.35 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED	PLUTONIUMRECOVERED.....						
			U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	634.86	904650.9	122.36	535.45	11652.6	8693.1	5204.4	2135.7	0.	0.
0.83	135.0	15.0	634.86	904650.9	122.36	535.28	11652.6	8693.1	5193.0	2135.7	0.00	11.38
1.00	163.0	43.0	634.86	904650.9	122.36	534.96	11652.6	8693.1	5171.8	2135.7	0.00	32.56
2.00	326.0	206.0	634.86	904650.9	122.36	533.11	11652.6	8693.1	5050.2	2135.7	0.07	154.08
3.00	489.0	369.0	634.86	904650.9	122.36	531.26	11652.6	8693.1	4931.5	2135.7	0.21	272.66
4.00	652.0	532.0	634.86	904650.9	122.36	529.41	11652.6	8693.1	4815.6	2135.7	0.43	388.37
5.00	815.0	695.0	634.86	904650.9	122.36	527.58	11652.6	8693.1	4702.4	2135.7	0.73	501.28
6.00	978.0	858.0	634.86	904650.9	122.36	525.75	11652.6	8693.1	4591.8	2135.7	1.11	611.45
7.00	1141.0	1021.0	634.86	904650.9	122.36	523.92	11652.6	8693.1	4483.9	2135.7	1.56	718.95

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	491.29	624.45	0.	0.	59.82	208.27	0.	0.
0.83	135.0	15.0	491.26	624.45	0.03	0.00	56.12	207.93	3.70	0.34
1.00	163.0	43.0	491.20	624.45	0.09	0.01	49.83	207.31	9.99	0.26
2.00	326.0	206.0	490.87	624.42	0.42	0.03	24.92	203.70	34.82	4.57
3.00	489.0	369.0	490.54	624.40	0.75	0.06	12.46	200.15	47.13	8.12
4.00	652.0	532.0	490.21	624.37	1.08	0.08	6.23	196.66	53.18	11.61
5.00	815.0	695.0	489.88	624.35	1.41	0.11	3.12	193.24	56.11	15.03
6.00	978.0	858.0	489.55	624.32	1.74	0.13	1.56	189.87	57.47	18.40
7.00	1141.0	1021.0	489.22	624.30	2.07	0.16	0.78	186.56	58.04	21.71

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 3003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	28.43	40512.12	5.48	23.98	521.83	389.30	233.06	95.64	0.	0.51
0.83	135.0	15.0	28.43	40512.12	5.48	23.97	521.83	389.30	232.55	95.64	0.00	0.51
1.00	163.0	43.0	28.43	40512.12	5.48	23.96	521.83	389.30	231.60	95.64	0.00	1.46
2.00	326.0	206.0	28.43	40512.12	5.48	23.87	521.83	389.30	226.16	95.64	0.00	6.90
3.00	489.0	369.0	28.43	40512.12	5.48	23.79	521.83	389.30	220.84	95.64	0.01	12.21
4.00	652.0	532.0	28.43	40512.12	5.48	23.71	521.83	389.30	215.65	95.64	0.02	17.39
5.00	815.0	695.0	28.43	40512.12	5.48	23.63	521.83	389.30	210.58	95.64	0.03	22.45
6.00	978.0	858.0	28.43	40512.12	5.48	23.54	521.83	389.30	205.63	95.64	0.05	27.38
7.00	1141.0	1021.0	28.43	40512.12	5.48	23.46	521.83	389.30	200.80	95.64	0.07	32.28

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	22.00	27.96	0.	0.	2.68	9.33	0.	0.
0.83	135.0	15.0	22.00	27.96	0.00	0.0001	2.51	9.31	0.17	0.02
1.00	163.0	43.0	22.00	27.96	0.00	0.0003	2.23	9.28	0.45	0.04
2.00	326.0	206.0	21.98	27.96	0.02	0.0014	1.12	9.12	1.56	0.20
3.00	489.0	369.0	21.97	27.96	0.03	0.0026	0.56	8.96	2.11	0.36
4.00	652.0	532.0	21.95	27.96	0.05	0.0037	0.28	8.81	2.38	0.52
5.00	815.0	695.0	21.94	27.96	0.06	0.0048	0.14	8.65	2.51	0.67
6.00	978.0	858.0	21.92	27.96	0.08	0.0060	0.07	8.50	2.57	0.82
7.00	1141.0	1021.0	21.91	27.96	0.09	0.0071	0.03	8.35	2.60	0.97

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 3003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0052	0.0049	0.	0.
0.83	135.0	15.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0051	0.0049	0.0000	0.0001
1.00	163.0	43.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0050	0.0049	0.0000	0.0002
2.00	326.0	206.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0044	0.0049	0.0000	0.0008
3.00	489.0	369.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0038	0.0049	0.0000	0.0014
4.00	652.0	532.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0032	0.0049	0.0000	0.0020
5.00	815.0	695.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0026	0.0049	0.0000	0.0026
6.00	978.0	858.0	0.0032	0.2398	0.0006	0.0006	-0.0616	0.0000	0.0020	0.0049	0.0000	0.0031
7.00	1141.0	1021.0	0.0032	0.2398	0.0006	0.0005	-0.0616	0.0000	0.0015	0.0049	0.0000	0.0037

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0025	0.0032	0.	0.	0.0003	0.0011	0.	0.
0.83	135.0	15.0	0.0025	0.0032	0.0000	0.0000	0.0003	0.0011	0.0000	0.0000
1.00	163.0	43.0	0.0025	0.0032	0.0000	0.0000	0.0003	0.0011	0.0001	0.0000
2.00	326.0	206.0	0.0025	0.0032	0.0000	0.0000	0.0001	0.0010	0.0002	0.0000
3.00	489.0	369.0	0.0025	0.0032	0.0000	0.0000	0.0001	0.0010	0.0002	0.0000
4.00	652.0	532.0	0.0025	0.0032	0.0000	0.0000	0.0000	0.0010	0.0003	0.0001
5.00	815.0	695.0	0.0025	0.0032	0.0000	0.0000	0.0000	0.0010	0.0003	0.0001
6.00	978.0	858.0	0.0025	0.0032	0.0000	0.0000	0.0000	0.0010	0.0003	0.0001
7.00	1141.0	1021.0	0.0025	0.0032	0.0000	0.0000	0.0000	0.0010	0.0003	0.0001

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 3003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	13.4280	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	13.4237	0.	0.	0.	0.	0.	0.006
1.00	163.0	43.0	0.	0.	0.	13.4157	0.	0.	0.	0.	0.	0.016
2.00	326.0	206.0	0.	0.	0.	13.3692	0.	0.	0.	0.	0.	0.076
3.00	489.0	369.0	0.	0.	0.	13.3228	0.	0.	0.	0.	0.	0.134
4.00	652.0	532.0	0.	0.	0.	13.2768	0.	0.	0.	0.	0.	0.191
5.00	815.0	695.0	0.	0.	0.	13.2306	0.	0.	0.	0.	0.	0.247
6.00	978.0	858.0	0.	0.	0.	13.1847	0.	0.	0.	0.	0.	0.301
7.00	1141.0	1021.0	0.	0.	0.	13.1389	0.	0.	0.	0.	0.	0.354

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.242	0.	0.	0.	321.46	26.115	0.	0.
0.83	135.0	15.0	0.242	0.	0.	0.	301.40	26.073	0.0927	0.
1.00	163.0	43.0	0.242	0.	0.	0.	267.76	25.994	0.2505	0.
2.00	326.0	206.0	0.242	0.	0.	0.	133.90	25.541	0.8731	0.
3.00	489.0	369.0	0.242	0.	0.	0.	66.96	25.097	1.1819	0.
4.00	652.0	532.0	0.241	0.	0.	0.	33.48	24.659	1.3337	0.
5.00	815.0	695.0	0.241	0.	0.	0.	16.74	24.230	1.4070	0.
6.00	978.0	858.0	0.241	0.	0.	0.	8.37	23.808	1.4411	0.
7.00	1141.0	1021.0	0.241	0.	0.	0.	4.19	23.393	1.4556	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 3003

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.07	99.93	100.00	1.90	41.29	30.80	18.44	7.57	100.00	100.00
0.83	135.0	15.0	0.07	99.93	100.00	1.90	41.31	30.82	18.41	7.57	100.00	100.00
1.00	163.0	43.0	0.07	99.93	100.00	1.90	41.34	30.84	18.35	7.58	100.00	100.00
2.00	326.0	206.0	0.07	99.93	100.00	1.90	41.52	30.98	17.99	7.61	100.00	100.00
3.00	489.0	369.0	0.07	99.93	100.00	1.90	41.70	31.11	17.65	7.64	100.00	100.00
4.00	652.0	532.0	0.07	99.93	100.00	1.90	41.88	31.24	17.31	7.68	100.00	100.00
5.00	815.0	695.0	0.07	99.93	100.00	1.90	42.05	31.37	16.97	7.71	100.00	100.00
6.00	978.0	858.0	0.07	99.93	100.00	1.90	42.22	31.50	16.64	7.74	100.00	100.00
7.00	1141.0	1021.0	0.07	99.93	100.00	1.91	42.39	31.62	16.31	7.77	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	44.03	55.97	100.00	100.00	22.31	77.69	0.	0.
0.83	135.0	15.0	44.03	55.97	100.00	100.00	21.25	78.75	91.65	8.35
1.00	163.0	43.0	44.03	55.97	100.00	100.00	19.38	80.62	91.21	8.79
2.00	326.0	206.0	44.01	55.99	100.00	100.00	10.90	89.10	88.39	11.61
3.00	489.0	369.0	44.00	56.00	100.00	100.00	5.86	94.14	85.30	14.70
4.00	652.0	532.0	43.98	56.02	100.00	100.00	3.07	96.93	82.08	17.92
5.00	815.0	695.0	43.97	56.03	100.00	100.00	1.59	98.41	78.87	21.13
6.00	978.0	858.0	43.95	56.05	100.00	100.00	0.81	99.19	75.75	24.25
7.00	1141.0	1021.0	43.93	56.07	100.00	100.00	0.42	99.58	72.79	27.22

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 3003

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP = 0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 650.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 4000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24414.0	INITIAL FLUX, N/SQ CM-SEC		1.04E 13	FISSILE RATIO		0.48	U235 IN TAILS/U235 ENR		0.01	
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC		1.44E 13	INITIAL CONV RATIO		0.39	KG NATURAL/KG PRODUCED		1.025	
RESIDENCE TIME, YRS	3.34	MAX FLUX/MIN FLUX		1.76	NONFUEL X-SECT 1/CM		0.065	KG NAT U/MWE-YR		123.852	
TOTAL ENRICHMENT	2.67	AVG NEUTRON TEMP, C		362	FUEL DENSITY		9.26	AVERAGE R		0.250	
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33							
KW/GRAMS FISSILE	0.75	WATTS/CC		185.11	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.	
INITIAL REACTIVITY	1.332	FINAL INTEGRATED REACTIVITY		1.083	FINAL REACTIVITY		0.940	REACTIVITY CHANGE/MWD, MK		0.0160	
ISOTOPES											
	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PL242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	674	0	0	475	0	0.	962	0	1148	0
AVERAGE	0.	687	0	0	494	0	0.	1054	0	1065	0
FINAL	0.	695	0	0	506	0	0.	1115	0	1103	0
ABSORPTION-INITIAL	45.32	761	298	194	596	142	12.71	1467	1414	1610	452
AVERAGE	45.37	776	299	194	620	130	12.28	1623	998	1467	433
FINAL	45.42	785	300	193	636	124	12.05	1728	908	1523	407
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.078	0.	0.	0.114	0.	-0.	0.
AVERAGE	0.	0.000	0.	0.	0.053	0.	0.	0.288	0.	0.038	0.
FINAL	0.	0.000	0.	0.	0.032	0.	0.	0.196	0.	0.065	0.
ABSORPTION-INITIAL	0.	-0.	-0.	-0.	0.098	-0.	0.286	0.677	0.049	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.066	0.001	0.274	0.442	0.096	0.052	0.003
FINAL	0.000	0.000	0.000	0.000	0.041	0.002	0.266	0.304	0.110	0.090	0.007
ALPHA	INITIAL	0.	0.129	0.	0.	0.255	0.	0.	0.525	0.	0.402
AVERAGE	0.	0.130	0.	0.	0.256	0.	0.	0.540	0.	0.378	0.
FINAL	0.	0.129	0.	0.	0.257	0.	0.	0.550	0.	0.381	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	13.0	0.	6.0	70.5	0.	10.5	0.
ETA	0.	2.21	0.	0.	1.94	0.	0.	1.87	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	6.38	0.	1.50	2.19	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.326	0.	0.064	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 4000

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	0.69	0.	0.	1.98	0.	-0.	0.
FINAL	0.	0.00	0.	0.	0.27	0.	0.	0.75	0.	0.26	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	0.7	-0.	99.3	93.0	7.0	-0.	-0.
FINAL	100.0	0.0	100.0	0.0	0.3	0.1	99.6	46.9	32.3	15.8	4.9
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.0640	-0.	8.8988	0.1832	0.0139	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0249	0.0072	8.7329	0.0697	0.0482	0.0237	0.0074
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.1	-1262.0	231.4	-5361.5	-3667.5	1108.6	765.9	237.7
GM/MWE-YR	0.0	0.0	0.0	0.0	-189.3	34.7	-804.2	-550.1	166.3	114.9	35.7
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0216	0.0040	-0.0918	-0.0628	0.0190	0.0131	0.0041
GM/TON	0.0	0.0	0.0	0.4	-4220.6	773.9	-17931.2	-12265.9	3707.6	2561.5	794.9
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.1	803.2	231.4	282117.	2252.3	1557.6	765.9	237.7
GM/MWE-YR	0.	0.0	0.0	0.0	120.8	34.7	42318.	338.	234.	115.	36.
GM/TON	0.	0.0	0.0	0.4	2692.9	773.9	943521.	7532.7	5209.3	2561.5	794.9

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24414.0 INITIAL ENRICH, 2.67 POWER DENS, MW/T 45.23 AV. NEUTRON TEMPERATURE, C 362.
 RESIDENCE TIME, YRS 3.34 AVERAGE R 0.250 KW/GRAMS FISSION 0.75 AVERAGE FLUX, NEUT/SQ CM*SEC 1.44E 13

BASIS=100 NEUTRONS ABSORBED IN FISSIONABLE MATERIAL

FISSION NEUTRONS FORMED	FUEL REACTOR			NON-FISSIONABLE CAPTURE	FUEL REACTOR		
	INITIAL	AVERAGE	FINAL		INITIAL	AVERAGE	FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	24.46	22.95	18.11				
FROM PU-239	165.33	147.69	130.09				
FROM PU-241	-0.	20.55	45.58				
TOTAL	189.79	191.20	193.77				
NET FROM U-238	6.97	6.98	7.04				
NET FROM U-238	0.	0.	0.				
TOTAL	196.76	198.18	200.81				
NEUTRONS ABSORBED IN FISSIONABLE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.23	0.43
IN U-235	10.05	9.43	7.44	IN PU-242	-0.	0.47	1.41
IN PU-239	57.31	51.25	45.09	IN SPECIAL PRODUCTS	-0.	0.51	1.47
IN PU-241	-0.	6.78	15.04	TOTAL	-0.	1.23	3.30
TOTAL	67.36	67.46	67.57				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	3.63	5.47	6.11
IN PU-239	30.08	27.56	24.79	IN OTHER F.P.	0.	8.35	11.60
TOTAL	30.08	27.56	24.79	IN STRUCT. + MOD. + IMPUR.	3.65	5.50	6.15
				CONTROL + LEAKAGE	15.09	15.20	15.40
				TOTAL	22.37	34.52	39.27
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL			
IN U-235	2.56	2.41	1.91	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	-0.	2.57	5.73	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	2.56	4.97	7.64	TOTAL ABSORPTION + LEAKAGE	196.76	198.18	200.81
TOTAL FISSIONABLE ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	37.61	62.43	70.99

EXPDSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 4000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	247	1578	518	6809	17	1192	13	379	0
AVERAGE	247	1409	518	6862	17	1201	13	382	0
FINAL	246	1395	519	6926	17	1213	13	386	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/GC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	0.1695	0.0838	0.0081	0.0005	0.0058	0.0000	0.0003	0.0062	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	90.7	8.7	0.6	95.8	0.1	4.1	100.0	0.
HEAT OUTPUT, WATTS/GC									
	0.	0.0000	0.0000	0.0000	0.0007	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	24.7	13.2	1.3	0.1	0.9	0.0	0.0	1.0	-0.
GM/MWE-YR	4.01	1.98	0.19	0.01	0.14	0.00	0.01	0.15	-0.
GM/MWH	0.0005	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.
GM/TON	18.3	9.1	0.9	0.1	0.6	0.0	0.0	0.7	-0.
WATTS/MWE-YR	0.	0.2	0.0	0.0	16.5	0.0	0.0	0.1	0.

EXPOSURE 10000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 4000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		247	1578	518	6809	17	1192	13	379	0
AVERAGE		246	1404	518	6917	17	1211	13	385	0
FINAL		246	1406	519	7028	18	1230	13	391	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/GC										
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL	0.1907	0.3150	0.0784	0.0032	0.0409	0.0001	0.0053	0.0434	0.	0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL	100.0	79.6	19.6	0.8	88.5	0.2	11.3	100.0	0.	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0049	0.0000	0.0000	0.0000	0.	0.
NET ISOTOPIC PRODUCTION										
GM/TON=YR	30.8	24.8	6.2	0.3	3.2	0.0	0.4	3.4	-0.	-0.
GM/MWE=YR	4.62	3.73	0.93	0.04	0.48	0.00	0.06	0.51	-0.	-0.
GM/MWH	0.0005	0.0004	0.0001	0.0000	0.0001	0.0000	0.0000	0.0001	-0.	-0.
GM/TGN	42.2	34.0	8.5	0.3	4.4	0.0	0.6	4.7	-0.	-0.
WATTS/MWE=YR	0.	0.4	0.0	0.0	58.1	0.0	0.2	0.3	0.	0.

EXPOSURE 15000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 4000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		247	1578	518	6809	17	1192	13	379	0
AVERAGE		246	1406	518	6967	17	1219	13	388	0
FINAL		246	1418	519	7110	18	1245	13	396	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL		0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/GC										
INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL		0.6646	0.6254	0.3021	0.0078	0.1183	0.0004	0.0335	0.1512	=0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL		100.0	67.1	32.1	0.8	77.9	0.3	21.9	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0001	0.0000	0.0000	0.0142	0.0000	0.0001	0.0001	0.
NET ISOTOPIC PRODUCTION										
GM/TGN=YR		34.9	32.9	15.9	0.4	6.2	0.0	1.8	7.9	=0.
GM/MWE=YR		5.24	4.93	2.38	0.06	0.93	0.00	0.26	1.19	=0.
GM/MWH		0.0006	0.0006	0.0003	0.0000	0.0001	0.0000	0.0000	0.0001	=0.
GM/TGN		71.8	67.6	32.6	0.8	12.8	0.0	3.6	16.3	=0.
WATTS/MWE=YR		0.	0.5	0.0	0.0	112.0	0.0	0.7	0.7	0.

EXPOSURE 20000.0 MWd/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 4000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		247	1578	518	6809	17	1192	13	379	0
AVERAGE		246	1410	518	7010	17	1227	13	390	0
FINAL		246	1428	517	7173	18	1256	14	399	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE		0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL		0.001	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/GC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL		0.9861	0.9327	0.7742	0.0129	0.2322	0.0012	0.1259	0.3659	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		100.0	54.4	44.8	0.8	64.8	0.3	34.9	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0001	0.0000	0.0000	0.0279	0.0000	0.0004	0.0002	0.
NET ISOTOPIC PRODUCTION										
GM/TON=VR		38.9	35.8	30.5	0.5	9.2	0.0	5.0	14.4	-0.
GM/MWE=VR		5.83	5.52	4.58	0.08	1.37	0.01	0.75	2.16	-0.
GM/MWH		0.0007	0.0006	0.0005	0.0000	0.0002	0.0000	0.0001	0.0002	-0.
GM/TON		106.5	100.8	83.6	1.4	25.1	0.1	13.6	39.5	-0.
WATTS/MWE=VR		0.	0.6	0.0	0.0	164.8	0.0	2.1	1.2	0.

EXPOSURE 24414.0 MWd/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 4000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		247	1578	518	6809	17	1192	13	379	0
AVERAGE		246	1414	518	7043	17	1233	13	392	0
FINAL		246	1435	515	7215	18	1263	14	401	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE		0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL		0.001	0.004	0.002	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL		1.3001	1.1512	1.4456	0.0169	0.3465	0.0022	0.3121	0.6560	=0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.	=0.
FINAL		100.0	44.2	55.1	0.6	52.6	0.3	47.0	100.0	=0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0001	0.0000	0.0000	0.0416	0.0000	0.0009	0.0004	0.
NET ISOTOPIC PRODUCTION										
GM/TON=VR		42.0	37.2	46.7	0.5	11.2	0.1	10.1	21.2	=0.
GM/MWE=VR		6.30	5.58	7.01	0.08	1.68	0.01	1.51	3.10	=0.
GM/MWH		0.0007	0.0006	0.0008	0.0000	0.0002	0.0000	0.0002	0.0004	=0.
GM/TON		140.5	124.4	156.2	1.8	37.4	0.2	33.7	70.9	=0.
WATTS/MWE=VR		0.	0.6	0.0	0.0	201.5	0.0	4.2	1.8	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 4000

EXPOSURE 24414.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.34 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF,TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE

DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	773.87	140.47	70.87	7532.7	5209.3	2561.5	794.9	124.38	156.18	37.43	33.72
0.09	15.0	773.87	140.47	73.16	7532.7	5209.4	2555.9	794.9	129.97	156.18	35.12	33.67
0.18	30.0	773.87	140.48	75.31	7532.7	5209.4	2550.3	794.9	135.55	156.18	32.95	33.61
0.28	45.0	773.87	140.49	77.32	7532.7	5209.5	2544.7	794.9	141.12	156.18	30.91	33.56
0.37	60.0	773.87	140.50	79.20	7532.7	5209.5	2539.1	794.9	146.68	156.18	29.00	33.50
0.55	90.0	773.87	140.52	82.62	7532.7	5209.6	2528.0	794.9	157.75	156.18	25.53	33.39
0.74	120.0	773.87	140.54	85.63	7532.7	5209.7	2517.0	794.9	168.77	156.18	22.47	33.29
0.92	150.0	773.87	140.56	88.26	7532.7	5209.8	2506.0	794.9	179.75	156.18	19.78	33.18
1.10	180.0	773.87	140.58	90.58	7532.7	5209.9	2495.0	794.9	190.67	156.18	17.41	33.07
2.21	360.0	773.87	140.75	99.52	7532.7	5210.6	2430.4	794.9	255.20	156.17	6.10	32.44
4.41	720.0	773.87	141.22	105.08	7532.8	5211.8	2306.0	794.9	379.13	156.16	1.75	31.28
6.13	1000.0	773.87	141.72	105.67	7532.8	5212.7	2213.6	794.9	470.97	156.14	0.53	30.27

*** GM/MWE-YEAR ***

0.	0.	34.768	6.311	3.184	338.42	234.04	115.08	35.71	5.588	7.017	1.682	1.515
0.09	15.0	34.768	6.311	3.287	338.42	234.04	114.83	35.71	5.839	7.017	1.578	1.512
0.18	30.0	34.768	6.311	3.383	338.42	234.04	114.58	35.71	6.090	7.017	1.480	1.510
0.28	45.0	34.768	6.312	3.474	338.42	234.05	114.33	35.71	6.340	7.017	1.389	1.508
0.37	60.0	34.768	6.312	3.558	338.42	234.05	114.08	35.71	6.590	7.017	1.303	1.505
0.55	90.0	34.768	6.313	3.712	338.42	234.05	113.58	35.71	7.087	7.017	1.147	1.500
0.74	120.0	34.768	6.314	3.847	338.42	234.06	113.08	35.71	7.583	7.017	1.010	1.495
0.92	150.0	34.768	6.315	3.965	338.42	234.06	112.59	35.71	8.076	7.017	0.889	1.491
1.10	180.0	34.768	6.316	4.069	338.42	234.07	112.09	35.71	8.566	7.017	0.782	1.486
2.21	360.0	34.768	6.323	4.471	338.42	234.10	109.19	35.71	11.465	7.016	0.364	1.457
4.41	720.0	34.768	6.345	4.721	338.42	234.15	103.60	35.71	17.033	7.016	0.079	1.402
6.13	1000.0	34.768	6.367	4.747	338.42	234.19	99.45	35.71	21.159	7.015	0.024	1.368

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 4000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE

DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0131	0.0041	0.0006	0.0008	0.0002	0.0002
0.09	15.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0131	0.0041	0.0007	0.0008	0.0002	0.0002
0.18	30.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0131	0.0041	0.0007	0.0008	0.0002	0.0002
0.28	45.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0130	0.0041	0.0007	0.0008	0.0002	0.0002
0.37	60.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0130	0.0041	0.0008	0.0008	0.0001	0.0002
0.55	90.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0130	0.0041	0.0008	0.0008	0.0001	0.0002
0.74	120.0	0.0040	0.0007	0.0004	-0.0629	0.0190	0.0129	0.0041	0.0009	0.0008	0.0001	0.0002
0.92	150.0	0.0040	0.0007	0.0005	-0.0629	0.0190	0.0128	0.0041	0.0009	0.0008	0.0001	0.0002
1.10	180.0	0.0040	0.0007	0.0005	-0.0629	0.0190	0.0128	0.0041	0.0010	0.0008	0.0001	0.0002
2.21	360.0	0.0040	0.0007	0.0005	-0.0629	0.0190	0.0125	0.0041	0.0013	0.0008	0.0000	0.0002
4.41	720.0	0.0040	0.0007	0.0005	-0.0629	0.0190	0.0118	0.0041	0.0019	0.0008	0.0000	0.0002
6.13	1000.0	0.0040	0.0007	0.0005	-0.0629	0.0190	0.0113	0.0041	0.0024	0.0008	0.0000	0.0002

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	1.7830	0.	0.	0.	0.	0.061	0.	201.81	4.242
0.09	15.0	0.	0.	1.8407	0.	0.	0.	0.	0.064	0.	189.34	4.235
0.18	30.0	0.	0.	1.8946	0.	0.	0.	0.	0.067	0.	177.64	4.228
0.28	45.0	0.	0.	1.9452	0.	0.	0.	0.	0.070	0.	166.67	4.221
0.37	60.0	0.	0.	1.9927	0.	0.	0.	0.	0.072	0.	156.37	4.214
0.55	90.0	0.	0.	2.0788	0.	0.	0.	0.	0.078	0.	137.65	4.201
0.74	120.0	0.	0.	2.1543	0.	0.	0.	0.	0.083	0.	121.16	4.187
0.92	150.0	0.	0.	2.2206	0.	0.	0.	0.	0.089	0.	106.66	4.174
1.10	180.0	0.	0.	2.2788	0.	0.	0.	0.	0.094	0.	93.88	4.160
2.21	360.0	0.	0.	2.5039	0.	0.	0.	0.	0.126	0.	43.68	4.080
4.41	720.0	0.	0.	2.6437	0.	0.	0.	0.	0.187	0.	9.45	3.925
6.13	1000.0	0.	0.	2.6585	0.	0.	0.	0.	0.233	0.	2.87	3.808

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 4000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	0.08	100.00	0.44	46.59	32.22	15.84	4.92	44.33	55.67	52.61	47.39
0.09	15.0	0.08	100.00	0.45	46.60	32.22	15.81	4.92	45.42	54.58	51.06	48.94
0.18	30.0	0.08	100.00	0.47	46.61	32.23	15.78	4.92	46.46	53.54	49.50	50.50
0.28	45.0	0.08	100.00	0.48	46.62	32.24	15.75	4.92	47.47	52.53	47.95	52.05
0.37	60.0	0.08	100.00	0.49	46.63	32.25	15.72	4.92	48.43	51.57	46.40	53.60
0.55	90.0	0.08	100.00	0.51	46.65	32.26	15.66	4.92	50.25	49.75	43.33	56.67
0.74	120.0	0.08	100.00	0.53	46.67	32.28	15.59	4.92	51.94	48.06	40.30	59.70
0.92	150.0	0.08	100.00	0.55	46.70	32.30	15.53	4.93	53.51	46.49	37.35	62.65
1.10	180.0	0.08	100.00	0.56	46.72	32.31	15.47	4.93	54.97	45.03	34.49	65.51
2.21	360.0	0.08	100.00	0.62	46.88	32.43	15.13	4.95	62.04	37.96	19.98	80.02
4.41	720.0	0.08	100.00	0.66	47.23	32.68	14.48	4.98	70.83	29.17	5.32	94.68
6.13	1000.0	0.08	100.00	0.67	47.50	32.87	13.96	5.01	75.10	24.90	1.73	98.27

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 4000

EXPOSURE 24414.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.34 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED					
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237 AM241
		YIELD FACTOR	0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.
0.74	120.0	0.	750.66	917828.5	133.51	83.06	7306.7	5053.4	2441.5	771.0	0.
0.83	135.0	15.0	750.66	917828.5	133.51	83.03	7306.7	5053.4	2436.1	771.0	0.00
1.00	163.0	43.0	750.66	917828.5	133.51	82.98	7306.7	5053.4	2426.2	771.0	0.00
2.00	326.0	206.0	750.66	917828.5	133.51	82.70	7306.7	5053.4	2369.2	771.0	0.03
3.00	489.0	369.0	750.66	917828.5	133.51	82.41	7306.7	5053.4	2313.5	771.0	0.10
4.00	652.0	532.0	750.66	917828.5	133.51	82.12	7306.7	5053.4	2259.1	771.0	0.20
5.00	815.0	695.0	750.66	917828.5	133.51	81.84	7306.7	5053.4	2206.0	771.0	0.34
6.00	978.0	858.0	750.66	917828.5	133.51	81.55	7306.7	5053.4	2154.1	771.0	0.52
7.00	1141.0	1021.0	750.66	917828.5	133.51	81.27	7306.7	5053.4	2103.5	771.0	0.73

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
		YIELD FACTOR	0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	160.34	148.37	0.	0.	21.35	31.62	0.	0.
0.83	135.0	15.0	160.33	148.37	0.01	0.00	20.03	31.57	1.32	0.05
1.00	163.0	43.0	160.31	148.37	0.03	0.00	17.78	31.48	3.57	0.15
2.00	326.0	206.0	160.20	148.36	0.14	0.01	8.89	30.93	12.43	0.69
3.00	489.0	369.0	160.09	148.36	0.24	0.01	4.45	30.39	16.82	1.23
4.00	652.0	532.0	159.98	148.35	0.35	0.02	2.22	29.86	18.98	1.76
5.00	815.0	695.0	159.87	148.34	0.46	0.03	1.11	29.34	20.02	2.28
6.00	978.0	858.0	159.77	148.34	0.57	0.03	0.56	28.83	20.51	2.79
7.00	1141.0	1021.0	159.66	148.33	0.68	0.04	0.28	28.33	20.72	3.30

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 4000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	33.72	41235.25	6.00	3.73	328.27	227.04	109.69	34.64	0.	0.
0.83	135.0	15.0	33.72	41235.25	6.00	3.73	328.27	227.04	109.45	34.64	0.00	0.24
1.00	163.0	43.0	33.72	41235.25	6.00	3.73	328.27	227.04	109.00	34.64	0.00	0.69
2.00	326.0	206.0	33.72	41235.25	6.00	3.72	328.27	227.04	106.44	34.64	0.00	3.25
3.00	489.0	369.0	33.72	41235.25	6.00	3.70	328.27	227.04	103.94	34.64	0.00	5.75
4.00	652.0	532.0	33.72	41235.25	6.00	3.69	328.27	227.04	101.49	34.64	0.01	8.19
5.00	815.0	695.0	33.72	41235.25	6.00	3.68	328.27	227.04	99.11	34.64	0.02	10.56
6.00	978.0	858.0	33.72	41235.25	6.00	3.66	328.27	227.04	96.78	34.64	0.02	12.89
7.00	1141.0	1021.0	33.72	41235.25	6.00	3.65	328.27	227.04	94.50	34.64	0.03	15.15

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	7.20	6.67	0.	0.	0.04	1.42	0.	0.
0.83	135.0	15.0	7.20	6.67	0.00	0.0000	0.00	1.42	0.06	0.00
1.00	163.0	43.0	7.20	6.67	0.00	0.0001	0.00	1.41	0.16	0.01
2.00	326.0	206.0	7.20	6.67	0.01	0.0003	0.40	1.39	0.56	0.03
3.00	489.0	369.0	7.19	6.67	0.01	0.0006	0.20	1.37	0.76	0.06
4.00	652.0	532.0	7.19	6.66	0.02	0.0009	0.10	1.34	0.85	0.08
5.00	815.0	695.0	7.18	6.66	0.02	0.0011	0.05	1.32	0.90	0.10
6.00	978.0	858.0	7.18	6.66	0.03	0.0014	0.02	1.30	0.92	0.13
7.00	1141.0	1021.0	7.17	6.66	0.03	0.0017	0.01	1.27	0.93	0.15

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 4000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0125	0.0040	0.	0.
0.83	135.0	15.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0125	0.0040	0.0000	0.0000
1.00	163.0	43.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0124	0.0040	0.0000	0.0001
2.00	326.0	206.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0121	0.0040	0.0000	0.0004
3.00	489.0	369.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0119	0.0040	0.0000	0.0007
4.00	652.0	532.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0116	0.0040	0.0000	0.0009
5.00	815.0	695.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0113	0.0040	0.0000	0.0012
6.00	978.0	858.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0110	0.0040	0.0000	0.0015
7.00	1141.0	1021.0	0.0038	0.2590	0.0007	0.0004	-0.0640	0.0182	0.0108	0.0040	0.0000	0.0017

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0008	0.0008	0.	0.	0.0001	0.0002	0.	0.
0.83	135.0	15.0	0.0008	0.0008	0.0000	0.0000	0.0001	0.0002	0.0000	0.0000
1.00	163.0	43.0	0.0008	0.0008	0.0000	0.0000	0.0001	0.0002	0.0000	0.0000
2.00	326.0	206.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
3.00	489.0	369.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
4.00	652.0	532.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
5.00	815.0	695.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0002	0.0001	0.0000
6.00	978.0	858.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000
7.00	1141.0	1021.0	0.0008	0.0008	0.0000	0.0000	0.0000	0.0001	0.0001	0.0000

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 4000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	2.0897	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	2.0890	0.	0.	0.	0.	0.	0.003
1.00	163.0	43.0	0.	0.	0.	2.0878	0.	0.	0.	0.	0.	0.008
2.00	326.0	206.0	0.	0.	0.	2.0805	0.	0.	0.	0.	0.	0.036
3.00	489.0	369.0	0.	0.	0.	2.0733	0.	0.	0.	0.	0.	0.063
4.00	652.0	532.0	0.	0.	0.	2.0661	0.	0.	0.	0.	0.	0.090
5.00	815.0	695.0	0.	0.	0.	2.0590	0.	0.	0.	0.	0.	0.116
6.00	978.0	858.0	0.	0.	0.	2.0518	0.	0.	0.	0.	0.	0.142
7.00	1141.0	1021.0	0.	0.	0.	2.0447	0.	0.	0.	0.	0.	0.167

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.079	0.	0.	0.	115.11	3.978	0.	0.
0.83	135.0	15.0	0.079	0.	0.	0.	107.99	3.972	0.0332	0.
1.00	163.0	43.0	0.079	0.	0.	0.	95.87	3.960	0.0897	0.
2.00	326.0	206.0	0.079	0.	0.	0.	47.94	3.891	0.3124	0.
3.00	489.0	369.0	0.079	0.	0.	0.	23.98	3.823	0.4232	0.
4.00	652.0	532.0	0.079	0.	0.	0.	11.99	3.756	0.4775	0.
5.00	815.0	695.0	0.079	0.	0.	0.	6.00	3.691	0.5038	0.
6.00	978.0	858.0	0.079	0.	0.	0.	3.00	3.627	0.5160	0.
7.00	1141.0	1021.0	0.079	0.	0.	0.	1.50	3.563	0.5212	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 4000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.08	99.92	100.00	0.53	46.67	32.28	15.59	4.92	100.00	100.00
0.83	135.0	15.0	0.08	99.92	100.00	0.53	46.69	32.29	15.57	4.93	100.00	100.00
1.00	163.0	43.0	0.08	99.92	100.00	0.53	46.72	32.31	15.51	4.93	100.00	100.00
2.00	326.0	206.0	0.08	99.92	100.00	0.53	46.89	32.43	15.20	4.95	100.00	100.00
3.00	489.0	369.0	0.08	99.92	100.00	0.53	47.06	32.55	14.90	4.97	100.00	100.00
4.00	652.0	532.0	0.08	99.92	100.00	0.53	47.22	32.66	14.60	4.98	100.00	100.00
5.00	815.0	695.0	0.08	99.92	100.00	0.53	47.39	32.77	14.31	5.00	100.00	100.00
6.00	978.0	858.0	0.08	99.92	100.00	0.53	47.55	32.89	14.02	5.02	100.00	100.00
7.00	1141.0	1021.0	0.08	99.92	100.00	0.53	47.71	32.99	13.73	5.03	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	51.94	49.06	100.00	100.00	40.30	59.70	0.	0.
0.83	135.0	15.0	51.94	48.06	100.00	100.00	38.82	61.18	96.27	3.73
1.00	163.0	43.0	51.93	49.07	100.00	100.00	36.10	63.90	96.06	3.94
2.00	326.0	206.0	51.92	48.08	100.00	100.00	22.33	77.67	94.71	5.29
3.00	489.0	369.0	51.90	49.10	100.00	100.00	12.77	87.23	93.17	6.83
4.00	652.0	532.0	51.89	48.11	100.00	100.00	6.93	93.07	91.50	8.50
5.00	815.0	695.0	51.87	48.13	100.00	100.00	3.65	96.35	89.77	10.23
6.00	978.0	858.0	51.85	48.15	100.00	100.00	1.89	98.11	88.01	11.99
7.00	1141.0	1021.0	51.84	48.16	100.00	100.00	0.97	99.03	86.27	13.73

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 4000

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 150.0 GRAMS/TON.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 5000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24413.0	INITIAL FLUX, N/SO CM=SEC	9.32E 12	FISSILE RATIO	0.54	U235 IN TAILS/U235-ENR	0.01				
POWER DENS, MW/T	23.00	AVG FLUX, NEUT/SO CM=SEC	1.20E 13	INITIAL CONV RATIO	0.49	KG NATURAL/KG PRODUCED	1.025				
RESIDENCE TIME, YRS	3.34	MAX FLUX/MIN FLUX	1.61	NONFUEL X-SECT 1/CM	0.067	KG NAT U/MWE-YR	122,980				
TOTAL ENRICHMENT	2.99	AVG NEUTRON TEMP, C	365.	FUEL DENSITY	9.26	AVERAGE R	0.250				
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33								
KW/GRAMS FISSILE	0.67	WATTS/CC	185.12	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.				
INITIAL REACTIVITY	1.269	FINAL INTEGRATED REACTIVITY	1.083	FINAL REACTIVITY	0.958	REACTIVITY CHANGE/MWD,MK	0.0127				
ISOTOPES	WM232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	658	0	0	459	0	0.	935	0	947	0
AVERAGE	0.	672	0	0	477	0	0.	1010	0	1008	0
FINAL	0.	603	0	0	492	0	0.	1070	0	1055	0
ABSORPTION-INITIAL	45.24	744	297	195	577	143	12.96	1424	766	1298	325
AVERAGE	45.31	759	298	195	600	132	12.58	1552	767	1386	314
FINAL	45.38	772	299	195	619	126	12.32	1652	788	1454	305
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.074	0.	0.	0.384	0.	0.121	0.
AVERAGE	0.	0.000	0.	0.	0.054	0.	0.	0.279	0.	0.117	0.
FINAL	0.	0.000	0.	0.	0.037	0.	0.	0.208	0.	0.112	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.093	0.	0.287	0.585	0.161	0.165	0.026
AVERAGE	0.000	0.000	0.000	0.000	0.068	0.001	0.277	0.427	0.161	0.160	0.029
FINAL	0.000	0.000	0.000	0.000	0.047	0.002	0.269	0.321	0.153	0.154	0.031
ALPHA	0.	0.131	0.	0.	0.257	0.	0.	0.523	0.	0.371	0.
AVERAGE	0.	0.130	0.	0.	0.258	0.	0.	0.535	0.	0.375	0.
FINAL	0.	0.130	0.	0.	0.258	0.	0.	0.544	0.	0.378	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	11.3	0.	6.0	57.9	0.	24.8	0.
ETA	0.	2.21	0.	0.	1.94	0.	0.	1.88	0.	2.20	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	7.42	0.	1.80	2.90	37.65	29.22	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.297	0.	0.191	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 5000

ISOTOPES	WM232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	0.68	0.	0.	1.76	0.	0.55	0.
FINAL	0.	0.00	0.	0.	0.32	0.	0.	0.83	0.	0.46	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	0.7	0.	99.3	49.5	25.4	15.4	9.7
FINAL	100.0	0.0	100.0	0.0	0.3	0.1	99.6	32.7	32.5	17.8	17.0
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.0630	0.	8.7605	0.1631	0.0838	0.0510	0.0324
FINAL	0.0000	0.0000	0.0000	0.0001	0.0294	0.0063	8.6222	0.0772	0.0772	0.0425	0.0407
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	4.6	-1084.9	205.0	-4468.3	-2774.3	+213.7	-275.4	269.0
GM/MWE-YR	0.0	0.0	0.0	0.7	-162.7	30.7	-670.2	-416.1	-32.1	-41.3	40.3
GM/MWH	0.0000	0.0000	0.0000	0.0001	-0.0186	0.0035	-0.0765	-0.0475	-0.0037	-0.0047	0.0046
GM/TON	0.0	0.0	0.0	15.4	-3627.9	685.4	-14942.6	-9277.6	+714.7	-920.8	859.5
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	4.6	949.7	205.0	278569.	2494.8	2493.7	1372.9	1316.3
GM/MWE-YR	0.	0.0	0.0	0.7	142.5	30.7	41784.	374.	374.	206.	197.
GM/TON	0.	0.0	0.0	15.4	3176.0	685.4	931567.	8343.0	8339.2	4591.2	4401.9

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24413.0 INITIAL ENRICH. 2.99 POWER DENS. MW/T 47.70 AV. NEUTRON TEMPERATURE, C 365.
 RESIDENCE TIME, YRS 3.34 AVERAGE R 0.250 K4/GRAMS FISSILE 0.67 AVERAGE FLUX, NFUT/SQ CM-SEC 1.20E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSION CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	21.37	20.17	17.27	IN TH-232	0.00	0.00	0.00
FROM PU-239	131.38	122.38	114.96	IN U-234	0.01	0.01	0.01
FROM PU-241	43.35	53.90	64.97	IN U-238	30.34	39.68	41.73
TOTAL	196.10	196.44	197.20	IN PU-240	17.01	23.12	23.69
NET FROM U-238	7.07	7.07	7.07	TOTAL	47.35	62.80	65.43
NET FROM U-238	0.	0.	0.	NON-FERTILE CAPTURE			
TOTAL	203.17	203.51	204.27	IN U-236	-0.	0.17	0.32
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				IN PU-242	2.77	4.12	4.80
IN U-233	-0.	0.00	0.00	IN SPECIAL PRODUCTS	0.68	3.32	5.22
IN U-235	8.78	8.29	7.09	TOTAL	3.45	7.61	10.34
IN PU-239	45.54	42.45	39.85	NON-FUEL ABSORPTION + LEAKAGE			
IN PU-241	14.31	17.79	21.44	IN SM + XE	3.64	4.95	5.36
TOTAL	68.62	68.52	68.38	IN OTHER F.P.	0.	7.87	11.28
AS CAPTURE FORMING FERTILE ISOTOPES				IN STRUCT. + MOD. + IMPUR.	3.44	4.68	5.06
IN U-233	-0.	0.00	0.00	CONTROL + LEAKAGE	15.58	15.60	15.66
IN PU-239	23.82	22.68	21.67	TOTAL	22.66	33.10	32.35
TOTAL	23.82	22.68	21.67	NEUTRONS INTO OR FROM OTHER FUEL	29.71	0.	-8.85
AS CAPTURE FORMING NON-FERTILE ISOTOPES				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN U-235	2.26	2.13	1.83	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
IN PU-241	5.30	6.66	8.11	TOTAL ABSORPTION + LEAKAGE	203.17	203.51	204.27
TOTAL	7.56	8.80	9.94	FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	47.35	62.80	65.43
TOTAL FISSION ABSORPTION	100.00	100.00	100.00				

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 5000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	241	1542	517	6556	16	1148	12	366	0
AVERAGE	241	1378	513	6605	16	1156	12	368	0
FINAL	241	1362	508	6666	17	1167	13	372	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.006	-0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.006	0.
FINAL	0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.9942	0.
FINAL	0.1622	1.5773	2.1238	0.0127	0.1341	0.0002	0.1159	6.4884	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	42.7	57.0	0.3	53.8	0.1	46.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0161	0.0000	0.0003	0.0036	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	25.6	248.8	335.0	2.0	21.1	0.0	18.3	-79.8	-0.
GM/MWE-YR	3.84	37.32	50.25	0.30	3.17	0.00	2.74	-11.97	-0.
GM/MWH	0.0004	0.0043	0.0057	0.0000	0.0004	0.0000	0.0003	-0.0014	-0.
GM/TON	17.5	170.4	229.5	1.4	14.5	0.0	12.5	-54.6	-0.
WATTS/MWE-YR	0.	4.1	0.4	0.0	380.7	0.0	7.7	-4.7	0.

EXPOSURE 10000.0 MWD/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 5000		
ISOTOPES:		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE:		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		241	1542	517	6556	16	1148	12	366	0
AVERAGE		241	1371	508	6659	16	1165	12	371	0
FINAL		241	1368	499	6768	17	1185	13	377	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.006	-0.
AVERAGE		0.000	0.005	0.003	0.000	0.000	0.000	0.000	0.006	0.
FINAL		0.000	0.009	0.005	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/GC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.9942	0.
FINAL		0.3625	2.6397	4.3170	0.0320	0.3865	0.0010	0.4918	6.1841	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL		100.0	38.0	61.6	0.5	44.2	0.1	55.7	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0003	0.0000	0.0000	0.0464	0.0000	0.0014	0.0035	0.
NET ISOTOPIC PRODUCTION										
GM/TON=VR		28.6	208.2	340.5	2.5	30.5	0.1	38.8	-63.9	-0.
GM/MWE=VR		4.29	31.23	51.07	0.38	4.57	0.01	5.82	-9.58	-0.
GM/MWH		0.0005	0.0036	0.0058	0.0000	0.0005	0.0000	0.0007	-0.0011	-0.
GM/TON		39.2	285.2	466.4	3.5	41.8	0.1	53.1	-87.5	-0.
WATTS/MWE=VR		0.	3.4	0.4	0.0	548.7	0.0	16.3	-5.4	0.

EXPOSURE 15000.0 MWD/Y		*** PROPERTIES OF SPECIAL PRODUCTS ***					CASE NUMBER 5000			
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		241	1542	517	6556	16	1148	12	366	0
AVERAGE		241	1371	504	6709	16	1174	12	374	0
FINAL		241	1377	491	6862	17	1201	13	382	0
MACROSCOPIC CROSS SECTION										
ABSORPTION=INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.006	-0.
AVERAGE		0.000	0.007	0.004	0.000	0.000	0.000	0.000	0.006	0.
FINAL		0.000	0.011	0.008	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/GC										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.9942	0.
FINAL		0.6005	3.2679	6.5763	0.0464	0.6461	0.0028	1.1736	6.1170	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL		100.0	33.2	66.3	0.5	35.6	0.2	64.2	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0004	0.0000	0.0000	0.0775	0.0000	0.0033	0.0034	0.
NET ISOTOPIC PRODUCTION										
GM/TON=VR		31.6	171.8	345.8	2.4	34.0	0.1	61.7	-46.1	-0.
GM/MWE=VR		4.74	25.77	51.87	0.37	5.10	0.02	9.26	-6.92	-0.
GM/MWH		0.0005	0.0029	0.0059	0.0000	0.0006	0.0000	0.0011	-0.0008	-0.
GM/TON		64.9	353.1	710.5	5.0	69.8	0.3	126.8	-94.8	-0.
WATTS/MWE=VR		0.	2.8	0.4	0.0	611.5	0.0	25.9	-3.9	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 5000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1542	517	6556	16	1148	12	366	0
AVERAGE	241	1373	500	6757	16	1182	12	376	0
FINAL	242	1387	483	6945	17	1216	13	387	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.006	-0.
AVERAGE	0.000	0.008	0.005	0.000	0.000	0.000	0.000	0.006	0.
FINAL	0.001	0.012	0.011	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.9942	0.
FINAL	0.8732	3.5452	8.8840	0.0542	0.8687	0.0051	2.2087	6.2513	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	28.6	71.0	0.4	28.3	0.2	71.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0004	0.0001	0.0000	0.1042	0.0000	0.0062	0.0035	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	34.4	139.8	350.3	2.1	34.3	0.2	87.1	-29.3	-0.
GM/MWE=YR	5.17	20.97	52.55	0.32	5.14	0.03	13.07	-4.39	-0.
GM/MWH	0.0006	0.0024	0.0060	0.0000	0.0006	0.0000	0.0019	-0.0005	-0.
GM/TON	94.3	383.0	959.9	5.9	93.9	0.6	238.6	-80.3	-0.
WATTS/MWE=YR	0.	2.3	0.4	0.0	616.6	0.0	36.6	-2.5	0.

EXPOSURE 24413.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 5000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	241	1542	517	6556	16	1148	12	366	0
AVERAGE	241	1376	496	6796	16	1189	12	378	0
FINAL	242	1396	476	7008	18	1227	13	390	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.006	-0.
AVERAGE	0.000	0.009	0.006	0.001	0.000	0.000	0.000	0.006	0.
FINAL	0.001	0.012	0.013	0.001	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	6.9942	0.
FINAL	1.1396	3.5680	10.9417	0.0565	1.0189	0.0075	3.4504	6.4805	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	24.6	75.0	0.4	22.9	0.2	76.9	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0004	0.0001	0.0000	0.1223	0.0000	0.0097	0.0036	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	36.8	115.3	353.5	1.8	32.9	0.2	111.5	-16.6	-0.
GM/MWE=YR	5.52	17.29	53.02	0.27	4.94	0.04	16.72	-2.49	-0.
GM/MWH	0.0006	0.0020	0.0061	0.0000	0.0006	0.0000	0.0019	-0.0003	-0.
GM/TON	123.1	383.5	1182.2	6.1	110.1	0.8	372.8	-55.5	-0.
WATTS/MWE=YR	0.	1.9	0.4	0.0	592.5	0.1	46.8	-1.4	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 5000

EXPOSURE 24413.0 MWD/T
THERMAL TO ELECTRICAL EFF,

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.34 YRS,

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
0.	0.	685.40	123.12	700.17	8343.0	8339.2	4591.2	4401.9	385.49	1182.17
0.09	15.0	685.40	123.14	706.75	8343.0	8339.8	4581.1	4401.9	395.51	1182.16
0.18	30.0	685.40	123.17	712.90	8343.0	8340.4	4571.1	4401.9	405.50	1182.16
0.28	45.0	685.40	123.19	718.66	8343.0	8341.0	4561.1	4401.9	415.47	1182.15
0.37	60.0	685.40	123.22	724.05	8343.0	8341.6	4551.1	4401.9	425.42	1182.15
0.55	90.0	685.40	123.28	733.79	8343.0	8342.8	4531.3	4401.9	445.25	1182.14
0.74	120.0	685.40	123.33	742.31	8343.1	8344.0	4511.5	4401.9	464.99	1182.13
0.92	150.0	685.40	123.39	749.75	8343.1	8345.2	4491.8	4401.9	484.64	1182.12
1.10	180.0	685.40	123.45	756.24	8343.1	8346.3	4472.1	4401.9	504.21	1182.11
2.21	360.0	685.40	123.87	780.67	8343.1	8353.4	4356.2	4401.9	619.74	1182.06
4.41	720.0	685.40	124.96	793.28	8343.2	8367.0	4133.2	4401.9	841.62	1181.96
6.13	1080.0	685.40	126.03	792.14	8343.3	8377.3	3967.7	4401.9	1006.05	1181.87

*** GM/MWE-YEAR ***

0.	0.	30.794	5.532	31.458	374.84	374.67	206.28	197.77	17.320	53.113
0.09	15.0	30.794	5.533	31.753	374.84	374.70	205.83	197.77	17.770	53.113
0.18	30.0	30.794	5.534	32.030	374.84	374.72	205.37	197.77	18.210	53.113
0.28	45.0	30.794	5.535	32.288	374.84	374.75	204.93	197.77	18.667	53.113
0.37	60.0	30.794	5.536	32.530	374.84	374.78	204.48	197.77	19.114	53.113
0.55	90.0	30.794	5.539	32.968	374.84	374.83	203.58	197.77	20.005	53.112
0.74	120.0	30.794	5.541	33.351	374.84	374.88	202.69	197.77	20.892	53.112
0.92	150.0	30.794	5.544	33.685	374.84	374.94	201.81	197.77	21.774	53.111
1.10	180.0	30.794	5.547	33.977	374.84	374.99	200.93	197.77	22.653	53.111
2.21	360.0	30.794	5.565	35.075	374.85	375.31	195.72	197.77	27.844	53.109
4.41	720.0	30.794	5.614	35.641	374.85	375.92	185.70	197.77	37.813	53.104
6.13	1080.0	30.794	5.663	35.590	374.86	376.38	178.26	197.77	45.201	53.100

GRADED FINAL K 1.083

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 5000

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWH ***										
0.	0.	0.0035	0.0006	-0.0003	-0.0476	-0.0037	-0.0047	0.0046	0.0020	0.0061
0.09	15.0	0.0035	0.0006	-0.0003	-0.0476	-0.0037	-0.0048	0.0046	0.0020	0.0061
0.18	30.0	0.0035	0.0006	-0.0002	-0.0476	-0.0037	-0.0048	0.0046	0.0021	0.0061
0.28	45.0	0.0035	0.0006	-0.0002	-0.0476	-0.0037	-0.0049	0.0046	0.0021	0.0061
0.37	60.0	0.0035	0.0006	-0.0002	-0.0476	-0.0037	-0.0049	0.0046	0.0022	0.0061
0.55	90.0	0.0035	0.0006	-0.0001	-0.0476	-0.0036	-0.0050	0.0046	0.0023	0.0061
0.74	120.0	0.0035	0.0006	-0.0001	-0.0476	-0.0036	-0.0051	0.0046	0.0024	0.0061
0.92	150.0	0.0035	0.0006	-0.0000	-0.0476	-0.0036	-0.0052	0.0046	0.0025	0.0061
1.10	180.0	0.0035	0.0006	0.0000	-0.0476	-0.0036	-0.0053	0.0046	0.0026	0.0061
2.21	360.0	0.0035	0.0006	0.0001	-0.0476	-0.0036	-0.0059	0.0046	0.0032	0.0061
4.41	720.0	0.0035	0.0006	0.0002	-0.0476	-0.0035	-0.0071	0.0046	0.0043	0.0061
6.13	1080.0	0.0035	0.0006	0.0002	-0.0475	-0.0035	-0.0079	0.0046	0.0052	0.0061

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	17.6164	0.	0.	0.	0.	0.191	0.
0.09	15.0	0.	0.	17.7818	0.	0.	0.	0.	0.195	0.
0.18	30.0	0.	0.	17.9367	0.	0.	0.	0.	0.200	0.
0.28	45.0	0.	0.	18.0816	0.	0.	0.	0.	0.205	0.
0.37	60.0	0.	0.	18.2171	0.	0.	0.	0.	0.210	0.
0.55	90.0	0.	0.	18.4624	0.	0.	0.	0.	0.220	0.
0.74	120.0	0.	0.	18.6767	0.	0.	0.	0.	0.230	0.
0.92	150.0	0.	0.	18.8638	0.	0.	0.	0.	0.240	0.
1.10	180.0	0.	0.	19.0270	0.	0.	0.	0.	0.249	0.
2.21	360.0	0.	0.	19.6418	0.	0.	0.	0.	0.306	0.
4.41	720.0	0.	0.	19.9591	0.	0.	0.	0.	0.416	0.
6.13	1080.0	0.	0.	19.9303	0.	0.	0.	0.	0.497	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 5000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

TIME AFTER REACTOR DISCHARGE UNITS OF 0.45 YEAR HALF-LIFE	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
0.	0.	0.07	100.00	2.65	31.63	31.62	17.41	16.69	24.59	75.41	22.80	77.20
0.09	15.0	0.07	100.00	2.68	31.64	31.62	17.37	16.69	25.07	74.93	21.72	78.28
0.18	30.0	0.07	100.00	2.70	31.64	31.63	17.34	16.69	25.54	74.46	20.68	79.32
0.28	45.0	0.07	100.00	2.73	31.64	31.64	17.30	16.70	26.01	73.99	19.68	80.32
0.37	60.0	0.07	100.00	2.75	31.65	31.64	17.26	16.70	26.46	73.54	18.72	81.28
0.55	90.0	0.07	100.00	2.78	31.66	31.64	17.19	16.70	27.36	72.64	16.90	83.10
0.74	120.0	0.07	100.00	2.82	31.67	31.67	17.13	16.71	28.23	71.77	15.23	84.77
0.92	150.0	0.07	100.00	2.85	31.68	31.69	17.06	16.72	29.08	70.92	13.69	86.31
1.10	180.0	0.07	100.00	2.87	31.70	31.71	16.99	16.72	29.90	70.10	12.29	87.71
2.21	360.0	0.07	100.00	2.98	31.80	31.84	16.69	16.78	34.40	65.60	6.23	93.77
4.41	720.0	0.07	100.00	3.05	32.04	32.13	15.87	16.91	41.59	58.41	1.47	98.53
6.13	1080.0	0.07	100.00	3.06	32.24	32.37	15.33	17.01	45.98	54.02	0.47	99.53

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 5000

EXPOSURE 24413.0 MWD/Y POWER DENS 25.00 MW/Y RESIDENCE TIME 3.34 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM RECOVERED, % U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED, % PU238 PU239 PU240 PU241 PU242 NP237 AM241
			YIELD FACTOR 0.970 0.970	0.950	0.970 0.970 0.970 0.970 0.970 0. 0.
0.74	120.0	0.	664.83 906717.7	117.17	720.04 8092.8 8093.7 4376.1 4269.8 0. 0.
0.83	135.0	15.0	664.83 906717.7	117.17	719.81 8092.8 8093.7 4366.6 4269.8 0.00 9.57
1.00	163.0	43.0	664.83 906717.7	117.17	719.38 8092.8 8093.7 4348.7 4269.8 0.00 27.38
2.00	326.0	206.0	664.83 906717.7	117.17	716.89 8092.8 8093.7 4246.5 4269.8 0.06 129.56
3.00	489.0	369.0	664.83 906717.7	117.17	714.48 8092.8 8093.7 4146.7 4269.8 0.18 229.27
4.00	652.0	532.0	664.83 906717.7	117.17	711.92 8092.8 8093.7 4049.2 4269.8 0.36 326.56
5.00	815.0	695.0	664.83 906717.7	117.17	709.45 8092.8 8093.7 3954.0 4269.8 0.62 421.50
6.00	978.0	858.0	664.83 906717.7	117.17	706.99 8092.8 8093.7 3861.1 4269.8 0.93 514.14
7.00	1141.0	1021.0	664.83 906717.7	117.17	704.54 8092.8 8093.7 3770.3 4269.8 1.31 604.53

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED, % AM241 AM243 NP237 PU239	CURIUM RECOVERED, % CM242 CM244 PU238 PU240
			YIELD FACTOR 0.950 0.950 0. 0.	0.950 0.950 0. 0.
0.74	120.0	0.	441.741123.02 0. 0.	62.79 349.59 0. 0.
0.83	135.0	15.0	441.721123.02 0.03 0.00	58.91 349.03 3.88 0.56
1.00	163.0	43.0	441.661123.01 0.08 0.01	52.30 347.98 10.49 1.62
2.00	326.0	206.0	441.371122.97 0.38 0.06	26.15 341.92 36.55 7.68
3.00	489.0	369.0	441.071122.92 0.67 0.10	13.08 335.26 49.47 13.63
4.00	652.0	532.0	440.771122.88 0.97 0.15	6.54 330.11 55.82 19.49
5.00	815.0	695.0	440.471122.83 1.27 0.19	3.27 324.36 58.89 25.24
6.00	978.0	858.0	440.181122.79 1.57 0.24	1.64 318.71 60.32 30.89
7.00	1141.0	1021.0	439.881122.74 1.86 0.28	0.82 313.16 60.93 36.44

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 5000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	29.87	40737.74	5.26	32.35	363.60	363.64	196.61	191.84	0.	0.
0.83	135.0	15.0	29.87	40737.74	5.26	32.34	363.60	363.64	196.18	191.84	0.00	0.43
1.00	163.0	43.0	29.87	40737.74	5.26	32.32	363.60	363.64	195.38	191.84	0.00	1.25
2.00	326.0	206.0	29.87	40737.74	5.26	32.21	363.60	363.64	190.79	191.84	0.00	5.82
3.00	489.0	369.0	29.87	40737.74	5.26	32.10	363.60	363.64	186.31	191.84	0.01	10.30
4.00	652.0	532.0	29.87	40737.74	5.26	31.99	363.60	363.64	181.93	191.84	0.02	14.67
5.00	815.0	695.0	29.87	40737.74	5.26	31.87	363.60	363.64	177.65	191.84	0.03	18.94
6.00	978.0	858.0	29.87	40737.74	5.26	31.76	363.60	363.64	173.47	191.84	0.04	23.10
7.00	1141.0	1021.0	29.87	40737.74	5.26	31.65	363.60	363.64	169.39	191.84	0.06	27.16

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PL240
0.74	120.0	0.	19.85	50.46	0.	0.	2.82	15.71	0.	0.
0.83	135.0	15.0	19.85	50.46	0.00	0.0002	2.65	15.68	0.17	0.03
1.00	163.0	43.0	19.84	50.46	0.00	0.0005	2.35	15.63	0.47	0.07
2.00	326.0	206.0	19.83	50.45	0.02	0.0026	1.18	15.36	1.64	0.34
3.00	489.0	369.0	19.82	50.45	0.03	0.0046	0.59	15.09	2.22	0.61
4.00	652.0	532.0	19.80	50.45	0.04	0.0067	0.29	14.83	2.51	0.88
5.00	815.0	695.0	19.79	50.45	0.06	0.0087	0.15	14.57	2.65	1.13
6.00	978.0	858.0	19.78	50.45	0.07	0.0107	0.07	14.32	2.71	1.39
7.00	1141.0	1021.0	19.76	50.44	0.08	0.0128	0.04	14.07	2.74	1.64

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 5000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0058	0.0039	0.	0.
0.83	135.0	15.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0059	0.0039	0.0000	0.0000
1.00	163.0	43.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0060	0.0039	0.0000	0.0001
2.00	326.0	206.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0065	0.0039	0.0000	0.0007
3.00	489.0	369.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0070	0.0039	0.0000	0.0012
4.00	652.0	532.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0075	0.0039	0.0000	0.0017
5.00	815.0	695.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0080	0.0039	0.0000	0.0022
6.00	978.0	858.0	0.0034	=0.2388	0.0006	-0.0002	-0.0488	-0.0049	-0.0085	0.0039	0.0000	0.0026
7.00	1141.0	1021.0	0.0034	=0.2388	0.0006	-0.0003	-0.0488	-0.0049	-0.0089	0.0039	0.0000	0.0031

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0023	0.0058	0.	0.	0.0003	0.0018	0.	0.
0.83	135.0	15.0	0.0023	0.0058	0.0000	0.0000	0.0003	0.0018	0.0000	0.0000
1.00	163.0	43.0	0.0023	0.0058	0.0000	0.0000	0.0003	0.0018	0.0001	0.0000
2.00	326.0	206.0	0.0023	0.0058	0.0000	0.0000	0.0001	0.0018	0.0002	0.0000
3.00	489.0	369.0	0.0023	0.0058	0.0000	0.0000	0.0001	0.0017	0.0003	0.0001
4.00	652.0	532.0	0.0023	0.0058	0.0000	0.0000	0.0000	0.0017	0.0003	0.0001
5.00	815.0	695.0	0.0023	0.0058	0.0000	0.0000	0.0000	0.0017	0.0003	0.0001
6.00	978.0	858.0	0.0023	0.0058	0.0000	0.0000	0.0000	0.0016	0.0003	0.0002
7.00	1141.0	1021.0	0.0023	0.0058	0.0000	0.0000	0.0000	0.0016	0.0003	0.0002

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 5000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	18.1164	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	18.1106	0.	0.	0.	0.	0.	0.005
1.00	163.0	43.0	0.	0.	0.	18.0998	0.	0.	0.	0.	0.	0.014
2.00	326.0	206.0	0.	0.	0.	18.0370	0.	0.	0.	0.	0.	0.064
3.00	489.0	369.0	0.	0.	0.	17.9744	0.	0.	0.	0.	0.	0.113
4.00	652.0	532.0	0.	0.	0.	17.9121	0.	0.	0.	0.	0.	0.161
5.00	815.0	695.0	0.	0.	0.	17.8500	0.	0.	0.	0.	0.	0.208
6.00	978.0	858.0	0.	0.	0.	17.7880	0.	0.	0.	0.	0.	0.254
7.00	1141.0	1021.0	0.	0.	0.	17.7263	0.	0.	0.	0.	0.	0.299

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.218	0.	0.	0.	338.54	43.979	0.	0.
0.83	135.0	15.0	0.218	0.	0.	0.	317.62	43.908	0.0676	0.
1.00	163.0	43.0	0.218	0.	0.	0.	281.98	43.776	0.2632	0.
2.00	326.0	206.0	0.218	0.	0.	0.	141.01	43.013	0.9195	0.
3.00	489.0	369.0	0.218	0.	0.	0.	70.51	42.264	1.2446	0.
4.00	652.0	532.0	0.218	0.	0.	0.	35.26	41.528	1.4645	0.
5.00	815.0	695.0	0.218	0.	0.	0.	17.63	40.805	1.4617	0.
6.00	978.0	858.0	0.218	0.	0.	0.	8.82	40.094	1.5177	0.
7.00	1141.0	1021.0	0.217	0.	0.	0.	4.41	39.395	1.5329	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 5000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.07	99.93	100.00	2.82	31.67	31.67	17.13	16.71	100.00	100.00
0.83	135.0	15.0	0.07	99.93	100.00	2.82	31.68	31.69	17.10	16.72	100.00	100.00
1.00	163.0	43.0	0.07	99.93	100.00	2.82	31.71	31.71	17.04	16.73	100.00	100.00
2.00	326.0	206.0	0.07	99.93	100.00	2.82	31.84	31.84	16.71	16.80	100.00	100.00
3.00	489.0	369.0	0.07	99.93	100.00	2.82	31.97	31.97	16.38	16.87	100.00	100.00
4.00	652.0	532.0	0.07	99.93	100.00	2.82	32.09	32.10	16.06	16.93	100.00	100.00
5.00	815.0	695.0	0.07	99.93	100.00	2.82	32.22	32.22	15.74	17.00	100.00	100.00
6.00	978.0	858.0	0.07	99.93	100.00	2.83	32.34	32.34	15.43	17.06	100.00	100.00
7.00	1141.0	1021.0	0.07	99.93	100.00	2.83	32.46	32.46	15.12	17.13	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	28.23	71.77	100.00	100.00	15.23	84.77	0.	0.
0.83	135.0	15.0	28.23	71.77	100.00	100.00	14.44	85.56	87.29	12.71
1.00	163.0	43.0	28.23	71.77	100.00	100.00	13.07	86.93	86.64	13.36
2.00	326.0	206.0	28.21	71.79	100.00	100.00	7.11	92.89	82.64	17.36
3.00	489.0	369.0	28.20	71.80	100.00	100.00	3.75	96.25	78.39	21.61
4.00	652.0	532.0	28.19	71.81	100.00	100.00	1.94	98.06	74.13	25.87
5.00	815.0	695.0	28.18	71.82	100.00	100.00	1.00	99.00	70.00	30.00
6.00	978.0	858.0	28.16	71.84	100.00	100.00	0.51	99.49	66.14	33.86
7.00	1141.0	1021.0	28.15	71.85	100.00	100.00	0.26	99.74	62.58	37.42

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 5000

A = NP237

B = AM241

C = AM243

D = AM242

E = CM242

F = CM243

G = CM244

H = PU238

I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 1200.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 6000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/T	24193.0	INITIAL FLUX,N/SQ CM*SEC		1.06E 13	FISSILE RATIO		0.05	U235 IN TAILS/U235 ENR		0.	
POWER DENS, MW/T	25.00	AVG FLUX,NEUT/SQ CM*SEC		3.13E 13	INITIAL CONV RATIO		0.19	KG NATURAL/KG PRODUCED		0.	
RESIDENCE TIME, YRS	3.31	MAX FLUX/MIN FLUX		14.04	NONFUEL X-SECT 1/CM		0.065	KG NAT U/MWE-YR		207.720	
TOTAL ENRICHMENT	2.44	AVG NEUTRON TEMP, C		370	FUEL DENSITY		9.26	AVERAGE R		0.250	
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33							
KW/GRAMS FISSILE	0.82	WATTS/CC		185.12	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.	
INITIAL REACTIVITY	1.507	FINAL INTEGRATED REACTIVITY		1.083	FINAL REACTIVITY		0.612	REACTIVITY CHANGE/MWD,MK		0.0370	
ISOTOPES											
	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	662	0	0	474	0	0	948	0	968	0
AVERAGE	0.	714	0	0	527	0	0	1264	0	1191	0
FINAL	0.	741	0	0	550	0	0	1426	0	1307	0
ABSORPTION-INITIAL	44.79	749	298	205	601	139	118.93	1448	880	1331	394
AVERAGE	45.75	806	302	214	663	140	119.92	1985	1232	1656	350
FINAL	46.62	836	308	221	694	142	121.65	2266	2455	1830	340
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.	0.	0.	0.458	0.	0.082	0.
AVERAGE	0.	0.000	0.	0.	0.000	0.	0.	0.103	0.	0.086	0.
FINAL	0.	0.000	0.	0.	0.000	0.	0.	0.003	0.	0.035	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.	0.	0.	0.700	0.155	0.113	0.009
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.159	0.109	0.120	0.019
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.024	0.049	0.023
ALPHA											
INITIAL	0.	0.131	0.	0.	0.268	0.	0.	0.527	0.	0.375	0.
AVERAGE	0.	0.129	0.	0.	0.258	0.	0.	0.569	0.	0.390	0.
FINAL	0.	0.128	0.	0.	0.256	0.	0.	0.589	0.	0.400	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	0.0	0.	0.0	36.3	0.	63.7	0.
ETA	0.	2.22	0.	0.	1.93	0.	0.	1.84	0.	2.18	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	0.	0.	0.	1.29	3.72	10.60	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.191	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 6000

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	0.	0.	0.	2.07	0.	0.37	0.
FINAL	0.	0.00	0.	0.	0.00	0.	0.	0.01	0.	0.11	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	0.	0.	0.	62.9	22.9	11.0	3.1
FINAL	100.0	0.0	100.0	60.1	18.1	21.8	0.1	1.8	9.0	24.9	64.3
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.	0.	0.	0.1917	0.0701	0.0339	0.0095
FINAL	0.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0008	0.0038	0.0106	0.0276
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.5	0.5	0.6	0.0	-6224.8	-2161.6	-759.1	588.2
GM/MWE-YR	0.0	0.0	0.0	0.2	0.1	0.1	0.0	-933.7	-324.2	-113.9	88.2
GM/MMH	0.8000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.1066	-0.0370	-0.0130	0.0101
GM/TON	0.0	0.0	0.0	5.1	1.5	1.9	0.0	-20628.9	-7163.6	-2515.6	1949.1
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.5	0.5	0.6	0.	25.0	124.8	346.9	898.2
GM/MWE-YR	0.	0.0	0.0	0.2	0.1	0.1	0.	4.	19.	52.	135.
GM/TON	0.	0.0	0.0	5.1	1.5	1.9	0.	82.9	413.5	1149.5	2976.7

GRADED BURNUP:

NEUTRON BALANCE

CASE NO. 6000

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

EXPOSURE, MWD/TON 24193.0 INITIAL ENRICH, 2.44 POWER DENS, MW/T 44.00 AV. NEUTRON TEMPERATURE, °C 370.
 RESIDENCE TIME, YRS 3.31 AVERAGE R 0.250 KW/GRAMS FISSILE 0.82 AVERAGE FLUX, NEUT/SQ CM=SEC 3.13E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	-0.	0.01	0.09				
FROM PU-239	162.64	104.76	14.99	FERTILE CAPTURE			
FROM PU-241	30.61	93.80	198.44	IN TH-232	-0.	0.00	0.00
TOTAL	193.25	198.58	213.52	IN U-234	-0.	0.01	0.05
				IN U-238	-0.	0.00	0.00
NET FROM U-238	-0.	0.00	0.00	IN PU-240	16.08	38.82	40.92
NET FROM U-238	0.	0.	0.	TOTAL	16.08	38.82	40.97
TOTAL	193.25	198.58	213.52				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.00	0.01
IN U-235	-0.	0.00	0.04	IN PU-242	0.97	6.95	40.46
IN PU-239	56.38	36.79	5.19	IN SPECIAL PRODUCTS	0.32	5.94	36.80
IN PU-241	10.10	30.98	65.49	TOTAL	1.29	12.90	77.28
TOTAL	66.48	67.78	70.72				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	3.34	11.48	55.81
IN U-235	-0.	0.00	0.00	IN OTHER F.P.	0.	8.54	1.82
IN PU-239	29.73	20.16	3.06	IN STRUCT. + MOD. + IMPUR.	3.39	11.64	56.58
IN PU-241	29.73	20.16	3.06	CONTROL + LEAKAGE	14.80	15.21	16.35
TOTAL	29.73	20.16	3.06	TOTAL	21.52	46.86	130.57
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL	54.35	0.	135.29
IN U-235	-0.	0.00	0.01	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	3.79	12.06	26.21	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	3.79	12.06	26.22	TOTAL ABSORPTION + LEAKAGE	193.25	198.58	213.52
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE = (PA-233 + NP-239 NON-FERTILE CAPTURE)	16.08	38.82	40.97

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 6000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP +0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	248	1604	517	6762	17	1184	13	363	0
AVERAGE	248	1432	515	6864	17	1202	13	370	0
FINAL	250	1427	514	6993	17	1224	13	379	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	0.
AVERAGE	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.004	0.001	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.3730	-0.
FINAL	0.0007	1.0748	0.9994	0.0100	0.1178	0.0002	0.0647	3.0936	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	51.8	47.7	0.5	64.7	0.1	35.2	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0141	0.0000	0.0002	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	0.1	169.5	157.6	1.6	18.6	0.0	10.2	44.1	-0.
GM/MWE-YR	0.02	25.43	23.65	0.24	2.79	0.00	1.53	6.61	-0.
GM/MWH	0.0000	0.0029	0.0027	0.0000	0.0003	0.0000	0.0002	0.0008	-0.
GM/TON	0.1	115.1	108.0	1.1	12.7	0.0	7.0	30.2	-0.
WATTS/MWE-YR	0.	2.8	0.2	0.0	334.5	0.0	4.3	3.7	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 6000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	248	1604	517	6762	17	1184	13	363	0
AVERAGE	249	1438	513	6982	17	1222	13	377	0
FINAL	253	1469	509	7232	18	1266	14	394	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	0.
AVERAGE	0.000	0.003	0.001	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.006	0.003	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.3730	-0.
FINAL	0.0025	1.7474	2.4215	0.0242	0.3935	0.0014	0.3484	2.9498	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	41.9	57.5	0.6	53.1	0.2	46.7	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0472	0.0000	0.0010	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	0.2	137.8	191.0	1.9	31.0	0.1	27.5	-33.4	-0.
GM/MWE=YR	0.03	20.67	28.65	0.29	4.66	0.02	4.12	-5.01	-0.
GM/MMH	0.0000	0.0024	0.0033	0.0000	0.0005	0.0000	0.0005	-0.0006	-0.
GM/TON	0.3	188.8	261.6	2.6	42.5	0.1	37.6	-45.7	-0.
WATTS/MWE=YR	0.	2.3	0.2	0.0	558.7	0.0	11.5	-2.8	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 6000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	248	1604	517	6762	17	1184	13	363	0
AVERAGE	251	1456	511	7101	17	1243	13	385	0
FINAL	253	1528	503	7470	19	1308	14	410	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	0.
AVERAGE	0.000	0.005	0.002	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.007	0.006	0.001	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.3730	-0.
FINAL	0.0048	1.8410	4.6680	0.0302	0.7767	0.0047	1.1736	2.9779	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	28.3	71.2	0.5	39.9	0.2	59.8	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0002	0.0000	0.0000	0.0932	0.0000	0.0033	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	0.3	98.8	245.4	1.6	40.8	0.2	61.7	-20.8	-0.
GM/MWE=YR	0.04	14.52	36.82	0.24	6.13	0.04	9.26	-3.12	-0.
GM/MMH	0.0000	0.0017	0.0042	0.0000	0.0007	0.0000	0.0011	-0.0004	-0.
GM/TON	0.5	198.9	504.3	3.3	83.9	0.5	126.8	-42.7	-0.
WATTS/MWE=YR	0.	1.6	0.3	0.0	735.1	0.1	25.9	-1.7	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 6000

ISOTOPE	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	248	1604	517	6762	17	1184	13	363	0
AVERAGE	252	1482	507	7219	18	1263	13	393	0
FINAL	258	1598	491	7693	19	1347	14	424	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	0.
AVERAGE	0.000	0.005	0.004	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.005	0.010	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.3730	-0.
FINAL	0.0070	1.2012	0.5895	0.0218	1.1652	0.0112	3.6857	3.0047	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	12.3	87.4	0.2	24.1	0.2	75.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0001	0.0000	0.1398	0.0000	0.0103	0.0017	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	0.3	47.4	338.7	0.9	46.0	0.4	145.3	14.5	-0.
GM/MWE=YR	0.04	7.11	50.81	0.13	6.89	0.07	21.80	2.18	-0.
GM/MWH	0.0000	0.0008	0.0058	0.0000	0.0008	0.0000	0.0025	0.0002	-0.
GM/TON	0.8	129.8	928.0	2.4	125.9	1.2	398.2	39.8	-0.
WATTS/MWE=YR	0.	0.8	0.4	0.0	827.1	0.1	61.0	1.2	0.

EXPOSURE 24193.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 6000

ISOTOPE	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	248	1604	517	6762	17	1184	13	363	0
AVERAGE	253	1507	504	7315	18	1280	13	399	0
FINAL	263	1672	477	7882	20	1380	15	434	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.003	0.
AVERAGE	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.000	0.001	0.017	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	3.3730	-0.
FINAL	0.0082	0.2832	14.1652	0.0056	1.2291	0.0168	11.5133	2.3900	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	2.0	98.0	0.0	9.7	0.1	90.2	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0001	0.0000	0.1475	0.0000	0.0322	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	0.3	9.2	461.8	0.2	40.1	0.5	375.4	32.4	-0.
GM/MWE=YR	0.04	1.38	69.27	0.03	6.01	0.08	56.30	4.86	-0.
GM/MWH	0.0000	0.0002	0.0079	0.0000	0.0007	0.0000	0.0064	0.0006	-0.
GM/TON	0.9	30.6	1530.5	0.6	132.8	1.8	1243.9	107.3	-0.
WATTS/MWE=YR	0.	0.2	0.5	0.0	721.2	0.1	157.6	2.7	0.

GRADED FINAL K 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 6000

EXPOSURE 24193.0 MWH/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.31 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/TON ***

0.	0.	1.85	0.89	257.14	82.9	413.5	1149.5	2976.7	30.60	1530.45	132.79	1243.93
0.09	15.0	1.85	0.89	265.26	82.9	415.5	1147.0	2976.7	33.11	1530.45	124.59	1241.92
0.18	30.0	1.85	0.89	272.87	82.9	417.5	1144.5	2976.7	35.62	1530.44	116.89	1239.91
0.28	45.0	1.85	0.90	280.01	82.9	419.5	1142.0	2976.7	38.12	1530.43	109.67	1237.91
0.37	60.0	1.85	0.90	286.69	82.9	421.5	1139.5	2976.7	40.61	1530.43	102.89	1235.91
0.55	90.0	1.85	0.90	298.83	82.9	425.5	1134.5	2976.7	45.59	1530.42	90.57	1231.92
0.74	120.0	1.85	0.91	309.48	82.9	429.5	1129.6	2976.7	50.54	1530.41	79.73	1227.94
0.92	150.0	1.85	0.92	318.82	82.9	433.5	1124.6	2976.7	55.46	1530.39	70.18	1223.98
1.10	180.0	1.85	0.92	327.02	82.9	437.4	1119.7	2976.7	60.37	1530.38	61.78	1220.03
2.21	360.0	1.85	0.98	358.73	83.0	460.9	1090.7	2976.7	89.35	1530.32	28.74	1196.98
4.41	720.0	1.85	1.15	378.40	83.1	506.4	1034.9	2976.7	145.00	1530.18	-6.22	1151.03
6.13	1080.0	1.85	1.35	300.146	80.3	540.6	993.4	2976.7	186.24	1530.07	1.89	1116.81

*** GM/MWE-YEAR ***

0.	0.	0.084	0.040	11.658	3.76	18.75	52.12	134.95	1.387	69.387	6.021	56.397
0.09	15.0	0.084	0.040	12.026	3.76	18.84	52.00	134.95	1.501	69.386	5.649	56.309
0.18	30.0	0.084	0.041	12.371	3.76	18.93	51.89	134.95	1.615	69.386	5.300	56.214
0.28	45.0	0.084	0.041	12.695	3.76	19.02	51.78	134.95	1.728	69.386	4.972	56.124
0.37	60.0	0.084	0.041	12.998	3.76	19.11	51.66	134.95	1.841	69.386	4.665	56.033
0.55	90.0	0.084	0.041	13.548	3.76	19.29	51.44	134.95	2.067	69.385	4.106	55.852
0.74	120.0	0.084	0.041	14.031	3.76	19.47	51.21	134.95	2.291	69.385	3.615	55.672
0.92	150.0	0.084	0.042	14.455	3.76	19.65	50.99	134.95	2.515	69.384	3.182	55.492
1.10	180.0	0.084	0.042	14.826	3.76	19.83	50.77	134.95	2.737	69.384	2.801	55.313
2.21	360.0	0.084	0.044	16.264	3.76	20.89	49.45	134.95	4.051	69.380	1.303	54.250
4.41	720.0	0.084	0.052	17.156	3.77	22.96	46.92	134.95	6.574	69.374	0.292	52.185
6.13	1080.0	0.084	0.061	17.249	3.77	24.51	45.04	134.95	8.444	69.369	0.086	50.633

GRADED FINAL K 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 6000

TIME AFTER REACTOR DISCHARGE

UNITS OF 0.45

YEAR HALF-LIFE

DAYS

U236

NP237

PU238

PU239

PU240

PU241

PU242

AM241

AM243

CM242

CM244

*** GM/MWH ***

0.	0.	0.0000	0.0000	-0.0006	-0.1067	-0.0371	-0.0130	0.0101	0.0002	0.0079	0.0007	0.0064
0.09	15.0	0.0000	0.0000	-0.0005	-0.1067	-0.0370	-0.0130	0.0101	0.0002	0.0079	0.0006	0.0064
0.18	30.0	0.0000	0.0000	-0.0005	-0.1067	-0.0370	-0.0130	0.0101	0.0002	0.0079	0.0006	0.0064
0.28	45.0	0.0000	0.0000	-0.0004	-0.1067	-0.0370	-0.0130	0.0101	0.0002	0.0079	0.0006	0.0064
0.37	60.0	0.0000	0.0000	-0.0004	-0.1067	-0.0370	-0.0131	0.0101	0.0002	0.0079	0.0005	0.0064
0.55	90.0	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0131	0.0101	0.0002	0.0079	0.0005	0.0064
0.74	120.0	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0131	0.0101	0.0003	0.0079	0.0004	0.0064
0.92	150.0	0.0000	0.0000	-0.0002	-0.1067	-0.0369	-0.0131	0.0101	0.0003	0.0079	0.0004	0.0063
1.10	180.0	0.0000	0.0000	-0.0002	-0.1067	-0.0369	-0.0132	0.0101	0.0003	0.0079	0.0003	0.0063
2.21	360.0	0.0000	0.0000	-0.0000	-0.1067	-0.0368	-0.0133	0.0101	0.0005	0.0079	0.0001	0.0062
4.41	720.0	0.0000	0.0000	0.0001	-0.1067	-0.0366	-0.0136	0.0101	0.0007	0.0079	0.0000	0.0060
6.13	1080.0	0.0000	0.0000	0.0001	-0.1067	-0.0364	-0.0138	0.0101	0.0010	0.0079	0.0000	0.0058

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	6.5285	0.	0.	0.	0.	0.015	0.	722.46	157.910
0.09	15.0	0.	0.	6.7347	0.	0.	0.	0.	0.017	0.	677.83	157.655
0.18	30.0	0.	0.	6.9280	0.	0.	0.	0.	0.018	0.	635.95	157.401
0.28	45.0	0.	0.	7.1091	0.	0.	0.	0.	0.019	0.	596.66	157.146
0.37	60.0	0.	0.	7.2788	0.	0.	0.	0.	0.020	0.	559.80	156.892
0.55	90.0	0.	0.	7.5869	0.	0.	0.	0.	0.023	0.	492.76	156.386
0.74	120.0	0.	0.	7.8573	0.	0.	0.	0.	0.025	0.	433.76	155.881
0.92	150.0	0.	0.	8.0946	0.	0.	0.	0.	0.028	0.	381.81	155.377
1.10	180.0	0.	0.	8.3027	0.	0.	0.	0.	0.030	0.	336.09	154.876
2.21	360.0	0.	0.	9.1079	0.	0.	0.	0.	0.045	0.	156.35	151.899
4.41	720.0	0.	0.	9.6073	0.	0.	0.	0.	0.072	0.	33.84	146.117
6.13	1080.0	0.	0.	9.6596	0.	0.	0.	0.	0.093	0.	10.29	141.773

GRADED FINAL K: 1.083

*** AFTER DISCHARGE BEFORE SEPARATION ***

CASE NUMBER 6000

TIME AFTER REACTOR DISCHARGE		*** PERCENT OF ELEMENT ***										
UNITS OF 0.45		U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
YEAR HALF-LIFE	DAYS											
0.	0.	21.89	100.00	5.27	1.70	8.47	23.56	61.00	1.96	98.04	5.65	90.35
0.09	15.0	21.67	100.00	5.43	1.70	8.50	23.47	60.91	2.12	97.88	5.12	90.88
0.18	30.0	21.45	100.00	5.58	1.69	8.53	23.38	60.82	2.27	97.73	4.62	91.38
0.28	45.0	21.24	100.00	5.71	1.69	8.56	23.30	60.73	2.43	97.57	4.14	91.86
0.37	60.0	21.02	100.00	5.84	1.69	8.59	23.22	60.66	2.59	97.41	3.69	92.31
0.55	90.0	20.58	100.00	6.08	1.69	8.65	23.07	60.52	2.89	97.11	3.85	93.15
0.74	120.0	20.14	100.00	6.28	1.68	8.72	22.92	60.40	3.20	96.80	4.10	93.90
0.92	150.0	19.71	100.00	6.46	1.68	8.78	22.78	60.30	3.50	96.50	4.42	94.58
1.10	180.0	19.29	100.00	6.61	1.68	8.85	22.65	60.21	3.80	96.20	4.82	95.18
2.21	360.0	16.95	100.00	7.22	1.67	9.27	21.95	59.89	5.52	94.48	2.55	97.65
4.41	720.0	13.44	100.00	7.60	1.67	10.17	20.78	59.78	8.66	91.34	0.54	99.46
6.13	1080.0	11.54	100.00	7.65	1.67	10.87	19.97	59.84	10.85	89.15	0.17	99.83

GRADED FINAL K: 1.083

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 6000

EXPOSURE 24193.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.31 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE		YIELD FACTOR	URANIUM RECOVERED		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.	1.79	7.1	0.86	300.19	80.4	416.6	1095.7	2887.4	0.	0.
0.83	135.0	15.0	1.79	7.1	0.86	300.10	80.4	416.6	1093.3	2887.4	0.00	2.40
1.00	163.0	43.0	1.79	7.1	0.86	299.92	80.4	416.6	1088.8	2887.4	0.00	6.85
2.00	326.0	206.0	1.79	7.1	0.86	298.88	80.4	416.6	1063.2	2887.4	0.01	32.44
3.00	489.0	369.0	1.79	7.1	0.86	297.84	80.4	416.6	1038.2	2887.4	0.04	57.40
4.00	652.0	532.0	1.79	7.1	0.86	296.81	80.4	416.6	1013.8	2887.4	0.09	81.76
5.00	815.0	695.0	1.79	7.1	0.86	295.78	80.4	416.6	990.0	2887.4	0.15	105.53
6.00	978.0	858.0	1.79	7.1	0.86	294.75	80.4	416.6	966.7	2887.4	0.23	128.73
7.00	1141.0	1021.0	1.79	7.1	0.86	293.73	80.4	416.6	944.0	2887.4	0.33	151.36

TIME AFTER DISCHARGE		YIELD FACTOR	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PII238	PL240
			0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	48.011453.89	0.	0.		75.741166.55	0.	0.	
0.83	135.0	15.0	48.011453.88	0.00	0.01		71.061164.66	4.68	1.88	
1.00	163.0	43.0	48.001453.87	0.01	0.02		63.091161.15	12.65	5.40	
2.00	326.0	206.0	47.971453.81	0.04	0.07		31.951140.93	44.08	25.62	
3.00	489.0	369.0	47.941453.75	0.07	0.13		15.781121.05	59.67	45.49	
4.00	652.0	532.0	47.901453.69	0.11	0.19		7.891101.53	67.34	65.02	
5.00	815.0	695.0	47.871453.64	0.14	0.25		3.951082.34	71.04	84.21	
6.00	978.0	858.0	47.841453.58	0.17	0.31		1.971063.49	72.76	103.06	
7.00	1141.0	1021.0	47.811453.52	0.20	0.37		0.991044.96	73.49	121.58	

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 6000

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.08	0.32	0.04	13.61	3.65	18.89	49.68	130.91	0.	0.
0.83	135.0	15.0	0.08	0.32	0.04	13.61	3.65	18.89	49.57	130.91	0.00	0.11
1.00	163.0	43.0	0.08	0.32	0.04	13.60	3.65	18.89	49.36	130.91	0.00	0.31
2.00	326.0	206.0	0.08	0.32	0.04	13.55	3.65	18.89	48.20	130.91	0.00	1.47
3.00	489.0	369.0	0.08	0.32	0.04	13.50	3.65	18.89	47.07	130.91	0.00	2.60
4.00	652.0	532.0	0.08	0.32	0.04	13.46	3.65	18.89	45.96	130.91	0.00	3.71
5.00	815.0	695.0	0.08	0.32	0.04	13.41	3.65	18.89	44.88	130.91	0.01	4.78
6.00	978.0	858.0	0.08	0.32	0.04	13.36	3.65	18.89	43.83	130.91	0.01	5.84
7.00	1141.0	1021.0	0.08	0.32	0.04	13.32	3.65	18.89	42.80	130.91	0.01	6.86

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	2.18	65.92	0.	0.	3.43	52.89	0.	0.
0.83	135.0	15.0	2.18	65.92	0.00	0.0002	3.22	52.80	0.21	0.09
1.00	163.0	43.0	2.18	65.91	0.00	0.0007	2.86	52.64	0.57	0.24
2.00	326.0	206.0	2.17	65.91	0.00	0.0034	1.43	51.73	2.00	1.16
3.00	489.0	369.0	2.17	65.91	0.00	0.0060	0.72	50.83	2.71	2.06
4.00	652.0	532.0	2.17	65.91	0.00	0.0087	0.36	49.94	3.05	2.95
5.00	815.0	695.0	2.17	65.90	0.01	0.0114	0.18	49.07	3.22	3.62
6.00	978.0	858.0	2.17	65.90	0.01	0.0140	0.09	48.22	3.30	4.67
7.00	1141.0	1021.0	2.17	65.90	0.01	0.0167	0.04	47.38	3.33	5.51

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 6000

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0133	0.0096	0.	0.
0.83	135.0	15.0	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0133	0.0096	0.0000	0.0000
1.00	163.0	43.0	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0133	0.0096	0.0000	0.0000
2.00	326.0	206.0	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0135	0.0094	0.0000	0.0002
3.00	489.0	369.0	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0136	0.0096	0.0000	0.0003
4.00	652.0	532.0	0.0000	0.0000	0.0000	-0.0003	-0.1067	-0.0370	-0.0137	0.0096	0.0000	0.0004
5.00	815.0	695.0	0.0000	0.0000	0.0000	-0.0004	-0.1067	-0.0370	-0.0138	0.0096	0.0000	0.0005
6.00	978.0	858.0	0.0000	0.0000	0.0000	-0.0004	-0.1067	-0.0370	-0.0140	0.0096	0.0000	0.0007
7.00	1141.0	1021.0	0.0000	0.0000	0.0000	-0.0004	-0.1067	-0.0370	-0.0141	0.0096	0.0000	0.0008

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0002	0.0075	0.	0.	0.0004	0.0060	0.	0.
0.83	135.0	15.0	0.0002	0.0075	0.0000	0.0000	0.0004	0.0060	0.0000	0.0000
1.00	163.0	43.0	0.0002	0.0075	0.0000	0.0000	0.0003	0.0060	0.0001	0.0000
2.00	326.0	206.0	0.0002	0.0075	0.0000	0.0000	0.0002	0.0059	0.0002	0.0001
3.00	489.0	369.0	0.0002	0.0075	0.0000	0.0000	0.0001	0.0058	0.0003	0.0002
4.00	652.0	532.0	0.0002	0.0075	0.0000	0.0000	0.0000	0.0057	0.0003	0.0003
5.00	815.0	695.0	0.0002	0.0075	0.0000	0.0000	0.0000	0.0056	0.0004	0.0004
6.00	978.0	858.0	0.0002	0.0075	0.0000	0.0000	0.0000	0.0055	0.0004	0.0005
7.00	1141.0	1021.0	0.0002	0.0075	0.0000	0.0000	0.0000	0.0054	0.0004	0.0006

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 6000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....					
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237 AM241
0.74	120.0	0.	0.	0.	0.	7.6216	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	7.6191	0.	0.	0.	0.	0.001
1.00	163.0	43.0	0.	0.	0.	7.6146	0.	0.	0.	0.	0.003
2.00	326.0	206.0	0.	0.	0.	7.5882	0.	0.	0.	0.	0.016
3.00	489.0	369.0	0.	0.	0.	7.5619	0.	0.	0.	0.	0.029
4.00	652.0	532.0	0.	0.	0.	7.5356	0.	0.	0.	0.	0.041
5.00	815.0	695.0	0.	0.	0.	7.5095	0.	0.	0.	0.	0.053
6.00	978.0	858.0	0.	0.	0.	7.4834	0.	0.	0.	0.	0.064
7.00	1141.0	1021.0	0.	0.	0.	7.4575	0.	0.	0.	0.	0.075

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.024	0.	0.	0.	412.07148	0.087	0.	0.
0.83	135.0	15.0	0.024	0.	0.	0.	386.61147	0.847	0.1188	0.
1.00	163.0	43.0	0.024	0.	0.	0.	343.22147	0.402	0.3211	0.
2.00	326.0	206.0	0.024	0.	0.	0.	171.64144	0.834	1.1192	0.
3.00	489.0	369.0	0.024	0.	0.	0.	85.83142	0.312	1.5150	0.
4.00	652.0	532.0	0.024	0.	0.	0.	42.92139	0.833	1.7096	0.
5.00	815.0	695.0	0.024	0.	0.	0.	21.46137	0.397	1.8036	0.
6.00	978.0	858.0	0.024	0.	0.	0.	10.73135	0.004	1.8473	0.
7.00	1141.0	1021.0	0.024	0.	0.	0.	5.37132	0.652	1.8459	0.

GRADED FINAL K 1.083

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 6000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED.....					
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237 AM241
0.74	120.0	0.	20.14	79.86	100.00	6.28	1.68	8.72	22.92	60.40	100.00 100.00
0.83	135.0	15.0	20.14	79.86	100.00	6.28	1.68	8.72	22.88	60.43	100.00 100.00
1.00	163.0	43.0	20.14	79.86	100.00	6.28	1.69	8.73	22.81	60.49	100.00 100.00
2.00	326.0	206.0	20.14	79.86	100.00	6.30	1.69	8.78	22.40	60.83	100.00 100.00
3.00	489.0	369.0	20.14	79.86	100.00	6.31	1.70	8.83	21.99	61.17	100.00 100.00
4.00	652.0	532.0	20.14	79.86	100.00	6.32	1.71	8.87	21.59	61.50	100.00 100.00
5.00	815.0	695.0	20.14	79.86	100.00	6.33	1.72	8.92	21.20	61.83	100.00 100.00
6.00	978.0	858.0	20.14	79.86	100.00	6.34	1.73	8.97	20.81	62.15	100.00 100.00
7.00	1141.0	1021.0	20.14	79.86	100.00	6.35	1.74	9.01	20.42	62.47	100.00 100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED.....				CURIUM RECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	3.20	96.80	100.00	100.00	6.10	93.90	0.	0.
0.83	135.0	15.0	3.20	96.80	100.00	100.00	5.75	94.25	71.28	28.72
1.00	163.0	43.0	3.20	96.80	100.00	100.00	5.15	94.85	70.10	29.90
2.00	326.0	206.0	3.19	96.81	100.00	100.00	2.69	97.31	63.24	36.76
3.00	489.0	369.0	3.19	96.81	100.00	100.00	1.39	98.61	56.74	43.26
4.00	652.0	532.0	3.19	96.81	100.00	100.00	0.71	99.29	50.87	49.13
5.00	815.0	695.0	3.19	96.81	100.00	100.00	0.36	99.64	45.76	54.24
6.00	978.0	858.0	3.19	96.81	100.00	100.00	0.19	99.81	41.38	58.62
7.00	1141.0	1021.0	3.18	96.82	100.00	100.00	0.09	99.91	37.67	62.33

*** SPECIAL PRODUCT CONCENTRATIONS ***

PLUTONIUM ENRICHMENT WITH CONSTANT SPECTRUM

CASE NUMBER 6000

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 1500.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 7000

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

EXPOSURE, MWD/Y 24506.0 INITIAL FLUX, N/SO CM-SEC 1.66E 13 FISSION RATIO 0.02 U235 IN TAILS/U235 ENR 0.55
 POWER DENS, MW/T 25.00 AVG FLUX, NEUT/SO CM-SEC 0.44E 13 INITIAL CONV RATIO 0.01 KG NATURAL/KG PRODUCED 202.322
 RESIDENCE TIME, YRS 3.37 MAX FLUX/MIN FLUX 29.66 NONFUEL X-SECT 1/CM 0.053 KG NAT U/MWE-YR 274.450
 TOTAL ENRICHMENT 3.16 AVG NEUTRON TEMP, C 419 FUEL DENSITY 9.26 AVERAGE R 0.250
 LOAD FACTOR 0.80 THERMAL TO ELECTRICAL EFF 0.33

KW/GRAMS FISSION 0.63 WATTS/CC 185.10 DT (NO LOSSES) 0 DT (AEC LOSSES) 0
 INITIAL REACTIVITY 1.729 FINAL INTEGRATED REACTIVITY 1.124 FINAL REACTIVITY 0.333 REACTIVITY CHANGE/MWD, MK 0.0568

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	716	0	0	478	0	0.	1496	0	1255	0
AVERAGE	0.	742	0	0	532	0	0.	1520	0	1315	0
FINAL	0.	750	0	0	552	0	0.	1544	0	1342	0
ABSORPTION-INITIAL	47.55	810	316	218	594	147	105.08	2360	3925	1772	472
AVERAGE	47.46	838	314	220	667	95	108.60	2380	3708	1848	465
FINAL	47.31	847	313	221	695	93	112.97	2422	3607	1890	461
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.358	0.	0.	0.	0.	0.	0.
AVERAGE	0.	0.000	0.	0.	0.094	0.	0.	0.004	0.	0.001	0.
FINAL	0.	0.000	0.	0.	0.094	0.	0.	0.005	0.	0.002	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.445	0.	0.006	0.	0.	0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.117	0.008	0.004	0.006	0.002	0.002	0.000
FINAL	0.000	0.000	0.000	0.000	0.105	0.008	0.003	0.008	0.003	0.003	0.001
LPHA	INITIAL	0.	0.131	0.	0.	0.243	0.	0.	0.578	0.	0.412
AVERAGE	0.	0.129	0.	0.	0.253	0.	0.	0.566	0.	0.405	0.
FINAL	0.	0.129	0.	0.	0.259	0.	0.	0.569	0.	0.408	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	84.4	0.	0.0	11.4	0.	4.2	0.
ATA	0.	2.22	0.	0.	1.94	0.	0.	1.84	0.	2.16	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	0.87	0.	21.40	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.013	0.	0.	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 7000

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PL242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	3.16	0.	0.	0.	0.	0.	0.
FINAL	0.	0.00	0.	0.	0.03	0.	0.	0.01	0.	0.01	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	93.0	0.	7.0	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	6.1	72.6	21.3	47.7	11.4	20.9	19.9
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.2926	0.	0.0223	0.	0.	0.	0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0030	0.0358	0.0106	0.0013	0.0003	0.0006	0.0006
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.3	9287.8	1146.7	375.9	42.8	10.3	18.9	18.1
GM/MWE-YR	0.0	0.0	0.0	0.1	1393.2	172.0	56.4	6.4	1.5	2.8	2.7
GM/MWH	0.0000	0.0000	0.0000	0.0000	0.1590	0.0196	0.0064	0.0007	0.0002	0.0003	0.0003
GM/TON	0.0	0.0	0.0	1.1	31295.0	3863.9	1266.7	144.1	34.6	63.8	60.9
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.3	92.4	1146.7	339.	42.8	10.3	18.9	18.1
GM/MWE-YR	0.	0.0	0.0	0.1	14.3	172.0	51.	6.	2.	3.	3.
GM/TON	0.	0.0	0.0	1.1	321.4	3863.9	1142.	144.1	34.6	63.8	60.9

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 7000

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

EXPOSURE, MWD/TON 24596.0 INITIAL ENRICH: 3.16 POWER DENS, MW/T 0. AV. NEUTRON TEMPERATURE, C 419.
 RESIDENCE TIME, YRS 3.37 AVERAGE R 0.250 KW/GRAMS FISSILE 0.63 AVERAGE FLUX, NEUT/SQ CM-SEC 6.46E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED			NON-FISSION CAPTURE		
	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	FUEL INITIAL	REACTOR AVERAGE
FROM U-233	-0.	0.00	0.00		
FROM U-235	195.87	182.38	63.12		
FROM PU-239	-0.	8.65	92.28		
FROM PU-241	-0.	3.04	36.96		
TOTAL	195.87	194.07	192.35		
NET FROM U-238	0.01	0.02	0.09		
NET FROM U-238	0.	0.	0.		
TOTAL	195.87	194.09	192.44		
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION			NON-FERTILE CAPTURE		
IN U-233	-0.	0.00	0.00	IN U-236	-0.
IN U-235	80.47	75.18	25.93	IN PU-242	-0.
IN PU-239	-0.	3.00	31.99	IN SPECIAL PRODUCTS	-0.
IN PU-241	-0.	1.00	12.20	TOTAL	-0.
TOTAL	80.47	79.18	70.11		
AS CAPTURE FORMING FERTILE ISOTOPES			NON-FUEL ABSORPTION + LEAKAGE		
IN U-233	-0.	0.00	0.00	IN SM + XE	1.96
IN PU-239	-0.	1.70	18.19	IN OTHER F.P.	0.
TOTAL	-0.	1.70	18.19	IN STRUCT. + MOD. + IMPUR.	3.19
				CONTROL + LEAKAGE	21.59
				TOTAL	26.73
AS CAPTURE FORMING NON-FERTILE ISOTOPES			NEUTRONS INTO OR FROM OTHER FUEL		
IN U-235	19.53	19.71	6.72	IN PA-233 NON-FERTILE CAPTURE	-0.
IN PU-241	-0.	0.41	4.98	IN NP-239 NON-FERTILE CAPTURE	0.
TOTAL	19.53	19.12	11.70	TOTAL ABSORPTION + LEAKAGE	195.87
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	0.58
					5.46
					33.39

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PJ238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	270	1790	545	7370	18	1290	14	392	0
AVERAGE	270	1722	544	7421	18	1299	14	395	0
FINAL	270	1719	544	7487	19	1311	14	400	0
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	0.3172	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0117	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	79.1	20.2	0.6	91.0	0.1	8.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	50.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	-0.
GM/MWE-YR	7.50	0.01	0.00	0.00	0.00	0.00	0.00	0.28	-0.
GM/MWH	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.
GM/TON	34.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.

POSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PJ238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
CROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	270	1790	545	7370	18	1290	14	392	0
AVERAGE	270	1723	544	7481	18	1309	14	399	0
FINAL	271	1735	544	7610	19	1332	14	408	0
CROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
OTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	1.2316	0.0026	0.0024	0.0000	0.0006	0.0000	0.0002	0.1028	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	52.0	47.3	0.7	73.3	0.2	26.4	100.0	0.
AT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0001	0.
T ISOTOPIC PRODUCTION									
GM/TON=YR	97.1	0.2	0.2	0.0	0.1	0.0	0.0	8.1	-0.
GM/MWE=YR	14.57	0.03	0.03	0.00	0.01	0.00	0.00	1.22	-0.
GM/MWH	0.0017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	-0.
GM/TON	133.1	0.3	0.3	0.0	0.1	0.0	0.0	11.1	-0.
WATTS/MWE=YR	0.	0.0	0.0	0.0	0.9	0.0	0.0	0.7	0.

POSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PJ238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
CROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	270	1790	545	7370	18	1290	14	392	0
AVERAGE	270	1730	543	7543	18	1320	14	403	0
FINAL	272	1755	543	7735	19	1354	15	417	0
CROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
OTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	2.8745	0.0061	0.0184	0.0001	0.0031	0.0000	0.0036	0.4208	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	24.8	74.8	0.4	46.3	0.3	53.4	100.0	0.
AT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0002	0.
T ISOTOPIC PRODUCTION									
GM/TON=YR	151.1	0.3	1.0	0.0	0.2	0.0	0.2	22.1	-0.
GM/MWE=YR	22.67	0.05	0.15	0.00	0.02	0.00	0.03	3.32	-0.
GM/MWH	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	-0.
GM/TON	310.6	0.7	2.0	0.0	0.3	0.0	0.4	45.5	-0.
WATTS/MWE=YR	0.	0.0	0.0	0.0	2.9	0.0	0.1	1.9	0.

POSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6740YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
CROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	270	1790	545	7370	18	1290	14	392	0
AVERAGE	271	1739	543	7605	19	1331	14	408	0
FINAL	273	1776	542	7857	20	1375	15	425	0
ACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	5.7410	0.0058	0.0059	0.0001	0.0079	0.0001	0.0355	1.4131	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	6.3	93.5	0.1	18.2	0.2	81.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0009	0.0000	0.0001	0.0008	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	226.4	0.2	3.4	0.0	0.3	0.0	1.4	55.7	-0.
GM/MWE-YR	33.96	0.03	0.51	0.00	0.05	0.00	0.21	8.36	-0.
GM/MWH	0.0039	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0010	-0.
GM/TON	620.3	0.6	9.3	0.0	0.8	0.0	3.8	152.7	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	5.6	0.0	0.6	4.7	0.

POSURE 24596.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7000

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6740YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
CROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	270	1790	545	7370	18	1290	14	392	0
AVERAGE	271	1747	543	7660	19	1340	14	411	0
FINAL	273	1789	538	7941	20	1390	15	431	0
ACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	10.6518	0.0013	0.3665	0.0000	0.0124	0.0002	0.5206	5.1804	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	0.3	99.6	0.0	2.3	0.0	97.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0015	0.0000	0.0015	0.0029	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	341.6	0.0	11.8	0.0	0.4	0.0	16.7	166.1	-0.
GM/MWE-YR	51.24	0.01	1.76	0.00	0.06	0.00	2.50	24.92	-0.
GM/MWH	0.0058	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0028	-0.
GM/TON	1150.9	0.1	39.6	0.0	1.3	0.0	56.2	559.7	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	7.1	0.0	7.0	14.0	0.

GRADED FINAL K 1.124

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 7000

EXPOSURE 24596.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.37 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
063.87	1150.85	559.71	144.1	34.6	63.8	60.9	0.14	39.60	1.34	56.24
063.87	1150.85	559.61	144.1	34.7	63.6	60.9	0.28	39.60	1.25	56.15
063.87	1150.85	559.51	144.1	34.8	63.5	60.9	0.42	39.60	1.18	56.06
063.87	1150.85	559.40	144.1	34.9	63.3	60.9	0.55	39.60	1.10	55.97
063.87	1150.85	559.29	144.1	35.0	63.2	60.9	0.69	39.60	1.04	55.88
063.87	1150.85	559.06	144.1	35.1	62.9	60.9	0.97	39.60	0.91	55.70
063.87	1150.85	558.81	144.1	35.3	62.7	60.9	1.24	39.60	0.80	55.52
063.87	1150.85	558.55	144.1	35.5	62.4	60.9	1.52	39.60	0.71	55.34
063.87	1150.85	558.28	144.1	35.7	62.1	60.9	1.79	39.60	0.62	55.14
063.87	1150.85	556.47	144.1	36.7	60.5	60.9	3.40	39.60	0.29	54.10
063.87	1150.86	552.44	144.1	38.8	57.4	60.9	6.49	39.59	0.06	52.04
063.87	1150.87	549.20	144.1	40.4	55.1	60.9	8.78	39.59	0.02	50.50

*** GM/MWE-YEAR ***

0.	0.	172.307	51.322	24.960	6.43	1.54	2.84	2.72	0.006	1.766	0.060	2.508
0.09	15.0	172.307	51.322	24.956	6.43	1.55	2.84	2.72	0.012	1.766	0.056	2.504
0.18	30.0	172.307	51.322	24.951	6.43	1.55	2.83	2.72	0.019	1.766	0.052	2.500
0.28	45.0	172.307	51.322	24.946	6.43	1.56	2.83	2.72	0.025	1.766	0.049	2.496
0.37	60.0	172.307	51.322	24.941	6.43	1.56	2.82	2.72	0.031	1.766	0.046	2.492
0.55	90.0	172.307	51.322	24.931	6.43	1.57	2.81	2.72	0.043	1.766	0.041	2.484
0.74	120.0	172.307	51.322	24.920	6.43	1.58	2.79	2.72	0.055	1.766	0.036	2.476
0.92	150.0	172.307	51.322	24.908	6.43	1.58	2.78	2.72	0.068	1.766	0.032	2.468
1.10	180.0	172.307	51.322	24.896	6.43	1.59	2.77	2.72	0.080	1.766	0.028	2.460
2.21	360.0	172.307	51.322	24.816	6.43	1.64	2.70	2.72	0.152	1.766	0.013	2.413
4.41	720.0	172.307	51.322	24.636	6.43	1.73	2.56	2.72	0.289	1.766	0.003	2.321
6.13	1000.0	172.307	51.322	24.491	6.43	1.80	2.46	2.72	0.391	1.766	0.001	2.252

GRADED FINAL K 1.124

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 7000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWH ***										
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0003
 
0.0197	0.0059	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0002		

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	13.9776	0.	0.	0.	0.	0.000	0.	7.15	7.023
0.09	15.0	0.	0.	13.9752	0.	0.	0.	0.	0.000	0.	6.71	7.012
0.18	30.0	0.	0.	13.9726	0.	0.	0.	0.	0.000	0.	6.30	7.000
0.28	45.0	0.	0.	13.9700	0.	0.	0.	0.	0.000	0.	5.91	6.989
0.37	60.0	0.	0.	13.9672	0.	0.	0.	0.	0.000	0.	5.54	6.978
0.55	90.0	0.	0.	13.9614	0.	0.	0.	0.	0.000	0.	4.88	6.955
0.74	120.0	0.	0.	13.9552	0.	0.	0.	0.	0.001	0.	4.29	6.933
0.92	150.0	0.	0.	13.9487	0.	0.	0.	0.	0.001	0.	3.78	6.910
1.10	180.0	0.	0.	13.9419	0.	0.	0.	0.	0.001	0.	3.33	6.888
2.21	360.0	0.	0.	13.8967	0.	0.	0.	0.	0.002	0.	1.55	6.756
4.41	720.0	0.	0.	13.7961	0.	0.	0.	0.	0.003	0.	0.34	6.498
6.13	1000.0	0.	0.	13.7151	0.	0.	0.	0.	0.004	0.	0.10	6.305

GRADED FINAL K 1,124

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 7000

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** PERCENT OF ELEMENT ***

0.	0.	72.51	100.00	64.85	16.70	4.01	7.39	7.06	0.35	99.65	2.32	97.68
0.09	15.0	72.51	100.00	64.85	16.70	4.02	7.37	7.06	0.69	99.31	2.18	97.82
0.18	30.0	72.51	100.00	64.85	16.71	4.03	7.36	7.06	1.04	98.96	2.06	97.94
0.28	45.0	72.51	100.00	64.85	16.71	4.04	7.34	7.06	1.38	98.62	1.93	98.07
0.37	60.0	72.50	100.00	64.84	16.71	4.05	7.33	7.06	1.72	98.28	1.82	98.18
0.55	90.0	72.50	100.00	64.84	16.72	4.08	7.30	7.06	2.39	97.61	1.61	98.39
0.74	120.0	72.49	100.00	64.84	16.72	4.10	7.27	7.07	3.05	96.95	1.42	98.58
0.92	150.0	72.49	100.00	64.84	16.73	4.12	7.24	7.07	3.69	96.31	1.26	98.74
1.10	180.0	72.48	100.00	64.83	16.74	4.14	7.21	7.07	4.33	95.67	1.11	98.89
2.21	360.0	72.46	100.00	64.80	16.78	4.28	7.05	7.09	7.90	92.10	0.53	99.47
4.41	720.0	72.40	100.00	64.71	16.88	4.55	6.72	7.13	14.06	85.92	0.12	99.88
6.13	1000.0	72.35	100.00	64.63	16.96	4.75	6.49	7.17	18.15	81.85	0.04	99.96

GRADED FINAL K 1,124

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 7000

OSURE 24596.0 MW/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.37 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS TIME AFTER SEPARATION DAYS URANIUM RECOVERED... U236 OTHER U NEPTUNIUM RECOVERED NP237 PLUTONIUM RECOVERED... PU238 PU239 PU240 PU241 PU242 NP237 AM241

YIELD FACTOR													
			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	n.	0.	
0.74	120.0	0.	3747.95	1422.0	1093.31	542.05	139.8	34.3	60.6	59.1	0.	0.	
0.83	135.0	15.0	3747.95	1422.0	1093.31	541.87	139.8	34.3	60.6	59.1	0.00	0.13	
1.00	163.0	43.0	3747.95	1422.0	1093.31	541.55	139.8	34.3	60.4	59.1	0.00	0.38	
2.00	326.0	206.0	3747.95	1422.0	1093.31	539.67	139.8	34.3	59.0	59.1	0.00	1.80	
3.00	489.0	369.0	3747.95	1422.0	1093.31	537.80	139.8	34.3	57.6	59.1	0.00	3.18	
4.00	652.0	532.0	3747.95	1422.0	1093.31	535.94	139.8	34.3	56.2	59.1	0.01	4.54	
5.00	815.0	695.0	3747.95	1422.0	1093.31	534.08	139.8	34.3	54.9	59.1	0.01	5.85	
6.00	978.0	858.0	3747.95	1422.0	1093.31	532.22	139.8	34.3	53.6	59.1	0.01	7.14	
7.00	1141.0	1021.0	3747.95	1422.0	1093.31	530.38	139.8	34.3	52.4	59.1	0.02	8.40	

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES DAYS TIME AFTER SEPARATION DAYS AMERICIUM RECOVERED... AM241 AM243 NP237 PU239 CURIUM RECOVERED... CM242 CM244 PU238 PU240

		YIELD FACTOR	0.950	0.950	0.	0.			0.950	0.950	0.	n.
0.74	120.0	0.	1.18	37.62	0.	0.	0.76	52.74	0.	0.	0.	
0.83	135.0	15.0	1.18	37.62	0.00	0.00	0.72	52.66	0.05	0.09	0.09	
1.00	163.0	43.0	1.18	37.62	0.00	0.00	0.63	52.50	0.13	0.24	0.24	
2.00	326.0	206.0	1.18	37.62	0.00	0.00	0.32	51.59	0.44	1.16	1.16	
3.00	489.0	369.0	1.18	37.62	0.00	0.00	0.16	50.69	0.60	2.06	2.06	
4.00	652.0	532.0	1.18	37.62	0.00	0.00	0.08	49.81	0.68	2.94	2.94	
5.00	815.0	695.0	1.18	37.61	0.00	0.01	0.04	48.94	0.72	3.81	3.81	
6.00	978.0	858.0	1.18	37.61	0.00	0.01	0.02	48.09	0.73	4.66	4.66	
7.00	1141.0	1021.0	1.18	37.61	0.00	0.01	0.01	47.25	0.74	5.50	5.50	

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** GM/MWE*YEAR ***

CASE NUMBER 7000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	167.14	63.41	48.76	24.17	6.23	1.53	2.71	2.63	0.	0.
0.83	135.0	15.0	167.14	63.41	48.76	24.16	6.23	1.53	2.70	2.63	0.00	0.01
1.00	163.0	43.0	167.14	63.41	48.76	24.15	6.23	1.53	2.69	2.63	0.00	0.02
2.00	326.0	206.0	167.14	63.41	48.76	24.07	6.23	1.53	2.63	2.63	0.00	0.08
3.00	489.0	369.0	167.14	63.41	48.76	23.98	6.23	1.53	2.57	2.63	0.00	0.14
4.00	652.0	532.0	167.14	63.41	48.76	23.90	6.23	1.53	2.51	2.63	0.00	0.20
5.00	815.0	695.0	167.14	63.41	48.76	23.82	6.23	1.53	2.45	2.63	0.00	0.26
6.00	978.0	858.0	167.14	63.41	48.76	23.73	6.23	1.53	2.39	2.63	0.00	0.32
7.00	1141.0	1021.0	167.14	63.41	48.76	23.65	6.23	1.53	2.34	2.63	0.00	0.37

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.05	1.68	0.	0.	0.03	2.35	0.	0.
0.83	135.0	15.0	0.05	1.68	0.00	0.0000	0.03	2.35	0.00	0.00
1.00	163.0	43.0	0.05	1.68	0.00	0.0000	0.03	2.34	0.01	0.01
2.00	326.0	206.0	0.05	1.68	0.00	0.0001	0.01	2.30	0.02	0.05
3.00	489.0	369.0	0.05	1.68	0.00	0.0002	0.01	2.26	0.03	0.09
4.00	652.0	532.0	0.05	1.68	0.00	0.0002	0.00	2.22	0.03	0.13
5.00	815.0	695.0	0.05	1.68	0.00	0.0003	0.00	2.18	0.03	0.17
6.00	978.0	858.0	0.05	1.68	0.00	0.0004	0.00	2.14	0.03	0.21
7.00	1141.0	1021.0	0.05	1.68	0.00	0.0004	0.00	2.11	0.03	0.25

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 7000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0191	=0.1659	0.0056	0.0028	0.0007	0.0002	0.0003	0.0003	0.	0.
0.83	135.0	15.0	0.0191	=0.1659	0.0056	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
1.00	163.0	43.0	0.0191	=0.1659	0.0056	0.0028	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
2.00	326.0	206.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
3.00	489.0	369.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
4.00	652.0	532.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
5.00	815.0	695.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
6.00	978.0	858.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000
7.00	1141.0	1021.0	0.0191	=0.1659	0.0056	0.0027	0.0007	0.0002	0.0003	0.0003	0.0000	0.0000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0000	0.0002	0.	0.	0.0000	0.0003	0.	0.
0.83	135.0	15.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
1.00	163.0	43.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
2.00	326.0	206.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
3.00	489.0	369.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
4.00	652.0	532.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
5.00	815.0	695.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000
6.00	978.0	858.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
7.00	1141.0	1021.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 7000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		..RECOVERED..						
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	13.5365	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	13.5322	0.	0.	0.	0.	0.	0.000
1.00	163.0	43.0	0.	0.	0.	13.5241	0.	0.	0.	0.	0.	0.000
2.00	326.0	206.0	0.	0.	0.	13.4772	0.	0.	0.	0.	0.	0.001
3.00	489.0	369.0	0.	0.	0.	13.4305	0.	0.	0.	0.	0.	0.002
4.00	652.0	532.0	0.	0.	0.	13.3839	0.	0.	0.	0.	0.	0.002
5.00	815.0	695.0	0.	0.	0.	13.3374	0.	0.	0.	0.	0.	0.003
6.00	978.0	858.0	0.	0.	0.	13.2912	0.	0.	0.	0.	0.	0.004
7.00	1141.0	1021.0	0.	0.	0.	13.2451	0.	0.	0.	0.	0.	0.004

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		..RECOVERED..	AM241	AM243	NP237	PU239	..RECOVERED..	CM242	CM244
0.74	120.0	0.	0.001	0.	0.	0.	0.	4.00	6.586	0.
0.83	135.0	15.0	0.001	0.	0.	0.	0.	3.83	6.575	0.0012
1.00	163.0	43.0	0.001	0.	0.	0.	0.	3.40	6.556	0.0032
2.00	326.0	206.0	0.001	0.	0.	0.	0.	1.70	6.441	0.0111
3.00	489.0	369.0	0.001	0.	0.	0.	0.	0.85	6.329	0.0150
4.00	652.0	532.0	0.001	0.	0.	0.	0.	0.42	6.219	0.0169
5.00	815.0	695.0	0.001	0.	0.	0.	0.	0.21	6.111	0.0179
6.00	978.0	858.0	0.001	0.	0.	0.	0.	0.11	6.004	0.0183
7.00	1141.0	1021.0	0.001	0.	0.	0.	0.	0.05	5.900	0.0185

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 7000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		..RECOVERED..						
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	72.49	27.51	100.00	64.84	16.72	4.10	7.27	7.07	100.00	100.00
0.83	135.0	15.0	72.49	27.51	100.00	64.84	16.73	4.10	7.26	7.07	100.00	100.00
1.00	163.0	43.0	72.49	27.51	100.00	64.85	16.74	4.10	7.23	7.07	100.00	100.00
2.00	326.0	206.0	72.49	27.51	100.00	64.88	16.81	4.12	7.09	7.10	100.00	100.00
3.00	489.0	369.0	72.49	27.51	100.00	64.91	16.87	4.14	6.95	7.13	100.00	100.00
4.00	652.0	532.0	72.49	27.51	100.00	64.94	16.94	4.15	6.81	7.16	100.00	100.00
5.00	815.0	695.0	72.49	27.51	100.00	64.96	17.01	4.17	6.68	7.19	100.00	100.00
6.00	978.0	858.0	72.49	27.51	100.00	64.98	17.07	4.18	6.55	7.21	100.00	100.00
7.00	1141.0	1021.0	72.49	27.51	100.00	65.00	17.14	4.20	6.42	7.24	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		..RECOVERED..	AM241	AM243	NP237	PU239	..RECOVERED..	CM242	CM244
0.74	120.0	0.	3.05	96.95	100.00	100.00		1.42	98.58	0.
0.83	135.0	15.0	3.05	96.95	100.00	100.00		1.34	98.66	35.59
1.00	163.0	43.0	3.05	96.95	100.00	100.00		1.20	98.80	34.29
2.00	326.0	206.0	3.04	96.96	100.00	100.00		0.61	99.39	27.69
3.00	489.0	369.0	3.04	96.96	100.00	100.00		0.31	99.69	22.60
4.00	652.0	532.0	3.04	96.96	100.00	100.00		0.16	99.84	18.73
5.00	815.0	695.0	3.04	96.96	100.00	100.00		0.08	99.92	15.81
6.00	978.0	858.0	3.04	96.96	100.00	100.00		0.04	99.96	13.58
7.00	1141.0	1021.0	3.03	96.97	100.00	100.00		0.02	99.98	11.86

*** SPECIAL PRODUCT CONCENTRATIONS ***

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

CASE NUMBER 7000

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP = 0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 1200.0 GRAMS/TON

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

EXPOSURE, MWD/T	24921.0	INITIAL FLUX, N/SQ CM-SEC		1.64E 13	FISSILE RATIO		0.02	U235 IN TAILS/U235 ENR		0.55	
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC		2.92E 13	INITIAL CONV RATIO		0.01	KG NATURAL/KG PRODUCED		202.602	
RESIDENCE TIME, YRS	3.41	MAX FLUX/MIN FLUX		22.01	NONFUEL X-SECT 1/CM		0.053	KG NAT U/MWE-YR		273.154	
TOTAL ENRICHMENT	3.21	AVG NEUTRON TEMP, C		418.	FUEL DENSITY		9.26	AVERAGE R		6.250	
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.		0.33							
KW/GRAMS FISSILE	0.62	WATTS/CC		185.11	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.	
INITIAL REACTIVITY	1.704	FINAL INTEGRATED REACTIVITY		1.124	FINAL REACTIVITY		0.383	REACTIVITY CHANGE/MWD, MK		0.4530	
ISOTOPES											
	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PL242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	715	0	0	477	0	0.	1491	0	1253	0
AVERAGE	0.	740	0	0	530	0	0.	1510	0	1316	0
FINAL	0.	749	0	0	551	0	0.	1533	0	1338	0
ABSORPTION-INITIAL	47.51	808	315	218	592	95	105.06	2351	3922	1768	472
AVERAGE	47.43	836	314	220	664	78	108.29	2364	3689	1840	465
FINAL	47.26	845	313	221	693	78	111.82	2402	3554	1802	460
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.363	0.	0.	0.	0.	0.	0.
AVERAGE	0.	0.000	0.	0.	0.103	0.	0.	0.004	0.	0.001	0.
FINAL	0.	0.000	0.	0.	0.007	0.	0.	0.007	0.	0.002	0.
ABSORPTION-INITIAL	0.	0.	0.	0.	0.451	0.008	0.006	0.	0.	0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.128	0.013	0.005	0.007	0.002	0.002	0.000
FINAL	0.000	0.000	0.000	0.000	0.008	0.012	0.003	0.010	0.004	0.003	0.001
ALPHA	0.	0.130	0.	0.	0.241	0.	0.	0.577	0.	0.411	0.
AVERAGE	0.	0.130	0.	0.	0.253	0.	0.	0.565	0.	0.405	0.
FINAL	0.	0.128	0.	0.	0.258	0.	0.	0.567	0.	0.407	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	85.3	0.	0.0	10.8	0.	3.8	0.
ETA	0.	2.22	0.	0.	1.94	0.	0.	1.84	0.	2.16	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	0.87	0.	23.27	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	0.	0.	0.	0.	0.	0.	0.013	0.	0.	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 7001

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	0.	0.	0.	3.21	0.	0.	0.	0.	0.	0.
FINAL	0.	0.00	0.	0.	0.05	0.	0.	0.02	0.	0.01	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	0.	0.	0.	84.1	9.7	6.2	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	6.0	79.6	14.4	49.0	11.7	20.9	18.4
ISOTOPIC DENSITY GM/CC											
INITIAL	0.	0.	0.	0.	0.2972	0.0345	0.0222	0.	0.	0.	0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0647	0.0620	0.0113	0.0017	0.0004	0.0007	0.0006
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	0.6	9259.5	870.0	349.8	53.6	12.8	23.1	20.4
GM/MWE-YR	0.0	0.0	0.0	0.1	1388.9	130.5	51.9	8.0	1.9	3.5	3.1
GM/MWH	0.0000	0.0000	0.0000	0.0000	0.1586	0.0149	0.0059	0.0009	0.0002	0.0004	0.0003
GM/TON	0.0	0.0	0.0	2.1	31610.9	2970.2	1180.5	183.0	43.8	78.8	69.5
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	0.6	147.3	1963.0	357.1	53.6	12.8	23.1	20.4
GM/MWE-YR	0.	0.0	0.0	0.1	22.1	204.5	54.1	8.0	2.0	3.5	3.1
GM/TON	0.	0.0	0.0	2.1	502.9	6701.6	1218.0	183.0	43.8	78.8	69.5

GRATED BURNUP

NEUTRON BALANCE

CASE NO. 7001

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

EXPOSURE, MW/D/TON 24921.0 INITIAL ENRICH. 3.21 POWER DENS. MW/T 161.38 AV. NEUTRON TEMPERATURE, C 418.
 RESIDENCE TIME, YRS 3.41 AVERAGE R 0.250 KW/GRAMS FISSION 0.62 AVERAGE FLUX, NEUT/50 CM-SEC 2.92E 13

BASIS-100 NEUTRONS ABSORBED IN FISSIONABLE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSIONABLE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	196.12	161.89	72.89				
FROM PU-239	-0.	9.12	86.01				
FROM PU-241	-0.	3.10	33.65				
TOTAL	196.12	194.11	192.55				
NET FROM U-233	0.01	0.02	0.07				
NET FROM U-235	0.	0.	0.				
TOTAL	196.12	194.11	192.63				
NEUTRONS ABSORBED IN FISSIONABLE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	80.57	74.93	29.95				
IN PU-239	-0.	3.16	29.81				
IN PU-241	-0.	1.02	11.11				
TOTAL	80.57	79.15	70.87				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	-0.	1.79	16.90				
TOTAL	-0.	1.79	16.90				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	19.43	18.64	7.72				
IN PU-241	-0.	0.41	4.52				
TOTAL	19.43	19.06	12.23				
TOTAL FISSIONABLE ABSORPTION	100.00	100.00	100.00				
				NON-FERTILE CAPTURE			
				IN U-236	0.97	9.67	50.96
				IN PU-242	-0.	0.24	3.04
				IN SPECIAL PRODUCTS	-0.	7.32	77.62
				TOTAL	0.97	17.23	131.62
				NON-FUEL ABSORPTION + LEAKAGE			
				IN SM + XE	2.34	15.43	83.36
				IN OTHER F.P.	0.	9.99	4.33
				IN STRUCT. + MOD. + IMPUR.	3.78	24.91	134.53
				CONTROL + LEAKAGE	21.58	21.36	21.20
				TOTAL	27.70	71.70	243.43
				NEUTRONS INTO OR FROM OTHER FUEL	66.77	0.	-310.57
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	196.12	194.11	192.63
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	0.68	5.19	28.15

EXPOSURE 5000.0 MW/D/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE	STABLE	456 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	269	1782	544	7359	18	1288	14	392	0
AVERAGE	269	1714	544	7410	18	1297	14	395	0
FINAL	269	1712	544	7475	19	1309	14	400	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	1.3682	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0670	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	79.8	19.6	0.6	91.3	0.1	8.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	215.8	0.0	0.0	0.0	0.0	0.0	0.0	10.6	-0.
GM/MWE-YR	32.37	0.01	0.00	0.00	0.00	0.00	0.00	1.59	-0.
GM/MWH	0.0037	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	-0.
GM/TON	147.8	0.0	0.0	0.0	0.0	0.0	0.0	7.2	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	0.1	0.0	0.0	0.9	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	459 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	269	1782	544	7359	18	1288	14	352	0
AVERAGE	269	1716	543	7469	18	1307	14	359	0
FINAL	270	1728	543	7597	19	1330	14	408	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	3.1881	0.0026	0.0022	0.0000	0.0006	0.0000	0.0002	0.3308	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	53.3	46.0	0.7	74.2	0.2	25.5	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0060	0.0000	0.0000	0.0001	0.0000	0.0000	0.0002	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	251.4	0.2	0.2	0.0	0.0	0.0	0.0	25.1	-0.
GM/MWE-YR	37.72	0.03	0.03	0.00	0.01	0.00	0.00	3.91	-0.
GM/MWH	0.0043	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	-0.
GM/TON	344.4	0.3	0.2	0.0	0.1	0.0	0.0	35.7	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	0.9	0.0	0.0	2.2	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	459 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	269	1782	544	7359	18	1288	14	352	0
AVERAGE	269	1723	543	7531	18	1318	14	403	0
FINAL	270	1748	543	7721	19	1352	15	416	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	5.6623	0.0061	0.0171	0.0001	0.0030	0.0000	0.0032	0.9477	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	26.4	73.2	0.4	48.1	0.3	51.7	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0005	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	297.7	0.3	0.9	0.0	0.2	0.0	0.2	50.9	-0.
GM/MWE-YR	44.66	0.05	0.13	0.00	0.02	0.00	0.03	7.63	-0.
GM/MWH	0.0051	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0009	-0.
GM/TON	611.8	0.7	1.8	0.0	0.3	0.0	0.3	104.6	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	2.8	0.0	0.1	4.3	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	269	1782	544	7359	18	1288	14	392	0
AVERAGE	269	1731	543	7592	18	1329	14	407	0
FINAL	271	1766	542	7840	20	1373	15	424	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	9.3021	0.0065	0.0003	0.0001	0.0078	0.0001	0.0310	2.4855	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	7.6	92.3	0.1	20.2	0.2	79.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0009	0.0000	0.0001	0.0014	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	366.8	0.3	3.2	0.0	0.3	0.0	1.2	98.0	-0.
GM/MWE-YR	55.03	0.04	0.48	0.00	0.05	0.00	0.18	14.70	-0.
GM/MWH	0.0063	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0017	-0.
GM/TON	1005.0	0.7	8.7	0.0	0.8	0.0	3.3	268.5	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	5.5	0.0	0.5	8.2	0.

EXPOSURE 24921.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 7001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	269	1782	544	7359	18	1288	14	392	0
AVERAGE	269	1739	542	7650	19	1339	14	411	0
FINAL	270	1775	538	7927	20	1388	15	430	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.010	0.000	0.001	0.000	0.000	0.000	0.000	0.008	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	15.2124	0.0022	0.3841	0.0000	0.0140	0.0002	0.4537	7.1057	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	0.6	99.4	0.0	3.0	0.0	96.9	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0017	0.0000	0.0013	0.0040	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	481.4	0.1	12.2	0.0	0.4	0.0	14.4	227.7	-0.
GM/MWE-YR	72.22	0.01	1.82	0.00	0.07	0.00	2.15	34.16	-0.
GM/MWH	0.0082	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0039	-0.
GM/TON	1643.6	0.2	41.5	0.0	1.5	0.0	49.0	777.4	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	8.0	0.0	6.0	19.1	0.

GRADED FINAL K 1.124

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 7001

XPOSURE 24941.0 MWD/T
HERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.41 YRS,

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
NITS OF 0.45
EAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	6701.55	1643.59	777.44	183.0	43.8	78.8	69.5	0.23	41.50	1.52	49.02
0.09	15.0	6701.55	1643.59	777.29	183.0	43.9	78.6	69.5	0.41	41.50	1.42	48.94
0.18	30.0	6701.55	1643.59	777.13	183.0	44.0	78.4	69.5	0.58	41.50	1.33	48.86
0.28	45.0	6701.55	1643.59	776.96	183.0	44.1	78.3	69.5	0.75	41.50	1.25	48.78
0.37	60.0	6701.55	1643.59	776.79	183.0	44.1	78.1	69.5	0.92	41.50	1.17	48.71
0.55	90.0	6701.55	1643.59	776.44	183.0	44.3	77.7	69.5	1.26	41.50	1.03	48.55
0.74	120.0	6701.55	1643.59	776.06	183.0	44.5	77.4	69.5	1.60	41.50	0.91	48.39
0.92	150.0	6701.55	1643.59	775.68	183.0	44.6	77.1	69.5	1.94	41.50	0.80	48.24
1.10	180.0	6701.55	1643.59	775.28	183.0	44.8	76.7	69.5	2.27	41.50	0.71	48.08
2.21	360.0	6701.55	1643.59	772.68	183.0	45.7	74.7	69.5	4.26	41.49	0.33	47.16
4.41	720.0	6701.55	1643.60	767.03	183.0	47.5	70.9	69.5	8.08	41.49	0.07	45.36
6.13	1000.0	6701.55	1643.61	762.52	183.0	48.8	68.1	69.5	10.91	41.49	0.02	44.01

*** GM/MWE-YEAR ***

0.	0.	294.955	72.339	34.218	8.06	1.93	3.47	3.06	0.010	1.826	0.067	2.158
0.09	15.0	294.955	72.339	34.211	8.06	1.93	3.46	3.06	0.018	1.826	0.063	2.154
0.18	30.0	294.955	72.339	34.204	8.06	1.94	3.45	3.06	0.025	1.826	0.059	2.151
0.28	45.0	294.955	72.339	34.196	8.06	1.94	3.44	3.06	0.033	1.826	0.055	2.147
0.37	60.0	294.955	72.339	34.189	8.06	1.94	3.44	3.06	0.040	1.826	0.052	2.144
0.55	90.0	294.955	72.339	34.173	8.06	1.95	3.42	3.06	0.055	1.826	0.046	2.137
0.74	120.0	294.955	72.339	34.157	8.06	1.96	3.41	3.06	0.070	1.826	0.040	2.130
0.92	150.0	294.955	72.339	34.140	8.06	1.96	3.39	3.06	0.085	1.826	0.035	2.123
1.10	180.0	294.955	72.339	34.122	8.06	1.97	3.38	3.06	0.108	1.826	0.031	2.116
2.21	360.0	294.955	72.339	34.008	8.06	2.01	3.29	3.06	0.168	1.826	0.014	2.075
4.41	720.0	294.955	72.340	33.759	8.06	2.09	3.12	3.06	0.356	1.826	0.003	1.996
6.13	1000.0	294.955	72.340	33.561	8.06	2.15	3.00	3.06	0.480	1.826	0.001	1.937

GRADED FINAL K 1.124

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 7001

TIME AFTER REACTOR DISCHARGE
NITS OF 0.45
EAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWD ***

0.	0.	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.09	15.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.18	30.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.28	45.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.37	60.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.55	90.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.74	120.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
0.92	150.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
1.10	180.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
2.21	360.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
4.41	720.0	0.0149	0.0083	0.0039	0.0009	0.0002	0.0004	0.0003	0.0000	0.0002	0.0000	0.0002
6.13	1000.0	0.0149	0.0083	0.0038	0.0009	0.0002	0.0003	0.0003	0.0000	0.0002	0.0000	0.0002

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	19.1619	0.	0.	0.	0.	0.000	0.	8.01	6.041
0.09	15.0	0.	0.	19.1581	0.	0.	0.	0.	0.000	0.	7.51	6.032
0.18	30.0	0.	0.	19.1541	0.	0.	0.	0.	0.000	0.	7.05	6.022
0.28	45.0	0.	0.	19.1500	0.	0.	0.	0.	0.000	0.	6.61	6.012
0.37	60.0	0.	0.	19.1458	0.	0.	0.	0.	0.000	0.	6.21	6.002
0.55	90.0	0.	0.	19.1370	0.	0.	0.	0.	0.001	0.	5.46	5.983
0.74	120.0	0.	0.	19.1278	0.	0.	0.	0.	0.001	0.	4.81	5.964
0.92	150.0	0.	0.	19.1183	0.	0.	0.	0.	0.001	0.	4.23	5.944
1.10	180.0	0.	0.	19.1084	0.	0.	0.	0.	0.001	0.	3.73	5.925
2.21	360.0	0.	0.	19.0445	0.	0.	0.	0.	0.002	0.	1.73	5.811
4.41	720.0	0.	0.	18.9052	0.	0.	0.	0.	0.004	0.	0.38	5.590
6.13	1000.0	0.	0.	18.7939	0.	0.	0.	0.	0.005	0.	0.11	5.424

GRADED FINAL K 1.124

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 7001

TIME AFTER REACTOR DISCHARGE		PERCENT OF ELEMENT										
HALF-LIVES	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
0.	0.	79.59	100.00	67.45	15.88	3.80	6.83	6.03	0.56	99.44	3.00	97.00
0.09	15.0	79.54	100.00	67.45	15.88	3.81	6.82	6.03	0.97	99.03	2.82	97.18
0.18	30.0	79.54	100.00	67.45	15.89	3.82	6.81	6.04	1.37	98.63	2.66	97.34
0.28	45.0	79.54	100.00	67.45	15.89	3.83	6.79	6.04	1.77	98.23	2.50	97.50
0.37	60.0	79.54	100.00	67.45	15.89	3.83	6.78	6.04	2.17	97.83	2.36	97.64
0.55	90.0	79.53	100.00	67.45	15.90	3.85	6.75	6.04	2.95	97.05	2.09	97.91
0.74	120.0	79.53	100.00	67.46	15.91	3.86	6.73	6.04	3.71	96.29	1.85	98.15
0.92	150.0	79.52	100.00	67.45	15.92	3.88	6.70	6.05	4.46	95.54	1.63	98.37
1.10	180.0	79.52	100.00	67.45	15.92	3.90	6.68	6.05	5.20	94.80	1.45	98.55
2.21	360.0	79.49	100.00	67.44	15.98	3.99	6.52	6.07	9.31	90.69	0.69	99.31
4.41	720.0	79.44	100.00	67.40	16.08	4.17	6.23	6.11	16.30	83.70	0.16	99.84
6.13	1000.0	79.39	100.00	67.36	16.17	4.31	6.01	6.14	20.82	79.18	0.09	99.95

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 7001

EXPOSURE 24921.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.41 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		URANIUM RECOVERED		NEPTUNIUM RECOVERED	PLUTONIUM RECOVERED						
HALF-LIVES	DAYS	SEPARATION DAYS		U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
			YIELD FACTOR	0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.
0.74	120.0	0.		6500.51	1673.3	1561.41	752.78	177.5	43.1	75.1	67.5	0.	0.
0.83	135.0	15.0		6500.51	1673.3	1561.41	752.54	177.5	43.1	74.9	67.5	0.00	0.16
1.00	163.0	43.0		6500.51	1673.3	1561.41	752.09	177.5	43.1	74.6	67.5	0.00	0.47
2.00	326.0	206.0		6500.51	1673.3	1561.41	749.48	177.5	43.1	72.9	67.5	0.00	2.22
3.00	489.0	369.0		6500.51	1673.3	1561.41	746.88	177.5	43.1	71.1	67.5	0.00	3.93
4.00	652.0	532.0		6500.51	1673.3	1561.41	744.29	177.5	43.1	69.5	67.5	0.01	5.60
5.00	815.0	695.0		6500.51	1673.3	1561.41	741.71	177.5	43.1	67.6	67.5	0.01	7.23
6.00	978.0	858.0		6500.51	1673.3	1561.41	739.14	177.5	43.1	66.2	67.5	0.02	8.82
7.00	1141.0	1021.0		6500.51	1673.3	1561.41	736.57	177.5	43.1	64.7	67.5	0.02	10.37

TIME AFTER DISCHARGE		TIME AFTER SEPARATION		AMERICIUM RECOVERED				CURIUM RECOVERED			
HALF-LIVES	DAYS	SEPARATION DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
			YIELD FACTOR	0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.		1.52	39.42	0.	0.	0.86	45.97	0.	0.
0.83	135.0	15.0		1.52	39.42	0.00	0.00	0.81	45.90	0.05	0.07
1.00	163.0	43.0		1.52	39.42	0.00	0.00	0.72	45.76	0.14	0.21
2.00	326.0	206.0		1.52	39.42	0.00	0.00	0.36	44.96	0.50	1.01
3.00	489.0	369.0		1.52	39.42	0.00	0.00	0.18	44.18	0.68	1.79
4.00	652.0	532.0		1.52	39.42	0.00	0.01	0.09	43.41	0.77	2.56
5.00	815.0	695.0		1.52	39.42	0.00	0.01	0.05	42.65	0.81	3.32
6.00	978.0	858.0		1.51	39.41	0.01	0.01	0.02	41.91	0.83	4.06
7.00	1141.0	1021.0		1.51	39.41	0.01	0.01	0.01	41.18	0.84	4.79

GRADED FINAL K 1,124

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 7001

ME AFTER DISCHARGE			URANIUM		NEPTUNIUM	PLUTONIUM						
0.45 YR	TIME AFTER	SEPARATION	RECOVERED...		RECOVERED	RECOVERED...						
HALF-LIVES	DAYS	DAYS	U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	286.11	73.65	68.72	33.13	7.81	1.90	3.30	2.97	0.	0.
0.83	135.0	15.0	286.11	73.65	68.72	33.12	7.81	1.90	3.30	2.97	0.00	0.01
1.00	163.0	43.0	286.11	73.65	68.72	33.10	7.81	1.90	3.28	2.97	0.00	0.02
2.00	326.0	206.0	286.11	73.65	68.72	32.99	7.81	1.90	3.21	2.97	0.00	0.10
3.00	489.0	369.0	286.11	73.65	68.72	32.87	7.81	1.90	3.13	2.97	0.00	0.17
4.00	652.0	532.0	286.11	73.65	68.72	32.76	7.81	1.90	3.06	2.97	0.00	0.25
5.00	815.0	695.0	286.11	73.65	68.72	32.64	7.81	1.90	2.99	2.97	0.00	0.32
6.00	978.0	858.0	286.11	73.65	68.72	32.53	7.81	1.90	2.92	2.97	0.00	0.39
7.00	1141.0	1021.0	286.11	73.65	68.72	32.42	7.81	1.90	2.85	2.97	0.00	0.46

ME AFTER DISCHARGE			AMERICIUM				CURIUM			
0.45 YR	TIME AFTER	SEPARATION	RECOVERED...				RECOVERED...			
HALF-LIVES	DAYS	DAYS	AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.07	1.74	0.	0.	0.04	2.02	0.	0.
0.83	135.0	15.0	0.07	1.74	0.00	0.0000	0.04	2.02	0.00	0.00
1.00	163.0	43.0	0.07	1.74	0.00	0.0000	0.03	2.01	0.01	0.01
2.00	326.0	206.0	0.07	1.73	0.00	0.0001	0.02	1.98	0.02	0.04
3.00	489.0	369.0	0.07	1.73	0.00	0.0002	0.01	1.94	0.03	0.08
4.00	652.0	532.0	0.07	1.73	0.00	0.0002	0.00	1.91	0.03	0.11
5.00	815.0	695.0	0.07	1.73	0.00	0.0003	0.00	1.88	0.04	0.15
6.00	978.0	858.0	0.07	1.73	0.00	0.0004	0.00	1.84	0.04	0.18
7.00	1141.0	1021.0	0.07	1.73	0.00	0.0004	0.00	1.81	0.04	0.21

GRADED FINAL K 1,124

*** AFTER SEPARATION ***
*** GM/MWE ***

CASE NUMBER 7001

ME AFTER DISCHARGE			URANIUM		NEPTUNIUM	PLUTONIUM						
0.45 YR	TIME AFTER	SEPARATION	RECOVERED...		RECOVERED	RECOVERED...						
HALF-LIVES	DAYS	DAYS	U236	OTHER U	NP237	PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0139	±0.1649	0.0078	0.0038	0.0009	0.0002	0.0004	0.0003	0.	0.
0.83	135.0	15.0	0.0139	±0.1649	0.0078	0.0038	0.0009	0.0002	0.0004	0.0003	0.0000	0.0000
1.00	163.0	43.0	0.0139	±0.1649	0.0078	0.0038	0.0009	0.0002	0.0004	0.0003	0.0000	0.0000
2.00	326.0	206.0	0.0139	±0.1649	0.0078	0.0038	0.0009	0.0002	0.0004	0.0003	0.0000	0.0000
3.00	489.0	369.0	0.0139	±0.1649	0.0078	0.0037	0.0009	0.0002	0.0004	0.0003	0.0000	0.0000
4.00	652.0	532.0	0.0139	±0.1649	0.0078	0.0037	0.0009	0.0002	0.0003	0.0003	0.0000	0.0000
5.00	815.0	695.0	0.0139	±0.1649	0.0078	0.0037	0.0009	0.0002	0.0003	0.0003	0.0000	0.0000
6.00	978.0	858.0	0.0139	±0.1649	0.0078	0.0037	0.0009	0.0002	0.0003	0.0003	0.0000	0.0000
7.00	1141.0	1021.0	0.0139	±0.1649	0.0078	0.0037	0.0009	0.0002	0.0003	0.0003	0.0000	0.0001

ME AFTER DISCHARGE			AMERICIUM				CURIUM			
0.45 YR	TIME AFTER	SEPARATION	RECOVERED...				RECOVERED...			
HALF-LIVES	DAYS	DAYS	AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0000	0.0002	0.	0.	0.0000	0.0002	0.	0.
0.83	135.0	15.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
1.00	163.0	43.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
2.00	326.0	206.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
3.00	489.0	369.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
4.00	652.0	532.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
5.00	815.0	695.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
6.00	978.0	858.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
7.00	1141.0	1021.0	0.0000	0.0002	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 7001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	18,5540	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	18,5481	0.	0.	0.	0.	0.	0.000
1.00	163.0	43.0	0.	0.	0.	18,5370	0.	0.	0.	0.	0.	0.000
2.00	326.0	206.0	0.	0.	0.	18,4727	0.	0.	0.	0.	0.	0.001
3.00	489.0	369.0	0.	0.	0.	18,4086	0.	0.	0.	0.	0.	0.002
4.00	652.0	532.0	0.	0.	0.	18,3448	0.	0.	0.	0.	0.	0.003
5.00	815.0	695.0	0.	0.	0.	18,2811	0.	0.	0.	0.	0.	0.004
6.00	978.0	858.0	0.	0.	0.	18,2177	0.	0.	0.	0.	0.	0.004
7.00	1141.0	1021.0	0.	0.	0.	18,1545	0.	0.	0.	0.	0.	0.005

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.001	0.	0.	0.	4.57	5.665	0.	0.
0.83	135.0	15.0	0.001	0.	0.	0.	4.29	5.656	0.0013	0.
1.00	163.0	43.0	0.001	0.	0.	0.	3.80	5.639	0.0036	0.
2.00	326.0	206.0	0.001	0.	0.	0.	1.90	5.541	0.0124	0.
3.00	489.0	369.0	0.001	0.	0.	0.	0.95	5.445	0.0168	0.
4.00	652.0	532.0	0.001	0.	0.	0.	0.48	5.350	0.0190	0.
5.00	815.0	695.0	0.001	0.	0.	0.	0.24	5.256	0.0200	0.
6.00	978.0	858.0	0.001	0.	0.	0.	0.12	5.165	0.0205	0.
7.00	1141.0	1021.0	0.001	0.	0.	0.	0.06	5.075	0.0207	0.

GRADED FINAL K 1.124

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 7001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	79.53	20.47	100.00	67.46	15.91	3.86	6.73	6.04	100.00	100.00
0.83	135.0	15.0	79.53	20.47	100.00	67.46	15.91	3.87	6.72	6.05	100.00	100.00
1.00	163.0	43.0	79.53	20.47	100.00	67.46	15.92	3.87	6.69	6.05	100.00	100.00
2.00	326.0	206.0	79.53	20.47	100.00	67.49	15.99	3.88	6.56	6.07	100.00	100.00
3.00	489.0	369.0	79.53	20.47	100.00	67.52	16.05	3.90	6.43	6.10	100.00	100.00
4.00	652.0	532.0	79.53	20.47	100.00	67.55	16.11	3.91	6.30	6.12	100.00	100.00
5.00	815.0	695.0	79.53	20.47	100.00	67.57	16.17	3.93	6.18	6.15	100.00	100.00
6.00	978.0	858.0	79.53	20.47	100.00	67.59	16.24	3.94	6.06	6.17	100.00	100.00
7.00	1141.0	1021.0	79.53	20.47	100.00	67.61	16.30	3.96	5.94	6.19	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	3.71	96.29	100.00	100.00	1.85	98.15	0.	0.
0.83	135.0	15.0	3.71	96.29	100.00	100.00	1.74	98.26	41.83	58.17
1.00	163.0	43.0	3.71	96.29	100.00	100.00	1.55	98.45	40.45	59.55
2.00	326.0	206.0	3.71	96.29	100.00	100.00	0.79	99.21	33.27	66.73
3.00	489.0	369.0	3.71	96.29	100.00	100.00	0.41	99.59	27.54	72.46
4.00	652.0	532.0	3.71	96.29	100.00	100.00	0.21	99.79	23.08	76.92
5.00	815.0	695.0	3.70	96.30	100.00	100.00	0.11	99.89	19.64	80.36
6.00	978.0	858.0	3.70	96.30	100.00	100.00	0.05	99.95	16.98	83.02
7.00	1141.0	1021.0	3.70	96.30	100.00	100.00	0.03	99.97	14.90	85.10

*** SPECIAL PRODUCT CONCENTRATIONS ***

FULLY ENRICHED URANIUM, WITH U-236 RECYCLE

CASE NUMBER 7001

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 1600.0 GRAMS/TON

BATCH BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 8000Z

ZONE SPECTRUM

EXPOSURE, MWD/T	24093.0	INITIAL FLUX, N/SQ CM-SEC	2.14E 13	FISSILE RATIO	0.18	U235 IN TAILS/U235 ENR	0.92
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	3.31E 13	INITIAL CONV RATIO	0.92	KG NATURAL/KG PRODUCED	29.027
RESIDENCE TIME, YRS	3.29	MAX FLUX/MIN FLUX	4.42	NONFUEL X-SECT 1/CM	0.035	KG NAT U/MWE-YR	173.970
TOTAL ENRICHMENT	2.34	AVG NEUTRON TEMP, C	149	FUEL DENSITY	9.26	AVERAGE R	0.263
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.85	WATTS/CC	185.12	DT (NO LOSSES)	0	DT (AEC LOSSES)	0
INITIAL REACTIVITY	1.001	FINAL INTEGRATED REACTIVITY	1.078	FINAL REACTIVITY	1.030	REACTIVITY CHANGE/MWD, MK	0.0021

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	992	0	0	495	0	0.	1530	0	1262	0
AVERAGE	0.	688	0	0	520	0	0.	1090	0	1111	0
FINAL	0.	518	0	0	542	0	0.	810	0	1033	0
ABSORPTION-INITIAL	90.44	1093	610	299	650	120	46.01	2449	6297	1760	950
AVERAGE	41.41	774	273	184	642	51	20.74	1642	2028	1523	396
FINAL	8.82	568	91	96	636	8	3.47	1131	347	1395	35
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.275	0.	0.	-0.	0.	-0.	0.
AVERAGE	0.	0.000	0.	0.	0.118	0.	0.	0.050	0.	0.012	0.
FINAL	0.	0.000	0.	0.	0.033	0.	0.	0.023	0.	0.009	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.362	0.039	0.193	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.148	0.018	0.084	0.075	0.019	0.016	0.001
FINAL	0.000	0.000	0.000	0.000	0.039	0.003	0.014	0.032	0.007	0.012	0.000
ALPHA	0.	0.148	0.	0.	0.313	0.	0.	0.601	0.	0.395	0.
AVERAGE	0.	0.123	0.	0.	0.235	0.	0.	0.496	0.	0.370	0.
FINAL	0.	0.097	0.	0.	0.173	0.	0.	0.396	0.	0.350	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	61.1	0.	0.6	30.0	0.	8.3	0.
ETA	0.	2.23	0.	0.	1.97	0.	0.	1.93	0.	2.21	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.27	0.	2.19	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.925	0.	-0.	0.

BATCH BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 8000Z

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	2.34	0.	0.	-0.	0.	-0.	0.
FINAL	0.	0.00	0.	0.	0.26	0.	0.	0.12	0.	0.04	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	11.0	6.4	82.6	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	1.4	8.4	90.2	40.9	30.4	12.1	16.6
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.2170	0.1268	1.6545	-0.	-0.	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0000	0.0239	0.1431	1.5427	0.0114	0.0085	0.0034	0.0047
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.5	-6332.0	531.9	-3666.7	372.8	278.3	110.7	153.1
GM/MWE-YR	0.0	0.0	0.0	0.2	-949.8	79.8	-550.0	55.9	41.7	16.6	23.0
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.1084	0.0091	-0.0628	0.0064	0.0048	0.0019	0.0026
GM/TON	0.0	0.0	0.0	4.9	-20863.8	1792.6	-12081.7	1228.2	917.0	364.9	504.4
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.5	783.6	4690.7	50582.	372.8	278.3	110.7	153.1
GM/MWE-YR	0.	0.0	0.0	0.2	117.5	703.6	7587.	56.	42.	17.	23.
GM/TON	0.	0.0	0.0	4.9	2581.9	15495.7	166667.	1228.2	917.0	364.9	504.4

BATCH BURNUP

NEUTRON BALANCE

CASE NO. 8000Z

ZONE SPECTRUM

EXPOSURE, MWD/TON 24053.0 INITIAL ENRICH. 2.34 POWER DENS. MW/T 0. AV. NEUTRON TEMPERATURE, C 149.
 RESIDENCE TIME, YRS 3.29 AVERAGE R 0.263 KW/GRAMS FISSLE 0.85 AVERAGE FLUX, NEUT/SQ CM-SEC 3.31E 13

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	REACTOR INITIAL	REACTOR AVERAGE	REACTOR FINAL	NON-FISSILE CAPTURE	REACTOR INITIAL	REACTOR AVERAGE	REACTOR FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	185.36	122.23	97.20	IN TH-232	-0.	0.00	0.00
FROM PU-239	-0.	60.64	80.93	IN U-234	-0.	0.00	0.01
FROM PU-241	-0.	14.80	31.78	IN U-238	52.57	36.14	16.16
TOTAL	185.36	197.67	209.51	IN PU-240	-0.	8.08	8.82
				TOTAL	52.57	44.22	24.99
NET FROM U-238	1.35	0.81	0.10				
NET FROM U-238	0.	0.	0.				
TOTAL	186.71	198.48	209.61				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	10.60	7.67	3.48
IN U-235	76.15	49.18	39.93	IN PU-242	-0.	0.41	0.49
IN PU-239	-0.	20.84	27.91	IN SPECIAL PRODUCTS	-0.	4.73	14.13
IN PU-241	-0.	4.89	10.49	TOTAL	10.60	12.81	20.30
TOTAL	76.15	74.92	78.34				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	4.12	6.50	18.01
IN PU-239	-0.	10.55	11.08	IN OTHER F.P.	0.	12.01	16.34
TOTAL	-0.	10.55	11.08	IN STRUCT. + MOD. + IMPUR.	5.46	8.61	23.86
				CONTROL + LEAKAGE	13.95	14.33	6.11
				TOTAL	23.53	41.45	64.32
AS CAPTURE FORMING NON-FERTILE ISOTOPES				NEUTRONS INTO OR FROM OTHER FUEL	0.	0.	0.
IN U-235	23.85	12.74	6.93	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
IN PU-241	-0.	1.80	3.68	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL	23.85	14.54	10.60	TOTAL ABSORPTION + LEAKAGE	186.71	198.48	209.61
TOTAL FISSILE ABSORPTION	100.00	100.00	100.00	FERTILE CAPTURE - (PA-233 + NP-239 NON-FERTILE CAPTURE)	52.57	44.22	24.99

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 8000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760 YR	152 YR	163 DY	32 YR	17.6 YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	327	2328	1074	7647	19	1339	14	378	0
AVERAGE	313	2111	964	7603	19	1331	14	383	0
FINAL	301	1974	879	7581	19	1327	14	391	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	6.1070	0.0150	0.0078	0.0002	0.0022	0.0000	0.0006	0.4228	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	65.5	33.8	0.7	77.7	0.1	22.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0003	0.0000	0.0000	0.0002	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	963.3	2.4	1.2	0.0	0.3	0.0	0.1	66.7	-0.
GM/MWE-YR	144.49	0.36	0.18	0.00	0.05	0.00	0.01	10.00	-0.
GM/MWH	0.0165	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0011	-0.
GM/TON	659.8	1.6	0.8	0.0	0.2	0.0	0.1	45.7	-0.
WATTS/MWE-YR	0.	0.0	0.0	0.0	6.1	0.0	0.0	5.6	0.

EXPOSURE: 10000.0 MMH/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 90001

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	327	2328	1074	7647	19	1339	14	375	0
AVERAGE	301	1983	885	7584	19	1327	14	391	0
FINAL	261	1978	630	7519	19	1316	14	420	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.
FINAL	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	10.8328	0.0841	0.0958	0.0011	0.0016	0.0001	0.0159	1.4439	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	46.7	52.7	0.6	97.7	0.2	42.1	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0026	0.0000	0.0000	0.0008	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	854.4	6.6	7.6	0.1	1.7	0.0	1.3	113.9	-0.
GM/MWE-YR	128.15	1.00	1.13	0.01	0.26	0.00	0.19	17.08	-0.
GM/MWH	0.0146	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0019	-0.
GM/TON	1170.4	9.1	10.3	0.1	2.3	0.0	1.7	156.0	-0.
WATTS/MWE-YR	0.	0.1	0.0	0.0	30.6	0.0	0.5	9.6	0.

EXPOSURE 15000.0 MMH/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 80002

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	192 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	327	2328	1074	7647	19	1339	14	375	0
AVERAGE	286	1835	792	7570	19	1325	14	402	0
FINAL	225	1224	422	7505	19	1314	14	452	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.
FINAL	0.008	0.001	0.000	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	14.3861	0.1641	0.3523	0.0023	0.0635	0.0004	0.0877	2.8392	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	31.8	67.7	0.4	42.1	0.2	57.7	100.0	0.
HEAT OUTPUT, WATTS/CC									
	0.	0.0000	0.0000	0.0000	0.0076	0.0000	0.0002	0.0016	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	756.4	6.6	18.5	0.1	3.3	0.0	4.6	149.3	-0.
GM/MWE-YR	113.46	1.29	2.78	0.02	0.50	0.00	0.69	22.39	-0.
GM/MWH	0.0130	0.0001	0.0003	0.0000	0.0001	0.0000	0.0001	0.0026	-0.
GM/TON	1554.2	17.7	38.1	0.2	6.9	0.0	9.5	306.7	-0.
WATTS/MWE-YR	0.	0.1	0.0	0.0	60.1	0.0	1.9	12.5	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 8000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	132 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	327	2328	1074	7647	19	1339	14	375	0
AVERAGE	269	1662	688	7561	19	1323	14	417	0
FINAL	196	935	264	7561	19	1324	14	485	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	16.1882	0.2081	0.7258	0.0022	0.1064	0.0010	0.2410	4.2518	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	22.4	77.4	0.2	30.7	0.3	69.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0128	0.0000	0.0007	0.0024	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	638.4	8.2	28.6	0.1	4.2	0.0	9.5	167.7	-0.
GM/MWE-YR	95.75	1.23	4.29	0.01	0.63	0.01	1.43	25.15	-0.
GM/MWH	0.0109	0.0001	0.0005	0.0000	0.0001	0.0000	0.0002	0.0029	-0.
GM/TON	1748.9	22.5	78.4	0.2	11.5	0.1	26.0	459.4	-0.
WATTS/MWE-YR	0.	0.1	0.0	0.0	75.5	0.0	4.0	14.1	0.

EXPOSURE 24093.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 8000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	132 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	327	2328	1074	7647	19	1339	14	375	0
AVERAGE	254	1515	604	7566	19	1324	14	431	0
FINAL	166	629	115	7651	19	1339	14	525	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
AVERAGE	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.
FINAL	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
FINAL	15.5705	0.1791	0.9550	0.0012	0.1296	0.0016	0.4009	4.9038	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	15.9	84.0	0.1	24.5	0.3	75.2	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0135	0.0000	0.0011	0.0027	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	910.5	5.9	31.3	0.0	4.2	0.1	13.1	160.8	-0.
GM/MWE-YR	76.58	0.88	4.76	0.01	0.64	0.01	1.97	24.12	-0.
GM/MWH	0.0087	0.0001	0.0005	0.0000	0.0001	0.0000	0.0002	0.0028	-0.
GM/TON	1682.2	19.4	103.2	0.1	14.0	0.2	43.3	529.8	-0.
WATTS/MWE-YR	0.	0.1	0.0	0.0	76.5	0.0	5.5	13.5	0.

BATCH FINAL K 1.030

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 8000Z

EXPOSURE 24053.0 MWD/Y
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.29 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE: DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/TON ***										
455.66	1682.20	529.80	1228.2	917.0	364.9	504.4	19.35	103.17	14.06	43.31
455.66	1682.20	530.50	1228.2	917.0	364.1	504.4	20.15	103.17	13.13	43.24
455.66	1682.20	531.14	1228.2	917.1	363.3	504.4	20.95	103.17	12.32	43.17
455.66	1682.21	531.73	1228.2	917.2	362.5	504.4	21.74	103.17	11.56	43.10
455.66	1682.21	532.27	1228.3	917.2	361.7	504.4	22.53	103.17	10.85	43.03
455.66	1682.21	533.23	1228.3	917.4	360.1	504.4	24.11	103.17	9.55	42.89
455.66	1682.21	534.03	1228.3	917.5	358.6	504.4	25.68	103.17	8.41	42.75
455.66	1682.22	534.70	1228.3	917.7	357.0	504.4	27.24	103.17	7.40	42.61
455.66	1682.22	535.24	1228.3	917.8	355.4	504.4	28.80	103.17	6.51	42.48
455.66	1682.25	536.67	1228.3	918.6	346.2	504.4	37.99	103.16	3.03	41.66
455.66	1682.31	534.93	1228.3	920.2	328.5	504.4	55.64	103.16	0.66	40.07
455.66	1682.39	532.20	1228.3	921.4	315.3	504.4	68.72	103.19	0.20	38.88

*** GM/MWE-YEAR ***

0.	0.	704.798	76.711	24.160	56.01	41.81	16.64	23.00	0.883	4.709	0.638	1.975
0.09	15.0	704.798	76.711	24.191	56.01	41.82	16.60	23.00	0.919	4.705	0.599	1.972
0.18	30.0	704.798	76.711	24.221	56.01	41.82	16.57	23.00	0.955	4.705	0.562	1.969
0.28	45.0	704.798	76.711	24.248	56.01	41.82	16.53	23.00	0.991	4.705	0.527	1.965
0.37	60.0	704.798	76.711	24.272	56.01	41.83	16.49	23.00	1.027	4.705	0.495	1.962
0.55	90.0	704.798	76.711	24.316	56.01	41.83	16.42	23.00	1.099	4.705	0.435	1.956
0.74	120.0	704.798	76.711	24.353	56.01	41.84	16.35	23.00	1.171	4.705	0.383	1.950
0.92	150.0	704.798	76.711	24.383	56.01	41.85	16.28	23.00	1.242	4.705	0.337	1.943
1.10	180.0	704.798	76.711	24.408	56.01	41.85	16.21	23.00	1.313	4.705	0.297	1.937
2.21	360.0	704.798	76.712	24.473	56.01	41.89	15.79	23.00	1.732	4.704	0.138	1.900
4.41	720.0	704.798	76.716	24.393	56.01	41.96	14.98	23.00	2.537	4.704	0.030	1.827
6.13	1000.0	704.798	76.719	24.269	56.01	42.02	14.38	23.00	3.134	4.704	0.009	1.773

BATCH FINAL K 1.030

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 8000Z

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE: DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** GM/MWH ***										
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0001	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0001	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0001	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0001	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0001	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0019	0.0026	0.0001	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0018	0.0026	0.0001	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0018	0.0026	0.0002	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0017	0.0026	0.0003	0.0005	0.0000	0.0002
0.0091	0.0088	0.0028	0.0064	0.0048	0.0016	0.0026	0.0004	0.0005	0.0000	0.0002

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	13.5294	0.	0.	0.	0.	0.010	0.	76.61	5.530
0.09	15.0	0.	0.	13.5471	0.	0.	0.	0.	0.010	0.	71.87	5.521
0.18	30.0	0.	0.	13.5635	0.	0.	0.	0.	0.011	0.	67.43	5.512
0.28	45.0	0.	0.	13.5786	0.	0.	0.	0.	0.011	0.	63.27	5.503
0.37	60.0	0.	0.	13.5925	0.	0.	0.	0.	0.011	0.	59.36	5.494
0.55	90.0	0.	0.	13.6170	0.	0.	0.	0.	0.012	0.	52.25	5.476
0.74	120.0	0.	0.	13.6375	0.	0.	0.	0.	0.013	0.	45.99	5.459
0.92	150.0	0.	0.	13.6544	0.	0.	0.	0.	0.014	0.	40.49	5.441
1.10	180.0	0.	0.	13.6683	0.	0.	0.	0.	0.014	0.	35.64	5.423
2.21	360.0	0.	0.	13.7047	0.	0.	0.	0.	0.019	0.	16.58	5.319
4.41	720.0	0.	0.	13.6603	0.	0.	0.	0.	0.028	0.	3.59	5.117
6.13	1000.0	0.	0.	13.5906	0.	0.	0.	0.	0.034	0.	1.09	4.965

BATCH FINAL K 1.030

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 8000Z

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***										
0.	0.	8.37	100.00	14.95	34.65	25.87	10.30	14.23	15.80	84.20
0.09	15.0	8.37	100.00	14.97	34.65	25.87	10.27	14.23	16.34	83.66
0.18	30.0	8.37	100.00	14.99	34.66	25.88	10.25	14.23	16.88	83.12
0.28	45.0	8.37	100.00	15.00	34.66	25.88	10.23	14.23	17.40	82.60
0.37	60.0	8.37	100.00	15.02	34.66	25.88	10.21	14.23	17.92	82.08
0.55	90.0	8.37	100.00	15.05	34.66	25.89	10.16	14.24	18.94	81.06
0.74	120.0	8.37	100.00	15.07	34.67	25.90	10.12	14.24	19.93	80.07
0.92	150.0	8.37	100.00	15.10	34.68	25.91	10.08	14.24	20.89	79.11
1.10	180.0	8.37	100.00	15.11	34.69	25.92	10.04	14.24	21.82	78.16
2.21	360.0	8.37	100.00	15.19	34.75	25.99	9.80	14.27	26.91	73.09
4.41	720.0	8.37	100.00	15.21	34.93	26.17	9.34	14.34	35.04	64.96
6.13	1000.0	8.37	100.00	15.20	35.08	26.31	9.01	14.41	39.98	60.02

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 8000Z

EXPOSURE 24053.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.29 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....							
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241	
			YIELD FACTOR										
0.74	120.0	0.	0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.	
0.83	135.0	15.0	14991.99	164177.9	1598.10	518.01	1191.4	890.0	347.8	489.3	0.	0.	
1.00	163.0	43.0	14991.99	164177.9	1598.10	517.85	1191.4	890.0	347.0	489.3	0.00	0.76	
2.00	326.0	206.0	14991.99	164177.9	1598.10	517.54	1191.4	890.0	345.6	489.3	0.00	2.18	
3.00	489.0	369.0	14991.99	164177.9	1598.10	515.74	1191.4	890.0	337.5	489.3	0.00	10.30	
4.00	652.0	532.0	14991.99	164177.9	1598.10	513.95	1191.4	890.0	329.6	489.3	0.01	18.22	
5.00	815.0	695.0	14991.99	164177.9	1598.10	512.17	1191.4	890.0	321.8	489.3	0.03	25.95	
6.00	978.0	858.0	14991.99	164177.9	1598.10	510.39	1191.4	890.0	314.3	489.3	0.05	33.50	
7.00	1141.0	1021.0	14991.99	164177.9	1598.10	508.62	1191.4	890.0	306.9	489.3	0.07	40.86	
						506.86	1191.4	890.0	299.7	489.3	0.10	48.05	

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
			YIELD FACTOR							
0.74	120.0	0.	0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.83	135.0	15.0	24.39	98.01	0.	0.	7.98	40.61	0.	0.
1.00	163.0	43.0	24.39	98.01	0.00	0.00	7.49	40.55	0.49	0.07
2.00	326.0	206.0	24.39	98.01	0.00	0.00	6.65	40.43	1.33	0.19
3.00	489.0	369.0	24.37	98.01	0.02	0.01	3.33	39.72	4.65	0.89
4.00	652.0	532.0	24.36	98.00	0.04	0.01	1.66	39.03	6.29	1.58
5.00	815.0	695.0	24.34	98.00	0.05	0.01	0.83	38.35	7.10	2.26
6.00	978.0	858.0	24.32	98.00	0.07	0.02	0.42	37.68	7.49	2.93
7.00	1141.0	1021.0	24.31	97.99	0.09	0.02	0.21	37.03	7.67	3.59
			24.29	97.99	0.10	0.02	0.10	36.38	7.75	4.23

BATCH FINAL K:1.030

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ***

CASE NUMBER 8000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	683.65	7486.72	72.88	23.62	54.33	40.59	15.86	22.31	0.	0.
0.83	135.0	15.0	683.65	7486.72	72.88	23.61	54.33	40.59	15.83	22.31	0.00	0.03
1.00	163.0	43.0	683.65	7486.72	72.88	23.60	54.33	40.59	15.76	22.31	0.00	0.10
2.00	326.0	206.0	683.65	7486.72	72.88	23.52	54.33	40.59	15.39	22.31	0.00	0.47
3.00	489.0	369.0	683.65	7486.72	72.88	23.44	54.33	40.59	15.03	22.31	0.00	0.83
4.00	652.0	532.0	683.65	7486.72	72.88	23.36	54.33	40.59	14.68	22.31	0.00	1.18
5.00	815.0	695.0	683.65	7486.72	72.88	23.27	54.33	40.59	14.33	22.31	0.00	1.53
6.00	978.0	858.0	683.65	7486.72	72.88	23.19	54.33	40.59	13.99	22.31	0.00	1.86
7.00	1141.0	1021.0	683.65	7486.72	72.88	23.11	54.33	40.59	13.66	22.31	0.00	2.19

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	1.11	4.47	0.	0.	0.36	1.85	0.	0.
0.83	135.0	15.0	1.11	4.47	0.00	0.0000	0.34	1.85	0.02	0.00
1.00	163.0	43.0	1.11	4.47	0.00	0.0000	0.30	1.84	0.06	0.01
2.00	326.0	206.0	1.11	4.47	0.00	0.0002	0.15	1.81	0.21	0.04
3.00	489.0	369.0	1.11	4.47	0.00	0.0004	0.08	1.78	0.29	0.07
4.00	652.0	532.0	1.11	4.47	0.00	0.0006	0.04	1.75	0.32	0.10
5.00	815.0	695.0	1.11	4.47	0.00	0.0008	0.02	1.72	0.34	0.13
6.00	978.0	858.0	1.11	4.47	0.00	0.0010	0.01	1.69	0.35	0.16
7.00	1141.0	1021.0	1.11	4.47	0.00	0.0011	0.00	1.66	0.35	0.19

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** GM/MWH ***

CASE NUMBER 8000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0018	0.0025	0.	0.
0.83	135.0	15.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0018	0.0025	0.0000	0.0000
1.00	163.0	43.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0018	0.0025	0.0000	0.0000
2.00	326.0	206.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0018	0.0025	0.0000	0.0001
3.00	489.0	369.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0017	0.0025	0.0000	0.0001
4.00	652.0	532.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0017	0.0025	0.0000	0.0001
5.00	815.0	695.0	0.0067	-0.1978	0.0083	0.0027	0.0062	0.0046	0.0016	0.0025	0.0000	0.0002
6.00	978.0	858.0	0.0067	-0.1978	0.0083	0.0026	0.0062	0.0046	0.0016	0.0025	0.0000	0.0002
7.00	1141.0	1021.0	0.0067	-0.1978	0.0083	0.0026	0.0062	0.0046	0.0016	0.0025	0.0000	0.0002

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0001	0.0005	0.	0.	0.0000	0.0002	0.	0.
0.83	135.0	15.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
1.00	163.0	43.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
2.00	326.0	206.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
3.00	489.0	369.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
4.00	652.0	532.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
5.00	815.0	695.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
6.00	978.0	858.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000
7.00	1141.0	1021.0	0.0001	0.0005	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 8000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	13.2283	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	13.2241	0.	0.	0.	0.	0.	0.000
1.00	163.0	43.0	0.	0.	0.	13.2162	0.	0.	0.	0.	0.	0.001
2.00	326.0	206.0	0.	0.	0.	13.1704	0.	0.	0.	0.	0.	0.005
3.00	489.0	369.0	0.	0.	0.	13.1247	0.	0.	0.	0.	0.	0.009
4.00	652.0	532.0	0.	0.	0.	13.0792	0.	0.	0.	0.	0.	0.013
5.00	815.0	695.0	0.	0.	0.	13.0338	0.	0.	0.	0.	0.	0.017
6.00	978.0	858.0	0.	0.	0.	12.9886	0.	0.	0.	0.	0.	0.020
7.00	1141.0	1021.0	0.	0.	0.	12.9435	0.	0.	0.	0.	0.	0.024

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.012	0.	0.	0.	43.69	5.186	0.	0.
0.83	135.0	15.0	0.012	0.	0.	0.	40.99	5.177	0.0126	0.
1.00	163.0	43.0	0.012	0.	0.	0.	36.39	5.162	0.0341	0.
2.00	326.0	206.0	0.012	0.	0.	0.	18.20	5.072	0.1187	0.
3.00	489.0	369.0	0.012	0.	0.	0.	9.10	4.983	0.1606	0.
4.00	652.0	532.0	0.012	0.	0.	0.	4.55	4.897	0.1813	0.
5.00	815.0	695.0	0.012	0.	0.	0.	2.28	4.811	0.1912	0.
6.00	978.0	858.0	0.012	0.	0.	0.	1.14	4.728	0.1959	0.
7.00	1141.0	1021.0	0.012	0.	0.	0.	0.57	4.645	0.1979	0.

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 8000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	8.37	91.63	100.00	15.07	34.67	25.90	10.12	14.24	100.00	100.00
0.83	135.0	15.0	8.37	91.63	100.00	15.07	34.68	25.91	10.10	14.24	100.00	100.00
1.00	163.0	43.0	8.37	91.63	100.00	15.07	34.70	25.92	10.07	14.25	100.00	100.00
2.00	326.0	206.0	8.37	91.63	100.00	15.06	34.80	25.99	9.86	14.29	100.00	100.00
3.00	489.0	369.0	8.37	91.63	100.00	15.05	34.90	26.07	9.65	14.33	100.00	100.00
4.00	652.0	532.0	8.37	91.63	100.00	15.04	34.99	26.14	9.45	14.37	100.00	100.00
5.00	815.0	695.0	8.37	91.63	100.00	15.03	35.09	26.21	9.26	14.41	100.00	100.00
6.00	978.0	858.0	8.37	91.63	100.00	15.02	35.18	26.28	9.06	14.45	100.00	100.00
7.00	1141.0	1021.0	8.37	91.63	100.00	15.01	35.28	26.35	8.87	14.49	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	19.93	80.07	100.00	100.00	16.43	83.57	0.	0.
0.83	135.0	15.0	19.93	80.07	100.00	100.00	15.59	84.41	88.26	11.74
1.00	163.0	43.0	19.93	80.07	100.00	100.00	14.13	85.87	87.65	12.35
2.00	326.0	206.0	19.92	80.08	100.00	100.00	7.73	92.27	83.90	16.10
3.00	489.0	369.0	19.91	80.09	100.00	100.00	4.09	95.91	79.89	20.11
4.00	652.0	532.0	19.90	80.10	100.00	100.00	2.12	97.88	75.82	24.18
5.00	815.0	695.0	19.89	80.11	100.00	100.00	1.09	98.91	71.87	28.13
6.00	978.0	858.0	19.88	80.12	100.00	100.00	0.56	99.44	68.13	31.87
7.00	1141.0	1021.0	19.87	80.13	100.00	100.00	0.29	99.71	64.67	35.33

*** SPECIAL PRODUCT CONCENTRATIONS ***

ZONE SPECTRUM

CASE NUMBER 8000Z

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP-20

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 18000.0 GRAMS/TON

BATCH BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9000Z

ZONE SPECTRUM

EXPOSURE, MWD/T	24128.0	INITIAL FLUX, N/SQ CM-SEC	1.20E 13	FISSILE RATIO	0.20	U235 IN TAILS/U235 ENR	-0.01
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM-SEC	2.70E 13	INITIAL CONV RATIO	0.68	KG NATURAL/KG PRODUCED	0.986
RESIDENCE TIME, YRS	3.31	MAX FLUX/MIN FLUX	6.63	NONFUEL X-SECT 1/CM	0.045	KG NAT U/MWE-YR	132.652
TOTAL ENRICHMENT	1.84	AVG NEUTRON TEMP, C	129.	FUEL DENSITY	9.26	AVERAGE R	0.249
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	1.09	WATTS/CC	185.13	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.079	FINAL INTEGRATED REACTIVITY	1.034	FINAL REACTIVITY	1.030	REACTIVITY CHANGE/MWD, MK	0.0020

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	1004	0	0	537	0	0.	1197	0	1068	0
AVERAGE	0.	664	0	0	525	0	0.	976	0	1041	0
FINAL	0.	515	0	0	537	0	0.	802	0	1021	0
ABSORPTION-INITIAL	101.02	1157	683	346	732	332	40.75	1861	1818	1464	978
AVERAGE	38.42	747	253	177	651	111	15.43	1446	850	1421	319
FINAL	9.04	565	52	96	631	12	3.38	1118	325	1379	34
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.027	0.	0.	0.386	0.	0.060	0.
AVERAGE	0.	0.000	0.	0.	0.012	0.	0.	0.137	0.	0.066	0.
FINAL	0.	0.000	0.	0.	0.004	0.	0.	0.037	0.	0.031	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.036	-0.	0.285	0.600	0.214	0.083	0.015
AVERAGE	0.000	0.000	0.000	0.000	0.015	0.000	0.106	0.206	0.085	0.090	0.009
FINAL	0.000	0.000	0.000	0.000	0.005	0.000	0.023	0.052	0.023	0.041	0.002
ALPHA	INITIAL	0.	0.152	0.	0.363	0.	0.	0.555	0.	0.371	0.
AVERAGE	0.	0.121	0.	0.	0.238	0.	0.	0.476	0.	0.364	0.
FINAL	0.	0.097	0.	0.	0.175	0.	0.	0.394	0.	0.351	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	5.6	0.	0.7	59.3	0.	34.4	0.
ETA	0.	2.23	0.	0.	1.97	0.	0.	1.96	0.	2.22	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	15.16	0.	2.15	2.25	13.97	23.18	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.388	0.	0.297	0.

BATCH BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9000Z

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	0.21	0.	0.	1.38	0.	0.24	0.
FINAL	0.	0.00	0.	0.	0.03	0.	0.	0.20	0.	0.13	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	0.7	-0.	99.3	62.9	22.9	11.0	3.1
FINAL	100.0	0.0	100.0	0.0	0.1	0.1	99.8	22.5	34.8	14.5	28.1
ISOTOPIC DENSITY, GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.0193	-0.	2.7993	0.1280	0.0468	0.0227	0.0064
FINAL	0.0000	0.0000	0.0000	0.0000	0.0031	0.0029	2.6448	0.0184	0.0287	0.0120	0.0234
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	1.4	-330.8	96.2	-3745.9	-3581.7	-593.0	-347.1	556.4
GM/MWE-YR	0.0	0.0	0.0	0.2	-79.6	14.4	-561.9	-537.2	-89.0	-52.1	83.5
GM/MWH	0.0000	0.0000	0.0000	0.0000	-0.0091	0.0016	-0.0641	-0.0613	-0.0102	-0.0059	0.0095
GM/TON	0.0	0.0	0.0	4.7	-1754.4	317.9	-12380.5	-11837.9	-1960.1	-1147.3	1838.8
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	1.4	101.5	96.2	86452.	602.8	937.4	-393.3	764.0
GM/MWE-YR	0.	0.0	0.0	0.2	15.2	14.4	12967.	90.	141.	59.	115.
GM/TON	0.	0.0	0.0	4.7	335.6	317.9	285734.	1992.2	3098.3	1299.9	2525.1

BATCH BURNUP

NEUTRON BALANCE

CASE NO. 9000Z

ZONE SPECTRUM

EXPOSURE, MWD/TON 24128.0 INITIAL ENRICH. 1.84 POWER DENS, MW/TI249.43 AV. NEUTRON TEMPERATURE, C 129.
 RESIDENCE TIME, YRS 3.31 AVERAGE R 0.249 KW/GRAMS FISSILE 1.09 AVERAGE FLUX, NEUT/SQ CM-SEC 2.70E 13

BASIS: 100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	REACTOR INITIAL	REACTOR AVERAGE	REACTOR FINAL	NON-FISSILE CAPTURE	REACTOR INITIAL	REACTOR AVERAGE	REACTOR FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	9.01	9.61	10.57	FERTILE CAPTURE			
FROM PU-239	154.83	129.75	109.22	IN TH-232	-0.	0.00	0.00
FROM PU-241	25.46	63.98	94.50	IN U-234	-0.	0.00	0.01
TOTAL	189.30	203.33	214.29	IN U-238	38.85	34.47	22.80
NET FROM U-238	1.28	0.97	0.18	IN PU-240	29.16	27.85	23.58
NET FROM U-238	0.	0.	0.	TOTAL	68.01	62.33	46.39
TOTAL	190.57	204.30	214.46				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.14	0.09
IN U-235	3.70	3.86	4.34	IN PU-242	2.11	3.02	1.99
IN PU-239	53.67	44.10	37.86	IN SPECIAL PRODUCTS	0.27	3.41	7.21
IN PU-241	8.40	21.09	31.19	TOTAL	2.38	6.57	9.29
TOTAL	65.77	69.05	73.39				
AS CAPTURE FORMING FERTILE ISOTOPES				NON-FUEL ABSORPTION + LEAKAGE			
IN U-233	-0.	0.00	0.00	IN SM + XE	3.42	8.19	25.28
IN PU-239	29.77	22.22	14.92	IN OTHER F.P.	0.	10.16	7.07
TOTAL	29.77	22.22	14.92	IN STRUCT. + MOD. + IMPUR.	2.73	6.53	20.16
				CONTROL + LEAKAGE	14.03	10.92	6.28
AS CAPTURE FORMING NON-FERTILE ISOTOPES				TOTAL	20.18	35.40	58.78
IN U-235	1.34	1.02	0.76	NEUTRONS INTO OR FROM OTHER FUEL	0.	0.	0.
IN PU-241	3.12	7.71	10.94	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
TOTAL	4.46	8.73	11.70	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL FISSION ABSORPTION	100.00	100.00	100.00	TOTAL ABSORPTION + LEAKAGE	190.57	204.30	214.46
				FERTILE CAPTURE - (PA-233 + NP-239 NON-FERTILE CAPTURE)	68.01	62.33	46.39

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP +0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	360	2604	1201	7568	19	1325	14	348	0
AVERAGE	336	2184	1053	7499	18	1312	14	360	0
FINAL	294	1788	798	7376	18	1291	14	385	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	0.
AVERAGE	0.000	0.002	0.002	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2524	-0.
FINAL	0.4140	0.7727	1.4524	0.0101	0.1326	0.0003	0.2160	2.0872	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	34.8	64.8	0.5	38.2	0.1	61.7	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0159	0.0000	0.0006	0.0012	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	65.3	121.9	229.1	1.6	20.9	0.0	34.1	-26.1	-0.
GM/MWE-YR	9.79	18.28	34.37	0.24	3.14	0.01	5.11	-3.91	-0.
GM/MWH	0.0011	0.0021	0.0039	0.0000	0.0004	0.0000	0.0006	-0.0004	-0.
GM/TON	44.7	83.5	156.9	1.1	14.3	0.0	23.3	-17.8	-0.
WATTS/MWE-YR	0.	2.0	0.2	0.0	376.5	0.0	14.3	-2.2	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 90004

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	360	2604	1201	7568	19	1325	14	348	0
AVERAGE	310	1946	898	7440	18	1302	14	376	0
FINAL	261	1508	610	7355	18	1288	14	410	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	0.
AVERAGE	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.004	0.000	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2524	-0.
FINAL	0.0008	1.3140	2.8189	0.0199	0.3705	0.0016	0.7713	2.1014	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	31.8	67.7	0.5	32.6	0.1	67.3	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0445	0.0000	0.0022	0.0012	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	63.2	103.6	222.3	1.6	29.2	0.1	60.8	-11.9	-0.
GM/MWE-YR	9.47	15.55	33.35	0.24	4.38	0.02	9.13	-1.79	-0.
GM/MWH	0.0011	0.0018	0.0038	0.0000	0.0005	0.0000	0.0010	-0.0002	-0.
GM/TON	86.5	142.0	304.6	2.2	40.0	0.2	83.3	-16.3	-0.
WATTS/MWE-YR	0.	1.7	0.2	0.0	525.9	0.0	25.6	-1.0	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	360	2604	1201	7568	19	1325	14	348	0
AVERAGE	290	1765	779	7416	18	1298	14	391	0
FINAL	233	1261	492	7390	18	1294	14	438	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	0.
AVERAGE	0.000	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.005	0.005	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2524	-0.
FINAL	1.1529	1.5205	4.2887	0.0212	0.5870	0.0041	1.6411	2.2701	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	26.2	73.4	0.4	26.5	0.2	73.4	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0704	0.0000	0.0046	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	60.6	79.9	225.5	1.1	30.9	0.2	86.3	0.9	-0.
GM/MWE-YR	9.09	11.99	33.82	0.17	4.63	0.03	12.94	0.14	-0.
GM/MWH	0.0010	0.0014	0.0039	0.0000	0.0005	0.0000	0.0015	0.0000	-0.
GM/TON	124.6	164.3	463.3	2.3	63.4	0.4	177.3	1.9	-0.
WATTS/MWE-YR	0.	1.3	0.2	0.0	555.6	0.1	36.2	0.1	0.

EXPOSURE 20000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	360	2604	1201	7568	19	1325	14	348	0
AVERAGE	271	1599	674	7415	18	1298	14	407	0
FINAL	193	888	241	7445	19	1303	14	481	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	0.
AVERAGE	0.000	0.004	0.004	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.003	0.003	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2524	-0.
FINAL	1.4158	1.3713	5.7250	0.0150	0.7184	0.0074	2.7710	2.3919	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	16.4	80.4	0.2	20.7	0.2	79.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0002	0.0000	0.0000	0.0862	0.0000	0.0078	0.0013	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	55.8	54.1	225.8	0.6	28.3	0.3	109.3	5.5	-0.
GM/MWE-YR	8.37	8.11	33.86	0.09	4.25	0.04	16.39	0.83	-0.
GM/MWH	0.0010	0.0009	0.0039	0.0000	0.0005	0.0000	0.0019	0.0001	-0.
GM/TON	153.0	148.1	618.5	1.6	77.6	0.8	299.4	15.1	-0.
WATTS/MWE-YR	0.	0.9	0.2	0.0	509.9	0.1	45.9	0.5	0.

EXPOSURE 24128.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9000Z

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	360	2604	1201	7568	19	1325	14	348	0
AVERAGE	256	1460	591	7429	18	1300	14	422	0
FINAL	165	630	116	7573	19	1326	14	519	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.002	0.
AVERAGE	0.001	0.004	0.003	0.000	0.000	0.000	0.000	0.002	0.
FINAL	0.001	0.002	0.002	0.000	0.000	0.000	0.000	0.003	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	2.2524	-0.
FINAL	1.4547	0.9931	6.3907	0.0072	0.7421	0.0097	3.7266	2.1390	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	-0.	-0.	-0.	-0.	-0.	-0.	100.0	0.
FINAL	100.0	13.5	86.4	0.1	16.7	0.2	83.1	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0001	0.0000	0.0000	0.0891	0.0000	0.0104	0.0012	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	47.6	32.5	208.9	0.2	24.3	0.3	121.8	3.7	-0.
GM/MWE-YR	7.13	4.87	31.33	0.04	3.64	0.05	18.27	0.56	-0.
GM/MWH	0.0008	0.0006	0.0036	0.0000	0.0004	0.0000	0.0021	0.0001	-0.
GM/TON	157.2	107.3	690.4	0.8	80.2	1.0	402.6	12.3	-0.
WATTS/MWE-YR	0.	0.5	0.2	0.0	436.6	0.1	51.2	0.3	0.

BATCH FINAL K 1.030

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9000Z

EXPOSURE 24128.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.30 YRS.

LOAD FACTOR 0.33

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	317.88	157.17	231.09	1992.2	3098.3	1299.9	2525.1	107.30	690.44	80.18	402.62
0.09	15.0	317.88	157.17	235.97	1992.2	3099.0	1297.1	2525.1	110.13	690.44	75.22	401.97
0.18	30.0	317.88	157.18	240.54	1992.2	3099.6	1294.2	2525.1	112.96	690.43	70.58	401.32
0.28	45.0	317.88	157.19	244.82	1992.2	3100.3	1291.4	2525.1	115.78	690.43	66.22	400.67
0.37	60.0	317.88	157.20	248.83	1992.2	3100.9	1288.6	2525.1	118.60	690.43	62.12	400.02
0.55	90.0	317.88	157.21	256.11	1992.2	3102.2	1282.9	2525.1	124.22	690.42	54.69	398.73
0.74	120.0	317.88	157.23	262.49	1992.2	3103.5	1277.3	2525.1	129.81	690.42	48.14	397.44
0.92	150.0	317.88	157.24	268.09	1992.2	3104.8	1271.8	2525.1	135.37	690.41	42.37	396.16
1.10	180.0	317.88	157.26	272.99	1992.2	3106.1	1266.2	2525.1	140.91	690.41	37.30	394.88
2.21	360.0	317.88	157.38	291.85	1992.3	3113.6	1233.4	2525.1	173.62	690.38	17.35	387.29
4.41	720.0	317.88	157.68	303.15	1992.3	3128.4	1170.2	2525.1	236.45	690.32	3.76	372.55
6.13	1000.0	317.88	157.98	303.95	1992.4	3139.5	1123.4	2525.1	283.00	690.27	1.14	361.47

*** GM/MWE-YEAR ***

0.	0.	14.450	7.145	10.505	90.56	140.85	59.09	114.79	4.878	31.387	3.645	18.303
0.09	15.0	14.450	7.145	10.727	90.56	140.88	58.96	114.79	5.007	31.387	3.420	18.273
0.18	30.0	14.450	7.145	10.935	90.56	140.91	58.84	114.79	5.135	31.387	3.208	18.244
0.28	45.0	14.450	7.146	11.129	90.57	140.94	58.71	114.79	5.264	31.387	3.010	18.214
0.37	60.0	14.450	7.146	11.312	90.57	140.97	58.58	114.79	5.392	31.387	2.824	18.185
0.55	90.0	14.450	7.147	11.643	90.57	141.02	58.32	114.79	5.647	31.386	2.486	18.126
0.74	120.0	14.450	7.147	11.933	90.57	141.08	58.07	114.79	5.901	31.386	2.188	18.068
0.92	150.0	14.450	7.148	12.187	90.57	141.14	57.81	114.79	6.154	31.386	1.926	18.009
1.10	180.0	14.450	7.149	12.410	90.57	141.20	57.56	114.79	6.406	31.386	1.696	17.951
2.21	360.0	14.450	7.154	13.267	90.57	141.54	56.07	114.79	7.893	31.384	0.789	17.606
4.41	720.0	14.450	7.168	13.781	90.57	142.22	53.20	114.79	10.749	31.381	0.171	16.936
6.13	1000.0	14.450	7.182	13.817	90.57	142.72	51.07	114.79	12.865	31.379	0.052	16.432

BATCH FINAL K 1.030

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9000Z

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.0016	0.0008	-0.0001	-0.0614	-0.0102	-0.0059	0.0095	0.0006	0.0036	0.0004	0.0021
0.09	15.0	0.0016	0.0008	-0.0000	-0.0614	-0.0102	-0.0060	0.0095	0.0006	0.0036	0.0004	0.0021
0.18	30.0	0.0016	0.0008	-0.0000	-0.0614	-0.0102	-0.0060	0.0095	0.0006	0.0036	0.0004	0.0021
0.28	45.0	0.0016	0.0008	0.0000	-0.0614	-0.0102	-0.0060	0.0095	0.0006	0.0036	0.0003	0.0021
0.37	60.0	0.0016	0.0008	0.0000	-0.0614	-0.0102	-0.0060	0.0095	0.0006	0.0036	0.0003	0.0021
0.55	90.0	0.0016	0.0008	0.0001	-0.0614	-0.0101	-0.0060	0.0095	0.0006	0.0036	0.0003	0.0021
0.74	120.0	0.0016	0.0008	0.0001	-0.0614	-0.0101	-0.0061	0.0095	0.0007	0.0036	0.0002	0.0021
0.92	150.0	0.0016	0.0008	0.0001	-0.0614	-0.0101	-0.0061	0.0095	0.0007	0.0036	0.0002	0.0021
1.10	180.0	0.0016	0.0008	0.0002	-0.0614	-0.0101	-0.0061	0.0095	0.0007	0.0036	0.0002	0.0021
2.21	360.0	0.0016	0.0008	0.0003	-0.0614	-0.0101	-0.0063	0.0095	0.0009	0.0036	0.0001	0.0020
4.41	720.0	0.0016	0.0008	0.0003	-0.0614	-0.0100	-0.0066	0.0095	0.0012	0.0036	0.0000	0.0019
6.13	1000.0	0.0016	0.0008	0.0003	-0.0614	-0.0100	-0.0069	0.0095	0.0015	0.0036	0.0000	0.0019

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	5.8829	0.	0.	0.	0.	0.054	0.	437.37	51.248
0.09	15.0	0.	0.	6.0071	0.	0.	0.	0.	0.055	0.	410.35	51.165
0.18	30.0	0.	0.	6.1235	0.	0.	0.	0.	0.056	0.	385.00	51.083
0.28	45.0	0.	0.	6.2329	0.	0.	0.	0.	0.058	0.	361.21	51.008
0.37	60.0	0.	0.	6.3346	0.	0.	0.	0.	0.059	0.	338.90	50.918
0.55	90.0	0.	0.	6.5199	0.	0.	0.	0.	0.062	0.	298.31	50.753
0.74	120.0	0.	0.	6.6824	0.	0.	0.	0.	0.065	0.	262.59	50.589
0.92	150.0	0.	0.	6.8248	0.	0.	0.	0.	0.068	0.	231.15	50.426
1.10	180.0	0.	0.	6.9496	0.	0.	0.	0.	0.070	0.	203.47	50.263
2.21	360.0	0.	0.	7.4297	0.	0.	0.	0.	0.087	0.	94.65	49.297
4.41	720.0	0.	0.	7.7173	0.	0.	0.	0.	0.118	0.	20.48	47.421
6.13	1000.0	0.	0.	7.7377	0.	0.	0.	0.	0.142	0.	6.23	46.011

BATCH FINAL K 1.030

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 9000Z

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***											
0.	0.11	100.00	2.53	21.78	33.87	14.21	27.61	13.45	86.55	16.61	83.39
0.09	0.11	100.00	2.58	21.77	33.87	14.18	27.60	13.76	86.24	15.76	84.24
0.18	0.11	100.00	2.63	21.77	33.87	14.14	27.59	14.06	85.94	14.96	85.04
0.28	0.11	100.00	2.67	21.76	33.87	14.11	27.59	14.36	85.64	14.18	85.82
0.37	0.11	100.00	2.72	21.76	33.87	14.07	27.58	14.66	85.34	13.44	86.56
0.55	0.11	100.00	2.80	21.75	33.87	14.01	27.57	15.25	84.75	12.06	87.94
0.74	0.11	100.00	2.87	21.75	33.88	13.94	27.56	15.83	84.17	10.80	89.20
0.92	0.11	100.00	2.93	21.74	33.89	13.88	27.56	16.39	83.61	9.66	90.34
1.10	0.11	100.00	2.98	21.74	33.90	13.82	27.56	16.95	83.05	8.63	91.37
2.21	0.11	100.00	3.19	21.76	34.01	13.47	27.58	20.10	79.90	4.29	95.71
4.41	0.11	100.00	3.32	21.85	34.31	12.83	27.69	25.51	74.49	1.00	99.00
6.13	0.11	100.00	3.35	21.93	34.56	12.37	27.80	29.08	70.92	0.31	99.69

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** GM/TON ***

CASE NUMBER 9000Z

EXPOSURE 24128.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.30 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....							
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241	
			YIELD FACTOR										
			0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.	
0.74	120.0	0.	308.34	277492.4	149.36	254.62	1932.5	3010.4	1239.0	2449.3	0.	0.	
0.83	135.0	15.0	308.34	277492.4	149.36	254.54	1932.5	3010.4	1236.3	2449.3	0.00	2.71	
1.00	163.0	43.0	308.34	277492.4	149.36	254.39	1932.5	3010.4	1231.3	2449.3	0.00	7.75	
2.00	326.0	206.0	308.34	277492.4	149.36	253.50	1932.5	3010.4	1202.3	2449.3	0.02	36.68	
3.00	489.0	369.0	308.34	277492.4	149.36	252.62	1932.5	3010.4	1174.1	2449.3	0.05	64.91	
4.00	652.0	532.0	308.34	277492.4	149.36	251.75	1932.5	3010.4	1146.5	2449.3	0.10	92.46	
5.00	815.0	695.0	308.34	277492.4	149.36	250.87	1932.5	3010.4	1119.5	2449.3	0.17	119.34	
6.00	978.0	858.0	308.34	277492.4	149.36	250.00	1932.5	3010.4	1093.2	2449.3	0.26	145.57	
7.00	1141.0	1021.0	308.34	277492.4	149.36	249.14	1932.5	3010.4	1067.5	2449.3	0.37	171.16	

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....					
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240		
			YIELD FACTOR									
			0.950	0.950	0.	0.	0.950	0.950	0.	0.		
0.74	120.0	0.	123.31	655.90	0.	0.	45.73	377.57	0.	0.		
0.83	135.0	15.0	123.31	655.89	0.01	0.00	42.90	376.96	2.82	0.61		
1.00	163.0	43.0	123.29	655.89	0.02	0.01	38.09	375.83	7.04	1.75		
2.00	326.0	206.0	123.21	655.86	0.11	0.03	19.05	369.28	26.62	8.29		
3.00	489.0	369.0	123.13	655.84	0.19	0.06	9.53	362.85	36.03	14.72		
4.00	652.0	532.0	123.04	655.81	0.27	0.09	4.76	356.53	40.65	21.04		
5.00	815.0	695.0	122.96	655.78	0.35	0.11	2.38	350.32	42.89	27.26		
6.00	978.0	858.0	122.88	655.76	0.44	0.14	1.19	344.21	43.93	33.36		
7.00	1141.0	1021.0	122.79	655.73	0.52	0.17	0.60	338.22	44.37	39.35		

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** GM/MWE-YEAR ****

CASE NUMBER 9000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	14.02	12614.67	6.79	11.57	87.85	136.85	56.33	111.35	0.	0.
0.83	135.0	15.0	14.02	12614.67	6.79	11.57	87.85	136.85	56.20	111.35	0.00	0.12
1.00	163.0	43.0	14.02	12614.67	6.79	11.56	87.85	136.85	55.97	111.35	0.00	0.35
2.00	326.0	206.0	14.02	12614.67	6.79	11.52	87.85	136.85	54.66	111.35	0.00	1.67
3.00	489.0	369.0	14.02	12614.67	6.79	11.48	87.85	136.85	53.37	111.35	0.00	2.95
4.00	652.0	532.0	14.02	12614.67	6.79	11.44	87.85	136.85	52.12	111.35	0.00	4.20
5.00	815.0	695.0	14.02	12614.67	6.79	11.40	87.85	136.85	50.89	111.35	0.01	5.43
6.00	978.0	858.0	14.02	12614.67	6.79	11.37	87.85	136.85	49.70	111.35	0.01	6.62
7.00	1141.0	1021.0	14.02	12614.67	6.79	11.33	87.85	136.85	48.53	111.35	0.02	7.78

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	5.61	29.82	0.	0.	2.08	17.16	0.	0.
0.83	135.0	15.0	5.61	29.82	0.00	0.0001	1.95	17.14	0.13	0.03
1.00	163.0	43.0	5.60	29.82	0.00	0.0003	1.73	17.08	0.35	0.08
2.00	326.0	206.0	5.60	29.82	0.00	0.0015	0.87	16.79	1.21	0.38
3.00	489.0	369.0	5.60	29.81	0.01	0.0027	0.43	16.49	1.64	0.67
4.00	652.0	532.0	5.59	29.81	0.01	0.0039	0.22	16.21	1.85	0.96
5.00	815.0	695.0	5.59	29.81	0.02	0.0051	0.11	15.93	1.95	1.24
6.00	978.0	858.0	5.59	29.81	0.02	0.0063	0.05	15.65	2.00	1.52
7.00	1141.0	1021.0	5.58	29.81	0.02	0.0075	0.03	15.38	2.02	1.79

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** GM/MWE ****

CASE NUMBER 9000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.0016	-0.1178	0.0008	0.0001	-0.0617	-0.0106	-0.0063	0.0091	0.	0.
0.83	135.0	15.0	0.0016	-0.1178	0.0008	0.0001	-0.0617	-0.0106	-0.0063	0.0091	0.0000	0.0000
1.00	163.0	43.0	0.0016	-0.1178	0.0008	0.0001	-0.0617	-0.0106	-0.0063	0.0091	0.0000	0.0000
2.00	326.0	206.0	0.0016	-0.1178	0.0008	0.0001	-0.0617	-0.0106	-0.0065	0.0091	0.0000	0.0002
3.00	489.0	369.0	0.0016	-0.1178	0.0008	0.0000	-0.0617	-0.0106	-0.0066	0.0091	0.0000	0.0003
4.00	652.0	532.0	0.0016	-0.1178	0.0008	0.0000	-0.0617	-0.0106	-0.0067	0.0091	0.0000	0.0005
5.00	815.0	695.0	0.0016	-0.1178	0.0008	0.0000	-0.0617	-0.0106	-0.0069	0.0091	0.0000	0.0006
6.00	978.0	858.0	0.0016	-0.1178	0.0008	0.0000	-0.0617	-0.0106	-0.0070	0.0091	0.0000	0.0008
7.00	1141.0	1021.0	0.0016	-0.1178	0.0008	0.0000	-0.0617	-0.0106	-0.0072	0.0091	0.0000	0.0009

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0006	0.0034	0.	0.	0.0002	0.0020	0.	0.
0.83	135.0	15.0	0.0006	0.0034	0.0000	0.0000	0.0002	0.0020	0.0000	0.0000
1.00	163.0	43.0	0.0006	0.0034	0.0000	0.0000	0.0002	0.0019	0.0000	0.0000
2.00	326.0	206.0	0.0006	0.0034	0.0000	0.0000	0.0001	0.0019	0.0001	0.0000
3.00	489.0	369.0	0.0006	0.0034	0.0000	0.0000	0.0000	0.0019	0.0002	0.0001
4.00	652.0	532.0	0.0006	0.0034	0.0000	0.0000	0.0000	0.0018	0.0002	0.0001
5.00	815.0	695.0	0.0006	0.0034	0.0000	0.0000	0.0000	0.0018	0.0002	0.0001
6.00	978.0	858.0	0.0006	0.0034	0.0000	0.0000	0.0000	0.0018	0.0002	0.0002
7.00	1141.0	1021.0	0.0006	0.0034	0.0000	0.0000	0.0000	0.0018	0.0002	0.0002

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** WATTS/MWE-YEAR ***

CASE NUMBER 9000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	6.4819	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	6.4798	0.	0.	0.	0.	0.	0.001
1.00	163.0	43.0	0.	0.	0.	6.4760	0.	0.	0.	0.	0.	0.004
2.00	326.0	206.0	0.	0.	0.	6.4535	0.	0.	0.	0.	0.	0.018
3.00	489.0	369.0	0.	0.	0.	6.4311	0.	0.	0.	0.	0.	0.032
4.00	652.0	532.0	0.	0.	0.	6.4088	0.	0.	0.	0.	0.	0.046
5.00	815.0	695.0	0.	0.	0.	6.3866	0.	0.	0.	0.	0.	0.060
6.00	978.0	858.0	0.	0.	0.	6.3644	0.	0.	0.	0.	0.	0.073
7.00	1141.0	1021.0	0.	0.	0.	6.3424	0.	0.	0.	0.	0.	0.086

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.062	0.	0.	0.	249.46	48.060	0.	0.
0.83	135.0	15.0	0.062	0.	0.	0.	234.05	47.982	0.0719	0.
1.00	163.0	43.0	0.062	0.	0.	0.	207.78	47.838	0.1944	0.
2.00	326.0	206.0	0.062	0.	0.	0.	103.91	47.004	0.6776	0.
3.00	489.0	369.0	0.062	0.	0.	0.	51.96	46.186	0.9172	0.
4.00	652.0	532.0	0.062	0.	0.	0.	25.98	45.381	1.0350	0.
5.00	815.0	695.0	0.061	0.	0.	0.	12.99	44.591	1.0919	0.
6.00	978.0	858.0	0.061	0.	0.	0.	6.50	43.814	1.1183	0.
7.00	1141.0	1021.0	0.061	0.	0.	0.	3.25	43.051	1.1296	0.

BATCH FINAL K 1.030

*** AFTER SEPARATION ***
*** PERCENT OF ELEMENT ***

CASE NUMBER 9000Z

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM RECOVERED						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.11	99.89	100.00	2.87	21.75	33.88	13.94	27.56	100.00	100.00
0.83	135.0	15.0	0.11	99.89	100.00	2.87	21.75	33.89	13.92	27.57	100.00	100.00
1.00	163.0	43.0	0.11	99.89	100.00	2.87	21.77	33.91	13.87	27.59	100.00	100.00
2.00	326.0	206.0	0.11	99.89	100.00	2.87	21.84	34.02	13.59	27.68	100.00	100.00
3.00	489.0	369.0	0.11	99.89	100.00	2.86	21.91	34.14	13.31	27.77	100.00	100.00
4.00	652.0	532.0	0.11	99.89	100.00	2.86	21.98	34.25	13.04	27.86	100.00	100.00
5.00	815.0	695.0	0.11	99.89	100.00	2.86	22.05	34.36	12.78	27.95	100.00	100.00
6.00	978.0	858.0	0.11	99.89	100.00	2.86	22.12	34.46	12.51	28.04	100.00	100.00
7.00	1141.0	1021.0	0.11	99.89	100.00	2.86	22.19	34.57	12.26	28.12	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM RECOVERED				CURIUM RECOVERED			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	15.83	84.17	100.00	100.00	10.80	89.20	0.	0.
0.83	135.0	15.0	15.82	84.18	100.00	100.00	10.22	89.78	82.24	17.76
1.00	163.0	43.0	15.82	84.18	100.00	100.00	9.20	90.80	81.39	18.61
2.00	326.0	206.0	15.81	84.19	100.00	100.00	4.91	95.09	76.24	23.76
3.00	489.0	369.0	15.81	84.19	100.00	100.00	2.56	97.44	70.99	29.01
4.00	652.0	532.0	15.80	84.20	100.00	100.00	1.32	98.68	65.89	34.11
5.00	815.0	695.0	15.79	84.21	100.00	100.00	0.68	99.32	61.14	38.86
6.00	978.0	858.0	15.78	84.22	100.00	100.00	0.34	99.66	56.84	43.16
7.00	1141.0	1021.0	15.77	84.23	100.00	100.00	0.18	99.82	53.00	47.00

ZONE SPECTRUM

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 700.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9800

AM-241 TARGET IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24000.0	INITIAL FLUX, N/SQ CM*SEC	9.43E 12	FISSILE RATIO	0.73	U235 IN TAILS/U235 ENR	0.48
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM*SEC	9.05E 12	INITIAL CONV RATIO	0.46	KG NATURAL/KG PRODUCED	12.687
RESIDENCE TIME, YRS	3.29	MAX FLUX/MIN FLUX	1.06	NONFUEL X-SECT 1/CM	0.061	KG NAT U/MWE-YR	138,962
TOTAL ENRICHMENT	9.68	AVG NEUTRON TEMP, C	435.	FUEL DENSITY	9.26	AVERAGE R	0.337
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF.	0.33				
KW/GRAMS FISSILE	0.35	WATTS/CC	185.11	DT (NO LOSSES)	0.	DT (AEC LOSSES)	0.
INITIAL REACTIVITY	1.085	FINAL INTEGRATED REACTIVITY	1.105	FINAL REACTIVITY	1.098	REACTIVITY CHANGE/MWD, MK	-0.0009

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	843	0	0	423	0	0	1473	0	1145	0
AVERAGE	0.	848	0	0	435	0	0	1200	0	1048	0
FINAL	0.	845	0	0	448	0	0	1168	0	1048	0
ABSORPTION-INITIAL	60.96	956	403	238	533	198	17.61	2256	4476	1607	627
AVERAGE	62.00	963	409	242	549	151	18.15	1852	2989	1441	599
FINAL	61.29	958	405	240	566	124	18.02	1790	1969	1439	571
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	0.	0.	0.	0.572	0.	0.	-0.	0.	-0.	0.
AVERAGE	0.	0.000	0.	0.	0.461	0.	0.	0.113	0.	0.007	0.
FINAL	0.	0.000	0.	0.	0.361	0.	0.	0.183	0.	0.010	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.718	-0.	0.386	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.581	0.008	0.394	0.174	0.030	0.009	0.007
FINAL	0.000	0.000	0.000	0.000	0.456	0.013	0.388	0.280	0.058	0.026	0.010
ALPHA	INITIAL	0.	0.134	0.	0.	0.254	0.	0.	0.585	0.	0.403
AVERAGE	0.	0.135	0.	0.	0.260	0.	0.	0.542	0.	0.374	0.
FINAL	0.	0.134	0.	0.	0.263	0.	0.	0.533	0.	0.373	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	72.1	0.	9.2	17.7	0.	1.1	0.
ETA	0.	2.21	0.	0.	1.93	0.	0.	1.87	0.	2.21	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.16	0.	1.67	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.461	0.	-0.	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9800

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	5.68	0.	0.	-0.	0.	-0.	0.
FINAL	0.	0.00	0.	0.	3.39	0.	0.	0.67	0.	0.08	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	5.8	-0.	94.2	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	3.6	0.5	95.9	70.3	13.3	8.2	8.2
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.5256	-0.	8.6538	-0.	-0.	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0004	0.3140	0.0409	8.5076	0.0621	0.0118	0.0073	0.0073
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	13.0	-6952.2	1343.0	-4804.8	2040.8	388.1	239.7	239.5
GM/MWE-YR	0.0	0.0	0.0	2.0	-1042.8	201.5	-720.7	306.1	58.2	36.0	35.9
GM/MWH	0.0000	0.0000	0.0000	0.0002	-0.1190	0.0230	-0.0823	0.0349	0.0066	0.0041	0.0041
GM/TON	0.0	0.0	0.0	42.9	-22856.5	4415.5	-15796.5	6709.6	1276.1	788.1	787.5
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	13.0	10319.3	1343.0	27958.6	2040.8	388.1	239.7	239.5
GM/MWE-YR	0.	0.0	0.0	2.0	1547.9	201.5	41938.	306.	58.	36.	36.
GM/TON	0.	0.0	0.0	42.9	33926.4	4415.5	91918.6	6709.6	1276.1	788.1	787.5

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 9800

AM-241 TARGET IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24000.0 INITIAL ENRICH. 5.68 POWER DENS, MW/T 0. AV. NEUTRON TEMPERATURE, C 435.
 RESIDENCE TIME, YRS 3.29 AVERAGE R 0.337 KW/GRAMS FISSILE 0.35 AVERAGE FLUX, NEUT/SO CM² SEC 9.05E 12

BASIS=100 NEUTRONS ABSORBED IN FISSILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00				
FROM U-235	194.08	146.86	115.19				
FROM PU-239	-0.	42.55	69.22				
FROM PU-241	-0.	2.69	7.60				
TOTAL	194.08	192.12	192.00				
NET FROM U-238	12.45	12.49	12.33				
NET FROM U-238	0.	0.	0.				
TOTAL	206.53	204.61	204.33				
NEUTRONS ABSORBED IN FISSILE ISOTOPES TO CAUSE FISSION							
IN U-233	-0.	0.00	0.00				
IN U-235	79.74	60.36	47.32				
IN PU-239	-0.	14.78	23.99				
IN PU-241	-0.	0.89	2.51				
TOTAL	79.74	76.03	73.82				
AS CAPTURE FORMING FERTILE ISOTOPES							
IN U-233	-0.	0.00	0.00				
IN PU-239	-0.	7.96	12.78				
TOTAL	-0.	7.96	12.78				
AS CAPTURE FORMING NON-FERTILE ISOTOPES							
IN U-235	20.26	15.68	12.46				
IN PU-241	-0.	0.33	0.94				
TOTAL	20.26	15.01	13.40				
TOTAL FISSION ABSORPTION	100.00	100.00	100.00				
				NEUTRONS INTO OR FROM OTHER FUEL	-3.91	0.	18.16
				IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
				IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
				TOTAL ABSORPTION + LEAKAGE	206.93	204.61	204.33
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	48.84	48.11	39.80

EXPOSURE 2500.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9800

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	281	1401	702	6762	17	1184	13	363	0
AVERAGE	279	1413	706	6761	17	1184	13	363	0
FINAL	279	1431	711	6763	17	1184	13	364	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	-0.	0.270	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.257	0.000	0.005	0.000	0.000	0.000	0.000	0.
FINAL	0.000	0.239	0.000	0.010	0.000	0.000	0.000	0.002	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	-0.	77.1056	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	0.3035	66.9022	0.0907	0.5858	5.9425	0.0054	0.0024	1.7217	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	100.0	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	99.0	0.1	0.9	99.9	0.1	0.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0074	0.0000	0.0000	0.7131	0.0000	0.0000	0.0010	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	95.8	3219.0	28.6	184.8	1874.8	1.7	0.7	543.2	-0.
GM/MWE-YR	14.36	482.85	4.29	27.72	281.22	0.26	0.11	81.47	-0.
GM/MWH	0.0016	0.0551	0.0005	0.0032	0.0321	0.0000	0.0000	0.0053	-0.
GM/TON	32.8	1102.4	9.8	63.3	642.6	0.6	0.3	186.0	-0.
WATTS/MWE-YR	0.	53.1	0.0	0.6	33745.9	0.4	0.3	49.6	0.

EXPOSURE 5000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9800

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	281	1401	702	6762	17	1184	13	363	0
AVERAGE	279	1427	709	6763	17	1184	13	363	0
FINAL	280	1458	714	6767	17	1185	13	364	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	0.270	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.000	0.243	0.000	0.008	0.000	0.000	0.000	0.002	0.
FINAL	0.000	0.212	0.001	0.014	0.000	0.000	0.000	0.005	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	77.1056	=0.	=0.	=0.	=0.	=0.	=0.	0.
FINAL	0.6748	58.0593	0.2995	0.8120	8.6265	0.0165	0.0160	5.5084	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	100.0	=0.	=0.	=0.	=0.	=0.	=0.	0.
FINAL	100.0	98.1	0.5	1.4	99.6	0.2	0.2	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0064	0.0000	0.0000	1.0352	0.0000	0.0000	0.0031	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	106.5	=3004.4	47.2	128.1	1360.8	2.6	2.5	868.9	=0.
GM/MWE=YR	15.97	=450.66	7.09	19.21	204.11	0.39	0.38	130.34	=0.
GM/MWH	0.0018	=0.0514	0.0008	0.0022	0.0233	0.0000	0.0000	0.0149	=0.
GM/TON	72.9	=2057.8	32.4	87.7	932.0	1.8	1.7	595.1	=0.
WATTS/MWE=YR	0.	=49.6	0.0	0.4	24493.8	0.6	1.1	73.0	0.

EXPOSURE 7500.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9800

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP =0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	281	1401	702	6762	17	1184	13	363	0
AVERAGE	279	1441	711	6765	17	1184	13	364	0
FINAL	280	1483	715	6773	17	1186	13	365	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	0.270	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.000	0.229	0.000	0.010	0.000	0.000	0.000	0.003	0.
FINAL	0.001	0.187	0.001	0.015	0.000	0.000	0.000	0.009	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	=0.	77.1056	=0.	=0.	=0.	=0.	=0.	=0.	0.
FINAL	1.0971	50.3767	0.5697	0.8687	9.5546	0.0288	0.0468	10.0448	=0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	=0.	100.0	=0.	=0.	=0.	=0.	=0.	=0.	0.
FINAL	100.0	97.2	1.1	1.7	99.2	0.3	0.5	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0055	0.0000	0.0000	1.1466	0.0000	0.0001	0.0056	0.
NET ISOTOPIC PRODUCTION									
GM/TON=YR	115.4	=2810.8	59.9	91.4	1004.8	3.0	4.9	1056.3	=0.
GM/MWE=YR	17.31	=421.63	8.99	13.70	150.72	0.45	0.74	158.45	=0.
GM/MWH	0.0020	=0.0481	0.0010	0.0016	0.0172	0.0001	0.0001	0.0181	=0.
GM/TON	118.5	=2887.9	61.5	93.9	1032.3	3.1	5.1	1085.3	=0.
WATTS/MWE=YR	0.	=45.4	0.1	0.3	18086.1	0.7	2.1	88.7	0.

EXPOSURE 10000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMRER 9800

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	281	1401	702	6762	17	1184	13	363	0
AVERAGE	279	1453	712	6767	17	1184	13	364	0
FINAL	280	1504	714	6780	17	1187	13	366	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	0.270	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.000	0.216	0.001	0.011	0.000	0.000	0.000	0.005	0.
FINAL	0.001	0.164	0.002	0.014	0.000	0.000	0.000	0.014	0.
ISOTOPIc DENSITY MILLIGRAM/CC									
INITIAL	-0.	77.1056	-0.	=0.	-0.	-0.	=0.	-0.	0.
FINAL	1.5594	43.6545	0.0702	0.6442	9.5466	0.0403	0.0973	14.6285	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	100.0	-0.	=0.	-0.	=0.	-0.	-0.	0.
FINAL	100.0	96.2	1.9	1.9	98.6	0.4	1.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0048	0.0000	0.0000	1.1456	0.0001	0.0003	0.0082	0.
NET ISOTOPIc PRODUCTION									
GM/TON=VR	123.0	-2638.3	68.6	66.6	753.0	3.2	7.7	1153.8	=0.
GM/HWE=VR	18.45	-395.75	10.30	9.99	112.94	0.48	1.15	173.07	-0.
GM/HWH	0.0021	-0.0452	0.0012	0.0011	0.0129	0.0001	0.0001	0.0198	-0.
GM/TON	168.5	-3614.1	94.0	91.2	1031.4	4.4	10.5	1580.5	-0.
WATTS/HWE=VR	0.	-43.5	0.1	0.2	13553.1	0.8	3.2	96.9	0.

EXPOSURE 15000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMRER 9800

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	281	1401	702	6762	17	1184	13	363	0
AVERAGE	279	1476	711	6774	17	1185	13	365	0
FINAL	279	1542	707	6797	17	1190	13	368	0
MACROSCOPIC CROSS SECTION									
ABSORPTION=INITIAL	=0.	0.270	=0.	=0.	=0.	=0.	=0.	=0.	=0.
AVERAGE	0.001	0.193	0.001	0.012	0.000	0.000	0.000	0.009	0.
FINAL	0.002	0.126	0.003	0.012	0.000	0.000	0.000	0.021	0.
ISOTOPIc DENSITY MILLIGRAM/CC									
INITIAL	=0.	77.1056	-0.	=0.	-0.	-0.	=0.	-0.	0.
FINAL	2.5758	32.5748	1.5037	0.7072	8.3573	0.0579	0.2614	22.7331	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	-0.	100.0	-0.	=0.	-0.	=0.	-0.	-0.	0.
FINAL	100.0	93.7	4.3	2.0	96.3	0.7	3.0	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0036	0.0000	0.0000	1.0029	0.0001	0.0007	0.0127	0.
NET ISOTOPIc PRODUCTION									
GM/TON=VR	135.4	-2341.5	79.1	37.2	439.4	3.0	13.7	1195.3	=0.
GM/HWE=VR	20.32	-351.22	11.86	5.58	65.91	0.46	2.06	179.30	-0.
GM/HWH	0.0023	-0.0401	0.0014	0.0006	0.0075	0.0001	0.0002	0.0205	-0.
GM/TON	278.3	-4811.2	162.5	76.4	902.9	6.3	28.2	2456.1	-0.
WATTS/HWE=VR	0.	-38.6	0.1	0.1	7909.8	0.7	5.8	100.4	0.

EXPOSURE 20000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 9800		
ISOTOPES.		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP: 0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		281	1401	702	6762	17	1184	13	363	0
AVERAGE		279	1496	709	6782	17	1187	13	366	0
FINAL		278	1572	698	6815	17	1193	13	370	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	0.270	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE		0.001	0.172	0.002	0.012	0.000	0.000	0.000	0.013	0.
FINAL		0.003	0.095	0.004	0.009	0.000	0.000	0.000	0.027	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	77.1056	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		3.6843	24.1400	2.1306	0.5529	6.7863	0.0675	0.5088	28.8066	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	100.0	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		100.0	90.1	7.9	2.1	92.2	0.9	6.9	100.0	0.
HEAT OUTPUT, WATTS/CC		0.	0.0027	0.0000	0.0000	0.8144	0.0001	0.0014	0.0161	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		145.3	-2088.7	84.0	21.8	267.6	2.7	20.1	1136.0	-0.
GM/MWE-YR		21.79	-313.31	12.60	3.27	40.14	0.40	3.01	170.40	-0.
GM/MWH		0.0025	-0.0358	0.0014	0.0004	0.0046	0.0000	0.0003	0.0195	-0.
GM/TON		398.1	-5722.5	230.2	59.7	733.2	7.3	55.0	3112.3	-0.
WATTS/MWE-YR		0.	-34.5	0.1	0.1	4817.2	0.6	8.4	95.4	0.

EXPOSURE 24000.0 MWD/T		*** PROPERTIES OF SPECIAL PRODUCTS ***						CASE NUMBER 9800		
ISOTOPES		NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP = 0
HALF LIFE		STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		281	1401	702	6762	17	1184	13	363	0
AVERAGE		278	1510	707	6788	17	1188	13	366	0
FINAL		276	1590	690	6831	17	1196	13	371	0
MACROSCOPIC CROSS SECTION										
ABSORPTION-INITIAL		-0.	0.270	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE		0.001	0.158	0.002	0.011	0.000	0.000	0.000	0.015	0.
FINAL		0.003	0.075	0.004	0.008	0.000	0.000	0.000	0.030	0.
ISOTOPIC DENSITY MILLIGRAM/CC										
INITIAL		-0.	77.1056	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		4.6196	18.9143	2.6099	0.4428	5.6050	0.0704	0.7644	32.2167	-0.
PERCENT OF ELEMENT COMPOSITION										
INITIAL		-0.	100.0	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL		100.0	86.2	11.8	2.0	87.1	1.1	11.8	100.0	0.
HEAT OUTPUT, WATTS/CC										
		0.	0.0021	0.0000	0.0000	0.6726	0.0001	0.0021	0.0180	0.
NET ISOTOPIC PRODUCTION										
GM/TON-YR		151.8	-1912.3	85.8	14.6	184.2	2.3	25.1	1058.7	-0.
GM/MWE-YR		22.77	-286.85	12.87	2.18	27.63	0.35	3.77	158.81	-0.
GM/MWH		0.0026	-0.0327	0.0015	0.0002	0.0032	0.0000	0.0004	0.0181	-0.
GM/TON		499.1	-6287.1	282.0	47.8	605.6	7.6	82.6	3488.8	-0.
WATTS/MWE-YR		0.	-31.6	0.1	0.0	3315.6	0.6	10.6	88.9	0.

GRADED FINAL K 1.105

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

EXPOSURE 24000.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.29 YRS. LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	0.	0.	3424.43	345.5	48.3	20.4	292.3	2008.53	115.25	660.81	33.91
0.09	15.0	0.	0.12	3460.45	345.5	48.4	20.3	292.3	2008.45	115.25	563.69	33.85
0.18	30.0	0.	0.25	3494.16	345.5	48.4	20.3	292.3	2008.37	115.25	528.86	33.80
0.28	45.0	0.	0.37	3525.71	345.5	48.5	20.2	292.3	2008.29	115.25	496.19	33.74
0.37	60.0	0.	0.50	3555.23	345.5	48.5	20.2	292.3	2008.21	115.25	465.53	33.69
0.55	90.0	0.	0.75	3608.69	345.5	48.6	20.1	292.3	2008.05	115.25	409.79	33.58
0.74	120.0	0.	1.00	3655.44	345.5	48.7	20.0	292.3	2007.89	115.25	360.71	33.47
0.92	150.0	0.	1.25	3696.28	345.5	48.8	19.9	292.3	2007.73	115.25	317.52	33.34
1.10	180.0	0.	1.50	3731.93	345.5	49.0	19.8	292.3	2007.56	115.25	279.50	33.26
2.21	360.0	0.	2.99	3866.79	345.5	49.6	19.3	292.3	2006.58	115.24	130.02	32.62
4.41	720.0	0.	5.98	3938.62	345.5	50.8	18.3	292.3	2004.58	115.05	98.14	31.38
6.13	1000.0	0.	8.31	3934.69	345.5	51.8	17.6	292.3	2002.99	115.22	8.56	30.44

*** GM/MWE-YEAR ***

0.	0.	0.	0.	156.503	15.79	2.21	0.93	13.36	91.794	5.267	27.458	1.550
0.09	15.0	0.	0.006	158.149	15.79	2.21	0.93	13.36	91.790	5.267	25.762	1.547
0.18	30.0	0.	0.011	159.690	15.79	2.21	0.93	13.36	91.787	5.267	24.170	1.545
0.28	45.0	0.	0.017	161.132	15.79	2.22	0.93	13.36	91.783	5.267	22.677	1.542
0.37	60.0	0.	0.023	162.481	15.79	2.22	0.92	13.36	91.779	5.267	21.276	1.540
0.55	90.0	0.	0.034	164.924	15.79	2.22	0.92	13.36	91.772	5.267	18.728	1.535
0.74	120.0	0.	0.045	167.061	15.79	2.23	0.92	13.36	91.764	5.267	16.485	1.530
0.92	150.0	0.	0.057	168.927	15.79	2.23	0.91	13.36	91.757	5.267	14.511	1.525
1.10	180.0	0.	0.068	170.556	15.79	2.24	0.91	13.36	91.750	5.267	12.774	1.520
2.21	360.0	0.	0.137	176.720	15.79	2.27	0.88	13.36	91.705	5.267	5.942	1.491
4.41	720.0	0.	0.274	180.003	15.79	2.32	0.84	13.36	91.613	5.266	1.286	1.434
6.13	1000.0	0.	0.380	179.823	15.79	2.37	0.80	13.36	91.541	5.266	0.391	1.391

GRADED FINAL K 1.105

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.	0.	0.0179	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0031	0.0002
0.09	15.0	0.	0.0000	0.0180	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0029	0.0002
0.18	30.0	0.	0.0000	0.0182	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0028	0.0002
0.28	45.0	0.	0.0000	0.0184	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0026	0.0002
0.37	60.0	0.	0.0000	0.0185	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0024	0.0002
0.55	90.0	0.	0.0000	0.0188	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0021	0.0002
0.74	120.0	0.	0.0000	0.0191	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0019	0.0002
0.92	150.0	0.	0.0000	0.0193	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0017	0.0002
1.10	180.0	0.	0.0000	0.0195	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0015	0.0002
2.21	360.0	0.	0.0000	0.0202	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0007	0.0002
4.41	720.0	0.	0.0000	0.0205	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0001	0.0002
6.13	1000.0	0.	0.0000	0.0205	0.0018	0.0003	0.0001	0.0015	-0.0330	0.0006	0.0000	0.0002

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	87.6417	0.	0.	0.	1.010	0.	3294.96	4.339
0.09	15.0	0.	0.	88.5635	0.	0.	0.	1.010	0.	3091.39	4.332
0.18	30.0	0.	0.	89.4264	0.	0.	0.	1.010	0.	2900.40	4.325
0.28	45.0	0.	0.	90.2339	0.	0.	0.	1.010	0.	2721.20	4.318
0.37	60.0	0.	0.	90.9894	0.	0.	0.	1.010	0.	2553.08	4.311
0.55	90.0	0.	0.	92.3575	0.	0.	0.	1.009	0.	2247.36	4.297
0.74	120.0	0.	0.	93.5539	0.	0.	0.	1.009	0.	1976.24	4.283
0.92	150.0	0.	0.	94.5992	0.	0.	0.	1.009	0.	1741.36	4.269
1.10	180.0	0.	0.	95.5115	0.	0.	0.	1.009	0.	1532.83	4.256
2.21	360.0	0.	0.	98.9630	0.	0.	0.	1.009	0.	713.08	4.174
4.41	720.0	0.	0.	100.8015	0.	0.	0.	1.008	0.	154.32	4.015
6.13	1000.0	0.	0.	100.7010	0.	0.	0.	1.007	0.	46.93	3.896

GRADED FINAL K 1.105

*** AFTER DISCHARGE, BEFORE SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***											
0.	0.	100.00	82.90	8.36	1.17	0.49	7.08	94.57	5.43	94.66	5.34
0.09	15.0	0.	100.00	83.05	8.29	1.16	0.49	7.01	94.57	5.43	5.67
0.18	30.0	0.	100.00	83.19	8.22	1.15	0.49	6.96	94.57	5.43	6.01
0.28	45.0	0.	100.00	83.31	8.16	1.15	0.48	6.91	94.57	5.43	6.37
0.37	60.0	0.	100.00	83.42	8.11	1.14	0.47	6.86	94.57	5.43	6.75
0.55	90.0	0.	100.00	83.63	8.01	1.13	0.47	6.77	94.57	5.43	7.57
0.74	120.0	0.	100.00	83.80	7.92	1.12	0.46	6.70	94.57	5.43	8.49
0.92	150.0	0.	100.00	83.95	7.85	1.11	0.45	6.64	94.57	5.43	9.51
1.10	180.0	0.	100.00	84.08	7.78	1.10	0.45	6.59	94.57	5.43	10.63
2.21	360.0	0.	100.00	84.55	7.55	1.08	0.42	6.39	94.57	5.43	20.05
4.41	720.0	0.	100.00	84.78	7.44	1.09	0.39	6.29	94.56	5.44	52.72
6.13	1000.0	0.	100.00	84.77	7.44	1.12	0.38	6.30	94.56	5.44	78.06

GRADED FINAL K 1.105

*** AFTER SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** GM/TON ***

EXPOSURE 24000.0 MWD/T
THERMAL TO ELECTRICAL EFF.

POWER DENS 25.00 MW/T

RESIDENCE TIME 3.29 YRS,

LOAD FACTOR 0.33

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....							
		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241	
		YIELD FACTOR										
		0.970	0.970	0.950	0.970	0.970	0.970	0.970	0.970	0.	0.	
0.74	120.0	0.	8.8	0.95	3545.77	335.1	47.3	19.4	283.5	0.	0.	
0.83	135.0	0.	8.8	0.95	3544.64	335.1	47.3	19.4	283.5	0.00	0.04	
1.00	163.0	0.	8.8	0.95	3542.52	335.1	47.3	19.3	283.5	0.00	0.12	
2.00	326.0	0.	8.8	0.95	3530.24	335.1	47.3	18.8	283.5	0.00	0.57	
3.00	489.0	0.	8.8	0.95	3517.99	335.1	47.3	18.4	283.5	0.00	1.02	
4.00	652.0	0.	8.8	0.95	3505.79	335.1	47.3	18.0	283.5	0.00	1.45	
5.00	815.0	0.	8.8	0.95	3493.63	335.1	47.3	17.5	283.5	0.00	1.87	
6.00	978.0	0.	8.8	0.95	3481.51	335.1	47.3	17.1	283.5	0.00	2.28	
7.00	1141.0	0.	8.8	0.95	3469.43	335.1	47.3	16.7	283.5	0.01	2.68	

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
		YIELD FACTOR							
		0.950	0.950	0.	0.	0.950	0.950	0.	0.
0.74	120.0	0.	1907.49	109.49	0.	0.	342.68	31.80	0.
0.83	135.0	0.	1907.37	109.49	0.12	0.00	321.51	31.75	21.17
1.00	163.0	0.	1907.15	109.49	0.34	0.00	285.42	31.65	57.23
2.00	326.0	0.	1905.87	109.48	1.63	0.01	142.73	31.10	199.44
3.00	489.0	0.	1904.58	109.48	2.91	0.01	71.38	30.56	269.97
4.00	652.0	0.	1903.29	109.47	4.20	0.01	35.69	30.03	304.65
5.00	815.0	0.	1902.01	109.47	5.48	0.02	17.85	29.50	321.40
6.00	978.0	0.	1900.73	109.46	6.77	0.02	8.93	28.99	329.19
7.00	1141.0	0.	1899.44	109.46	8.05	0.03	4.46	28.48	332.50

GRADED FINAL K 1.105

*** AFTER SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** GM/MWE=YEAR ***

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.40	0.04	162.05	15.32	2.16	0.89	12.96	0.	0.
0.83	135.0	15.0	0.	0.40	0.04	162.00	15.32	2.16	0.89	12.96	0.00	0.00
1.00	163.0	43.0	0.	0.40	0.04	161.90	15.32	2.16	0.88	12.96	0.00	0.01
2.00	326.0	206.0	0.	0.40	0.04	161.34	15.32	2.16	0.86	12.96	0.00	0.03
3.00	489.0	369.0	0.	0.40	0.04	160.78	15.32	2.16	0.84	12.96	0.00	0.05
4.00	652.0	532.0	0.	0.40	0.04	160.22	15.32	2.16	0.82	12.96	0.00	0.07
5.00	815.0	695.0	0.	0.40	0.04	159.67	15.32	2.16	0.80	12.96	0.00	0.09
6.00	978.0	858.0	0.	0.40	0.04	159.11	15.32	2.16	0.78	12.96	0.00	0.10
7.00	1141.0	1021.0	0.	0.40	0.04	158.56	15.32	2.16	0.76	12.96	0.00	0.12

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	87.18	5.00	0.	0.	15.66	1.45	0.	0.
0.83	135.0	15.0	87.17	5.00	0.01	0.0000	14.69	1.45	0.97	0.00
1.00	163.0	43.0	87.16	5.00	0.02	0.0001	13.04	1.45	2.62	0.01
2.00	326.0	206.0	87.10	5.00	0.07	0.0003	6.52	1.42	9.11	0.03
3.00	489.0	369.0	87.04	5.00	0.13	0.0005	3.26	1.40	12.34	0.06
4.00	652.0	532.0	86.98	5.00	0.19	0.0007	1.63	1.37	13.92	0.08
5.00	815.0	695.0	86.93	5.00	0.25	0.0009	0.82	1.35	14.69	0.10
6.00	978.0	858.0	86.87	5.00	0.31	0.0011	0.41	1.32	15.04	0.13
7.00	1141.0	1021.0	86.81	5.00	0.37	0.0013	0.20	1.30	15.20	0.15

GRADED FINAL K 1.105

*** AFTER SEPARATION ***

CASE NUMBER 9800

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** GM/MWE ***

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
0.45 YR HALF-LIVES	DAYS		U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.0000	0.0000	0.0185	0.0017	0.0002	0.0001	0.0015	0.	0.
0.83	135.0	15.0	0.	0.0000	0.0000	0.0185	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
1.00	163.0	43.0	0.	0.0000	0.0000	0.0185	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
2.00	326.0	206.0	0.	0.0000	0.0000	0.0184	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
3.00	489.0	369.0	0.	0.0000	0.0000	0.0183	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
4.00	652.0	532.0	0.	0.0000	0.0000	0.0183	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
5.00	815.0	695.0	0.	0.0000	0.0000	0.0182	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
6.00	978.0	858.0	0.	0.0000	0.0000	0.0182	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000
7.00	1141.0	1021.0	0.	0.0000	0.0000	0.0181	0.0017	0.0002	0.0001	0.0015	0.0000	0.0000

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
0.45 YR HALF-LIVES	DAYS		AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	-0.0335	0.0006	0.	0.	0.0018	0.0002	0.	0.
0.83	135.0	15.0	-0.0335	0.0006	0.0000	0.0000	0.0017	0.0002	0.0001	0.0000
1.00	163.0	43.0	-0.0335	0.0006	0.0000	0.0000	0.0015	0.0002	0.0003	0.0000
2.00	326.0	206.0	-0.0335	0.0006	0.0000	0.0000	0.0007	0.0002	0.0010	0.0000
3.00	489.0	369.0	-0.0335	0.0006	0.0000	0.0000	0.0004	0.0002	0.0014	0.0000
4.00	652.0	532.0	-0.0335	0.0006	0.0000	0.0000	0.0002	0.0002	0.0016	0.0000
5.00	815.0	695.0	-0.0335	0.0006	0.0000	0.0000	0.0001	0.0002	0.0017	0.0000
6.00	978.0	858.0	-0.0335	0.0006	0.0000	0.0000	0.0000	0.0002	0.0017	0.0000
7.00	1141.0	1021.0	-0.0335	0.0006	0.0000	0.0000	0.0000	0.0001	0.0017	0.0000

GRADED FINAL K 1.105 *** AFTER SEPARATION *** CASE NUMBER 9880

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY.

*** WATTS/MWE-YEAR ***

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	90.7473	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	90.7183	0.	0.	0.	0.	0.	0.000
1.00	163.0	43.0	0.	0.	0.	90.6642	0.	0.	0.	0.	0.	0.000
2.00	326.0	206.0	0.	0.	0.	90.3497	0.	0.	0.	0.	0.	0.000
3.00	489.0	369.0	0.	0.	0.	90.0363	0.	0.	0.	0.	0.	0.001
4.00	652.0	532.0	0.	0.	0.	89.7239	0.	0.	0.	0.	0.	0.001
5.00	815.0	695.0	0.	0.	0.	89.4127	0.	0.	0.	0.	0.	0.001
6.00	978.0	858.0	0.	0.	0.	89.1025	0.	0.	0.	0.	0.	0.001
7.00	1141.0	1021.0	0.	0.	0.	88.7935	0.	0.	0.	0.	0.	0.001

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.959	0.	0.	0.	1879.33	4.069	0.	0.
0.83	135.0	15.0	0.959	0.	0.	0.	1763.22	4.063	0.5418	0.
1.00	163.0	43.0	0.959	0.	0.	0.	1565.34	4.050	1.4646	0.
2.00	326.0	206.0	0.958	0.	0.	0.	782.78	3.980	5.1044	0.
3.00	489.0	369.0	0.957	0.	0.	0.	391.45	3.910	6.9894	0.
4.00	652.0	532.0	0.957	0.	0.	0.	195.75	3.842	7.7969	0.
5.00	815.0	695.0	0.956	0.	0.	0.	97.89	3.775	8.2257	0.
6.00	978.0	858.0	0.956	0.	0.	0.	48.95	3.710	8.4251	0.
7.00	1141.0	1021.0	0.955	0.	0.	0.	24.48	3.645	8.5098	0.

GRADED FINAL K 1.105 *** AFTER SEPARATION *** CASE NUMBER 9880

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** PERCENT OF ELEMENT ***

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	URANIUM		NEPTUNIUM RECOVERED NP237	PLUTONIUM						
0.45 YR HALF-LIVES	DAYS		..RECOVERED...	OTHER U		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			U236			PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	100.00	100.00	83.80	7.92	1.12	0.46	6.70	100.00	100.00
0.83	135.0	15.0	0.	100.00	100.00	83.80	7.92	1.12	0.46	6.70	100.00	100.00
1.00	163.0	43.0	0.	100.00	100.00	83.79	7.93	1.12	0.46	6.71	100.00	100.00
2.00	326.0	206.0	0.	100.00	100.00	83.75	7.95	1.12	0.45	6.73	100.00	100.00
3.00	489.0	369.0	0.	100.00	100.00	83.72	7.97	1.13	0.44	6.75	100.00	100.00
4.00	652.0	532.0	0.	100.00	100.00	83.68	8.00	1.13	0.43	6.77	100.00	100.00
5.00	815.0	695.0	0.	100.00	100.00	83.64	8.02	1.13	0.42	6.79	100.00	100.00
6.00	978.0	858.0	0.	100.00	100.00	83.60	8.05	1.14	0.41	6.81	100.00	100.00
7.00	1141.0	1021.0	0.	100.00	100.00	83.56	8.07	1.14	0.40	6.83	100.00	100.00

TIME AFTER DISCHARGE		TIME AFTER SEPARATION DAYS	AMERICIUM				CURIUM			
0.45 YR HALF-LIVES	DAYS		RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....	RECOVERED.....
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	94.57	5.43	100.00	100.00	91.51	8.49	0.	0.
0.83	135.0	15.0	94.57	5.43	100.00	100.00	91.01	8.99	99.76	0.24
1.00	163.0	43.0	94.57	5.43	100.00	100.00	90.02	9.98	99.74	0.26
2.00	326.0	206.0	94.57	5.43	100.00	100.00	82.11	17.89	99.65	0.35
3.00	489.0	369.0	94.56	5.44	100.00	100.00	70.07	29.98	99.54	0.46
4.00	652.0	532.0	94.56	5.44	100.00	100.00	54.31	45.69	99.42	0.58
5.00	815.0	695.0	94.56	5.44	100.00	100.00	37.69	62.31	99.29	0.71
6.00	978.0	858.0	94.55	5.45	100.00	100.00	23.54	76.46	99.15	0.85
7.00	1141.0	1021.0	94.55	5.45	100.00	100.00	13.55	86.45	99.01	0.99

*** SPECIAL PRODUCT CONCENTRATIONS ***

AM-241 TARGET IN PRESSURIZED WATER REACTOR

CASE NUMBER 9800

A = VP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 8400.0 GRAMS/TON

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9900

NP-237 TARGET IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/T	24000.0	INITIAL FLUX, N/SQ CM=SEC		1.45E 13	FISSILE RATIO		0.62	U235 IN TAILS/U235 ENR		0.44	
POWER DENS, MW/T	25.00	AVG FLUX, NEUT/SQ CM=SEC		1.42E 13	INITIAL CONV RATIO		0.53	KG NATURAL/KG PRODUCED		6.815	
RESIDENCE TIME, YRS	3.29	MAX FLUX/MIN FLUX		1.09	NONFUEL X-SECT 1/CM		0.055	KG NAT U/MWE-YR		112.928	
TOTAL ENRICHMENT	3.31	AVG NEUTRON TEMP, C		396.	FUEL DENSITY		9.26	AVERAGE R		0.242	
LOAD FACTOR	0.80	THERMAL TO ELECTRICAL EFF,		0.33							
KW/GRAMS FISSILE	0.60	WATTS/CC		185.11	DT (NO LOSSES)		0.	DT (AEC LOSSES)		0.	
INITIAL REACTIVITY	1.199	FINAL INTEGRATED REACTIVITY		1.091	FINAL REACTIVITY		1.014	REACTIVITY CHANGE/MWD, MK		0.0077	
ISOTOPES.	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
MICROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	686	0	0	473	0	0.	1377	0	1217	0
AVERAGE	0.	696	0	0	477	0	0.	1286	0	1168	0
FINAL	0.	706	0	0	489	0	0.	1166	0	1119	0
ABSORPTION-INITIAL	43.16	774	282	187	584	134	12.52	2192	3029	1707	424
AVERAGE	45.45	786	297	194	592	120	13.15	1988	2318	1626	448
FINAL	47.37	798	311	200	611	100	13.61	1810	1361	1547	458
MACROSCOPIC CROSS SECTION											
FISSION-INITIAL	0.	-0.	0.	0.	0.371	0.	0.	-0.	0.	-0.	0.
AVERAGE	0.	0.000	0.	0.	0.296	0.	0.	0.072	0.	0.006	0.
FINAL	0.	0.000	0.	0.	0.160	0.	0.	0.162	0.	0.026	0.
ABSORPTION-INITIAL	-0.	-0.	-0.	-0.	0.458	-0.	0.281	-0.	-0.	-0.	-0.
AVERAGE	0.000	0.000	0.000	0.000	0.367	0.003	0.293	0.110	0.019	0.008	0.000
FINAL	0.000	0.000	0.000	0.000	0.199	0.008	0.300	0.248	0.056	0.036	0.002
ALPHA	0.	0.128	0.	0.	0.235	0.	0.	0.563	0.	0.403	0.
AVERAGE	0.	0.129	0.	0.	0.241	0.	0.	0.544	0.	0.392	0.
FINAL	0.	0.130	0.	0.	0.249	0.	0.	0.526	0.	0.382	0.
PERCENT OF TOTAL FISSION	0.	0.0	0.	0.	71.8	0.	9.3	17.4	0.	1.5	0.
ETA	0.	2.22	0.	0.	1.96	0.	0.	1.87	0.	2.18	0.
MWD/GRAM DESTROYED	0.	0.	0.	0.	1.37	0.	1.41	0.	0.	0.	0.
INITIAL CONVERSION RATIO	0.	-0.	0.	0.	-0.	0.	0.	0.533	0.	-0.	0.

GRADED BURNUP

*** FUEL PROPERTIES ***

CASE NUMBER 9900

ISOTOPES	TH232	U233	PA233	U234	U235	U236	U238	PU239	PU240	PU241	PU242
PERCENT OF ENRICHMENT											
INITIAL	0.	-0.	0.	0.	3.31	0.	0.	-0.	0.	-0.	0.
FINAL	0.	0.00	0.	0.	1.38	0.	0.	0.59	0.	0.10	0.
PERCENT OF ELEMENT COMPOSITION											
INITIAL	0.	-0.	-0.	-0.	3.4	-0.	96.6	0.	0.	0.	0.
FINAL	100.0	0.0	100.0	0.0	1.5	0.4	98.2	66.3	20.1	11.2	2.4
ISOTOPIC DENSITY GM/CC											
INITIAL	-0.	-0.	-0.	-0.	0.3063	-0.	8.8751	-0.	-0.	-0.	-0.
FINAL	0.0000	0.0000	0.0000	0.0002	0.1273	0.0321	8.7012	0.0543	0.0165	0.0092	0.0020
NET ISOTOPIC PRODUCTION											
GM/TON-YR	0.0	0.0	0.0	7.2	-5882.8	1054.6	-5713.8	1783.9	542.1	302.4	66.0
GM/MWE-YR	0.0	0.0	0.0	1.1	-882.4	158.2	-857.1	267.6	81.3	45.4	9.9
GM/MWH	0.0000	0.0000	0.0000	0.0001	-0.1007	0.0181	-0.0978	0.0305	0.0093	0.0052	0.0011
GM/TON	0.0	0.0	0.0	23.7	-19340.8	3467.2	-18785.1	5865.0	1782.4	994.3	217.1
GROSS RECOVERABLE ISOTOPES											
GM/TON-YR	0.	0.0	0.0	7.2	4182.6	1054.6	28594.9	1783.9	542.1	302.4	66.0
GM/MWE-YR	0.	0.0	0.0	1.1	627.4	158.2	42892.	268.	81.	45.	10.
GM/TON	0.	0.0	0.0	23.7	13751.0	3467.2	940106.	5865.0	1782.4	994.3	217.1

GRADED BURNUP

NEUTRON BALANCE

CASE NO. 9900

NP-237 TARGET IN PRESSURIZED WATER REACTOR

EXPOSURE, MWD/TON 24000.0 INITIAL ENRICH. 3.31 POWER DENS, MW/T 0. AV. NEUTRON TEMPERATURE, C 396.
 RESIDENCE TIME, YRS 3.29 AVERAGE R 0.242 KW/GRAMS FISSL 0.60 AVERAGE FLUX, NEUT/SQ CM-SEC 1.42E 13

BASIS=100 NEUTRONS ABSORBED IN FISSLILE MATERIAL

FISSION NEUTRONS FORMED	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL	NON-FISSLILE CAPTURE	FUEL INITIAL	REACTOR AVERAGE	FUEL FINAL
FROM U-233	-0.	0.00	0.00	FERTILE CAPTURE			
FROM U-235	197.14	148.22	80.47	IN TH-232	-0.	0.00	0.00
FROM PU-239	-0.	42.36	97.01	IN U-234	-0.	0.00	0.02
FROM PU-241	-0.	3.80	16.16	IN U-238	54.29	58.35	47.07
TOTAL	197.14	194.38	193.64	IN PU-240	-0.	3.85	8.85
NET FROM U-238	13.09	12.86	12.71	TOTAL	54.29	62.21	55.93
NET FROM U-238	0.	0.	0.				
TOTAL	210.23	207.24	206.35				
NEUTRONS ABSORBED IN FISSLILE ISOTOPES TO CAUSE FISSION				NON-FERTILE CAPTURE			
IN U-233	-0.	0.00	0.00	IN U-236	-0.	0.65	1.29
IN U-235	80.99	60.96	33.06	IN PU-242	-0.	0.07	0.36
IN PU-239	-0.	14.81	33.63	IN SPECIAL PRODUCTS	8.77	9.74	8.66
IN PU-241	-0.	1.26	5.33	TOTAL	8.77	10.46	10.30
TOTAL	80.99	77.04	72.02	NON-FUEL ABSORPTION + LEAKAGE			
AS CAPTURE FORMING FERTILE ISOTOPES				IN SM + XE	4.40	4.54	3.58
IN U-233	-0.	0.00	0.00	IN OTHER F.P.	0.	6.25	11.40
IN PU-239	-0.	7.86	17.69	IN STRUCT. + MOD. + IMPUR.	6.29	6.48	5.12
TOTAL	-0.	7.86	17.69	CONTROL + LEAKAGE	17.55	17.30	17.23
AS CAPTURE FORMING NON-FERTILE ISOTOPES				TOTAL	28.25	34.57	37.33
IN U-235	19.01	14.62	8.25	NEUTRONS INTO OR FROM OTHER FUEL	18.92	0.	2.79
IN PU-241	-0.	0.48	2.04	IN PA-233 NON-FERTILE CAPTURE	-0.	0.00	0.00
TOTAL	19.01	15.10	10.29	IN NP-239 NON-FERTILE CAPTURE	0.	0.	0.
TOTAL FISSLILE ABSORPTION	100.00	100.00	100.00	TOTAL ABSORPTION + LEAKAGE	210.23	207.24	206.35
				FERTILE CAPTURE + (PA-233 + NP-239 NON-FERTILE CAPTURE)	54.29	62.21	55.93

EXPOSURE 24000.0 MWD/T

*** PROPERTIES OF SPECIAL PRODUCTS ***

CASE NUMBER 9900

ISOTOPES	NP237	AM241	AM243	AM242	CM242	CM243	CM244	PU238	FP -0
HALF LIFE	STABLE	458 YR	6760YR	152 YR	163 DY	32 YR	17.6YR	89 YR	
MICROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	230	1581	488	7164	18	1254	13	404	0
AVERAGE	233	1540	516	7140	18	1250	13	401	0
FINAL	237	1496	539	7138	18	1250	13	401	0
MACROSCOPIC CROSS SECTION									
ABSORPTION-INITIAL	0.045	-0.	-0.	-0.	-0.	-0.	-0.	-0.	-0.
AVERAGE	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.
FINAL	0.036	0.001	0.000	0.000	0.000	0.000	0.000	0.017	0.
ISOTOPIC DENSITY MILLIGRAM/CC									
INITIAL	77.7539	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	59.6927	0.3763	0.3322	0.0052	0.0863	0.0004	0.0574	16.7599	-0.
PERCENT OF ELEMENT COMPOSITION									
INITIAL	100.0	-0.	-0.	-0.	-0.	-0.	-0.	-0.	0.
FINAL	100.0	52.9	46.3	0.7	60.1	0.3	39.6	100.0	0.
HEAT OUTPUT, WATTS/CC	0.	0.0000	0.0000	0.0000	0.0104	0.0000	0.0002	0.0095	0.
NET ISOTOPIC PRODUCTION									
GM/TON-YR	-593.5	12.4	10.9	0.2	2.8	0.0	1.9	557.4	-0.
GM/MWE-YR	-89.03	1.85	1.64	0.03	0.43	0.00	0.28	83.60	-0.
GM/MWH	-0.0102	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0095	-0.
GM/TON	-1951.4	40.7	35.9	0.6	9.3	0.0	6.2	1832.4	-0.
WATTS/MWE-YR	-0.	0.2	0.0	0.0	51.1	0.0	0.8	46.8	0.

GRADED FINAL K 1.091

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

EXPOSURE 24000.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.29 YRS, LOAD FACTOR 0.33
THERMAL TO ELECTRICAL EFF.TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/TON ***

0.	0.	0.	5943.44	1757.68	256.3	60.2	26.3	4.2	0.	0.	0.	0.
0.09	15.0	0.	5943.44	1757.12	256.3	60.2	26.3	4.2	0.06	0.	0.	0.
0.18	30.0	0.	5943.44	1756.56	256.3	60.2	26.2	4.2	0.11	0.	0.	0.
0.28	45.0	0.	5943.44	1756.00	256.3	60.2	26.2	4.2	0.17	0.	0.	0.
0.37	60.0	0.	5943.44	1755.44	256.3	60.2	26.1	4.2	0.23	0.	0.	0.
0.55	90.0	0.	5943.44	1754.31	256.3	60.2	26.0	4.2	0.34	0.	0.	0.
0.74	120.0	0.	5943.44	1753.19	256.3	60.2	25.9	4.2	0.46	0.	0.	0.
0.92	150.0	0.	5943.44	1752.07	256.3	60.2	25.8	4.2	0.57	0.	0.	0.
1.10	180.0	0.	5943.44	1750.95	256.3	60.2	25.6	4.2	0.68	0.	0.	0.
2.21	360.0	0.	5943.44	1744.24	256.3	60.2	25.0	4.2	1.35	0.	0.	0.
4.41	720.0	0.	5943.45	1730.91	256.3	60.2	23.7	4.2	2.62	0.	0.	0.
6.13	1000.0	0.	5943.45	1720.61	256.3	60.2	22.7	4.2	3.57	0.	0.	0.

*** GM/MWE-YEAR ***

0.	0.	0.	271.627	80.330	11.71	2.75	1.20	0.19	0.	0.	0.	0.
0.09	15.0	0.	271.627	80.304	11.71	2.75	1.20	0.19	0.003	0.	0.	0.
0.18	30.0	0.	271.627	80.278	11.71	2.75	1.20	0.19	0.005	0.	0.	0.
0.28	45.0	0.	271.627	80.252	11.71	2.75	1.20	0.19	0.008	0.	0.	0.
0.37	60.0	0.	271.627	80.227	11.71	2.75	1.19	0.19	0.010	0.	0.	0.
0.55	90.0	0.	271.627	80.176	11.71	2.75	1.19	0.19	0.016	0.	0.	0.
0.74	120.0	0.	271.627	80.124	11.71	2.75	1.18	0.19	0.021	0.	0.	0.
0.92	150.0	0.	271.627	80.073	11.71	2.75	1.18	0.19	0.026	0.	0.	0.
1.10	180.0	0.	271.627	80.022	11.71	2.75	1.17	0.19	0.031	0.	0.	0.
2.21	360.0	0.	271.627	79.715	11.71	2.75	1.14	0.19	0.062	0.	0.	0.
4.41	720.0	0.	271.627	79.106	11.71	2.75	1.08	0.19	0.120	0.	0.	0.
6.13	1000.0	0.	271.627	78.635	11.71	2.75	1.04	0.19	0.163	0.	0.	0.

GRADED FINAL K 1.091

*** AFTER DISCHARGE,BEFORE SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

TIME AFTER REACTOR DISCHARGE
UNITS OF 0.45
YEAR HALF-LIFE DAYS

U236 NP237 PU238 PU239 PU240 PU241 PU242 AM241 AM243 CM242 CM244

*** GM/MWH ***

0.	0.	0.	-0.0128	0.0092	0.0013	0.0003	0.0001	0.0000	0.	0.	0.	0.
0.09	15.0	0.	-0.0128	0.0092	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.18	30.0	0.	-0.0128	0.0092	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.28	45.0	0.	-0.0128	0.0092	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.37	60.0	0.	-0.0128	0.0092	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.55	90.0	0.	-0.0128	0.0091	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.74	120.0	0.	-0.0128	0.0091	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
0.92	150.0	0.	-0.0128	0.0091	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
1.10	180.0	0.	-0.0128	0.0091	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
2.21	360.0	0.	-0.0128	0.0091	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
4.41	720.0	0.	-0.0128	0.0090	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.
6.13	1000.0	0.	-0.0128	0.0090	0.0013	0.0003	0.0001	0.0000	0.0000	0.	0.	0.

*** WATTS/MWE-YEAR ***

0.	0.	0.	0.	44.9845	0.	0.	0.	0.	0.	0.	0.	0.
0.09	15.0	0.	0.	44.9701	0.	0.	0.	0.	0.000	0.	0.	0.
0.18	30.0	0.	0.	44.9558	0.	0.	0.	0.	0.000	0.	0.	0.
0.28	45.0	0.	0.	44.9414	0.	0.	0.	0.	0.000	0.	0.	0.
0.37	60.0	0.	0.	44.9270	0.	0.	0.	0.	0.000	0.	0.	0.
0.55	90.0	0.	0.	44.8983	0.	0.	0.	0.	0.000	0.	0.	0.
0.74	120.0	0.	0.	44.8696	0.	0.	0.	0.	0.000	0.	0.	0.
0.92	150.0	0.	0.	44.8409	0.	0.	0.	0.	0.000	0.	0.	0.
1.10	180.0	0.	0.	44.8122	0.	0.	0.	0.	0.000	0.	0.	0.
2.21	360.0	0.	0.	44.6406	0.	0.	0.	0.	0.001	0.	0.	0.
4.41	720.0	0.	0.	44.2993	0.	0.	0.	0.	0.001	0.	0.	0.
6.13	1000.0	0.	0.	44.0357	0.	0.	0.	0.	0.002	0.	0.	0.

GRADED FINAL K 1.091 *** AFTER DISCHARGE,BEFORE SEPARATION *** CASE NUMBER 9900
 THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

TIME AFTER REACTOR DISCHARGE UNITS OF 0.45 YEAR HALF=LIFE	DAYS	U236	NP237	PU238	PU239	PU240	PU241	PU242	AM241	AM243	CM242	CM244
*** PERCENT OF ELEMENT ***												
0.	0.	0.	100.00	83.51	12.18	2.86	1.25	0.20	0.	0.	0.	0.
0.09	15.0	0.	100.00	83.51	12.18	2.86	1.25	0.20	100.00	0.	0.	0.
0.18	30.0	0.	100.00	83.51	12.18	2.86	1.25	0.20	100.00	0.	0.	0.
0.28	45.0	0.	100.00	83.51	12.19	2.86	1.24	0.20	100.00	0.	0.	0.
0.37	60.0	0.	100.00	83.50	12.19	2.86	1.24	0.20	100.00	0.	0.	0.
0.55	90.0	0.	100.00	83.50	12.20	2.86	1.24	0.20	100.00	0.	0.	0.
0.74	120.0	0.	100.00	83.49	12.21	2.87	1.23	0.20	100.00	0.	0.	0.
0.92	150.0	0.	100.00	83.49	12.21	2.87	1.23	0.20	100.00	0.	0.	0.
1.10	180.0	0.	100.00	83.49	12.22	2.87	1.22	0.20	100.00	0.	0.	0.
2.21	360.0	0.	100.00	83.46	12.26	2.88	1.20	0.20	100.00	0.	0.	0.
4.41	720.0	0.	100.00	83.40	12.35	2.90	1.14	0.20	100.00	0.	0.	0.
6.13	1000.0	0.	100.00	83.36	12.40	2.92	1.10	0.20	100.00	0.	0.	0.

GRADED FINAL K 1.091 *** AFTER SEPARATION *** CASE NUMBER 9900
 THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY
 *** GM/TON ***

EXPOSURE 24000.0 MWD/T POWER DENS 25.00 MW/T RESIDENCE TIME 3.29 YRS, LOAD FACTOR 0.33
 THERMAL TO ELECTRICAL EFF,

TIME AFTER DISCHARGE 0.45 YR HALF=LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	URANIUM ..RECOVERED... U236 OTHER U	NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED..... PU238 PU239 PU240 PU241 PU242 NP237 AM241
			0.970 0.970	0.950	0.970 0.970 0.970 0.970 0.970 0. 0.
0.74	120.0	0.	0.	4.4	5646.27 1700.60 248.6 58.4 25.1 4.1 0. 0.
0.83	135.0	15.0	0.	4.4	5646.27 1700.05 248.6 58.4 25.0 4.1 0.00 0.05
1.00	163.0	43.0	0.	4.4	5646.27 1699.04 248.6 58.4 24.9 4.1 0.00 0.16
2.00	326.0	206.0	0.	4.4	5646.27 1693.14 248.6 58.4 24.3 4.1 0.00 0.74
3.00	489.0	369.0	0.	4.4	5646.27 1687.27 248.6 58.4 23.8 4.1 0.00 1.31
4.00	652.0	532.0	0.	4.4	5646.27 1681.42 248.6 58.4 23.2 4.1 0.00 1.87
5.00	815.0	695.0	0.	4.4	5646.27 1675.59 248.6 58.4 22.7 4.1 0.00 2.42
6.00	978.0	858.0	0.	4.4	5646.27 1669.77 248.6 58.4 22.1 4.1 0.01 2.95
7.00	1141.0	1021.0	0.	4.4	5646.27 1663.98 248.6 58.4 21.6 4.1 0.01 3.47

TIME AFTER DISCHARGE 0.45 YR HALF=LIVES	TIME AFTER SEPARATION DAYS	YIELD FACTOR	AMERICIUMRECOVERED..... AM241 AM243 NP237 PU239	CURIUMRECOVERED..... CM242 CM244 PU238 PU240
			0.950 0.950 0. 0.	0.950 0.950 0. 0.
0.74	120.0	0.	0.43 0. 0. 0.	0. 0. 0. 0.
0.83	135.0	15.0	0.43 0. 0.00 0.	0. 0. 0. 0.
1.00	163.0	43.0	0.43 0. 0.00 0.	0. 0. 0. 0.
2.00	326.0	206.0	0.43 0. 0.00 0.	0. 0. 0. 0.
3.00	489.0	369.0	0.43 0. 0.00 0.	0. 0. 0. 0.
4.00	652.0	532.0	0.43 0. 0.00 0.	0. 0. 0. 0.
5.00	815.0	695.0	0.43 0. 0.00 0.	0. 0. 0. 0.
6.00	978.0	858.0	0.43 0. 0.00 0.	0. 0. 0. 0.
7.00	1141.0	1021.0	0.43 0. 0.00 0.	0. 0. 0. 0.

GRADED FINAL K 1.091

*** AFTER SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** GM/MWE=YEAR ***

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.20	258.05	77.72	11.36	2.67	1.15	0.19	0.	0.
0.83	135.0	15.0	0.	0.20	258.05	77.70	11.36	2.67	1.14	0.19	0.00	0.00
1.00	163.0	43.0	0.	0.20	258.05	77.65	11.36	2.67	1.14	0.19	0.00	0.01
2.00	326.0	206.0	0.	0.20	258.05	77.38	11.36	2.67	1.11	0.19	0.00	0.03
3.00	489.0	369.0	0.	0.20	258.05	77.11	11.36	2.67	1.09	0.19	0.00	0.06
4.00	652.0	532.0	0.	0.20	258.05	76.84	11.36	2.67	1.06	0.19	0.00	0.09
5.00	815.0	695.0	0.	0.20	258.05	76.58	11.36	2.67	1.04	0.19	0.00	0.11
6.00	978.0	858.0	0.	0.20	258.05	76.31	11.36	2.67	1.01	0.19	0.00	0.13
7.00	1141.0	1021.0	0.	0.20	258.05	76.05	11.36	2.67	0.99	0.19	0.00	0.16

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.02	0.	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.02	0.	0.00	0.	0.	0.	0.	0.
1.00	163.0	43.0	0.02	0.	0.00	0.	0.	0.	0.	0.
2.00	326.0	206.0	0.02	0.	0.00	0.	0.	0.	0.	0.
3.00	489.0	369.0	0.02	0.	0.00	0.	0.	0.	0.	0.
4.00	652.0	532.0	0.02	0.	0.00	0.	0.	0.	0.	0.
5.00	815.0	695.0	0.02	0.	0.00	0.	0.	0.	0.	0.
6.00	978.0	858.0	0.02	0.	0.00	0.	0.	0.	0.	0.
7.00	1141.0	1021.0	0.02	0.	0.00	0.	0.	0.	0.	0.

GRADED FINAL K 1.091

*** AFTER SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** GM/MW4 ***

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.0000	-0.0144	0.0089	0.0013	0.0003	0.0001	0.0000	0.	0.
0.83	135.0	15.0	0.	0.0000	-0.0144	0.0089	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
1.00	163.0	43.0	0.	0.0000	-0.0144	0.0089	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
2.00	326.0	206.0	0.	0.0000	-0.0144	0.0088	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
3.00	489.0	369.0	0.	0.0000	-0.0144	0.0088	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
4.00	652.0	532.0	0.	0.0000	-0.0144	0.0088	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
5.00	815.0	695.0	0.	0.0000	-0.0144	0.0087	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
6.00	978.0	858.0	0.	0.0000	-0.0144	0.0087	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000
7.00	1141.0	1021.0	0.	0.0000	-0.0144	0.0087	0.0013	0.0003	0.0001	0.0000	0.0000	0.0000

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.0000	0.	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
1.00	163.0	43.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
2.00	326.0	206.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
3.00	489.0	369.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
4.00	652.0	532.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
5.00	815.0	695.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
6.00	978.0	858.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.
7.00	1141.0	1021.0	0.0000	0.	0.0000	0.	0.	0.	0.	0.

GRADED FINAL K 1.091

*** AFTER SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** WATTS/MWE-YEAR ***

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	0.	0.	43.5235	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.	0.	0.	43.5096	0.	0.	0.	0.	0.	0.000
1.00	163.0	43.0	0.	0.	0.	43.4836	0.	0.	0.	0.	0.	0.000
2.00	326.0	206.0	0.	0.	0.	43.3328	0.	0.	0.	0.	0.	0.000
3.00	489.0	369.0	0.	0.	0.	43.1825	0.	0.	0.	0.	0.	0.001
4.00	652.0	532.0	0.	0.	0.	43.0327	0.	0.	0.	0.	0.	0.001
5.00	815.0	695.0	0.	0.	0.	42.8834	0.	0.	0.	0.	0.	0.001
6.00	978.0	858.0	0.	0.	0.	42.7346	0.	0.	0.	0.	0.	0.001
7.00	1141.0	1021.0	0.	0.	0.	42.5864	0.	0.	0.	0.	0.	0.002

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	0.000	0.	0.	0.	0.	0.	0.	0.
0.83	135.0	15.0	0.000	0.	0.	0.	0.	0.	0.	0.
1.00	163.0	43.0	0.000	0.	0.	0.	0.	0.	0.	0.
2.00	326.0	206.0	0.000	0.	0.	0.	0.	0.	0.	0.
3.00	489.0	369.0	0.000	0.	0.	0.	0.	0.	0.	0.
4.00	652.0	532.0	0.000	0.	0.	0.	0.	0.	0.	0.
5.00	815.0	695.0	0.000	0.	0.	0.	0.	0.	0.	0.
6.00	978.0	858.0	0.000	0.	0.	0.	0.	0.	0.	0.
7.00	1141.0	1021.0	0.000	0.	0.	0.	0.	0.	0.	0.

GRADED FINAL K 1.091

*** AFTER SEPARATION ***

CASE NUMBER 9900

THESE TABLES ARE BASED ON ONLY THE NEPTUNIUM, PLUTONIUM AND AMERICIUM THAT EXISTED INITIALLY

*** PERCENT OF ELEMENT ***

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	URANIUM ..RECOVERED...		NEPTUNIUM RECOVERED NP237	PLUTONIUMRECOVERED.....						
			U236	OTHER U		PU238	PU239	PU240	PU241	PU242	NP237	AM241
0.74	120.0	0.	0.	100.00	100.00	83.44	12.21	2.87	1.23	0.20	100.00	100.00
0.83	135.0	15.0	0.	100.00	100.00	83.49	12.21	2.87	1.23	0.20	100.00	100.00
1.00	163.0	43.0	0.	100.00	100.00	83.49	12.22	2.87	1.23	0.20	100.00	100.00
2.00	326.0	206.0	0.	100.00	100.00	83.46	12.26	2.88	1.20	0.20	100.00	100.00
3.00	489.0	369.0	0.	100.00	100.00	83.44	12.29	2.89	1.18	0.20	100.00	100.00
4.00	652.0	532.0	0.	100.00	100.00	83.42	12.33	2.90	1.15	0.20	100.00	100.00
5.00	815.0	695.0	0.	100.00	100.00	83.39	12.37	2.91	1.13	0.20	100.00	100.00
6.00	978.0	858.0	0.	100.00	100.00	83.36	12.41	2.91	1.11	0.20	100.00	100.00
7.00	1141.0	1021.0	0.	100.00	100.00	83.34	12.45	2.92	1.08	0.21	100.00	100.00

TIME AFTER DISCHARGE 0.45 YR HALF-LIVES	DAYS	TIME AFTER SEPARATION DAYS	AMERICIUMRECOVERED.....				CURIUMRECOVERED.....			
			AM241	AM243	NP237	PU239	CM242	CM244	PU238	PU240
0.74	120.0	0.	100.00	0.	100.00	100.00	0.	0.	0.	0.
0.83	135.0	15.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
1.00	163.0	43.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
2.00	326.0	206.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
3.00	489.0	369.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
4.00	652.0	532.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
5.00	815.0	695.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
6.00	978.0	858.0	100.00	0.	100.00	100.00	0.	0.	0.	0.
7.00	1141.0	1021.0	100.00	0.	100.00	100.00	0.	0.	0.	0.

*** SPECIAL PRODUCT CONCENTRATIONS ***

NP-237 TARGET IN PRESSURIZED WATER REACTOR

CASE NUMBER 9900

A = NP237 B = AM241 C = AM243 D = AM242 E = CM242
F = CM243 G = CM244 H = PU238 I = FP -0

THE FULL SCALE VALUE FOR ALL ISOTOPES IS 8500.0 GRAMS/TON