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Thanks - MarkW

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Phase 1

Task 2 – LACBWR RPV Activated Material Report

Dairyland Power Cooperative
La Crosse Boiling Water Reactor Spent Fuel and Related Irradiated Materials Removal, Disposal and Storage Project

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EXECUTIVE SUMMARY

The objective of this task is the analytical determination of nuclide activation levels in the La Crosse Boiling Water Reactor (LACBWR) reactor pressure vessel (RPV), reactor internals and subcomponents. This effort involved a dual approach – manual calculations using a simplified reactor model for isotopic irradiation/decay, and a detailed irradiation analysis using the ORIGEN-ARP 2.00 computer code. Oak Ridge National Laboratory developed the code for the Nuclear Regulatory Commission and Department of Energy to satisfy a need for an "easy-to-use" standardized method of isotope activation and depletion/decay analysis for radioactive material.

Currently, the principal isotopes contributing to activity levels include Fe-55, Co-60, Ni-63, Nb-94, C-14 and Ni-59. Other activation products present at shutdown (April 1987) either have half-lives less than a year (e.g. Cr-51 with a half-life of 28 days; for any isotope of Mn, the longest half-life is 303 days; and Fe-59 with a half-life of 44.5 days) and have now decayed to insignificant Curie levels, or are present in insignificant quantities resulting in negligible contributions to the current Curie inventory. The decay time used for this evaluation is 15.7 years, which assumes that the RPV, reactor internals and subcomponents would be packaged and shipped in January 2003. This assumption provides additional conservatism to this evaluation since the more realistic timetable for the packaging and shipment of the RPV, reactor internals and subcomponents is 2006.

Niobium (Nb) concentration is very important in determining the classification of waste at LACBWR. Trace amounts of Nb were not routinely analyzed quantitatively or were below state-of-the-art detection limits when the LACBWR RPV, reactor internals and subcomponents were fabricated. For the evaluation of the RPV, reactor internals and installed subcomponents, the upper bound material percentage for Nb was utilized from the range provided in NUREG/CR 6567, Low-Level Radioactive Waste Classification, Characterization, and Assessment: Waste Streams and Neutron-Activated Metals, for 304 Stainless Steel, Inconel 600 and Zircalloy. Using this approach, the results provided for Nb identified in this report are extremely conservative. Actual and/or lower conservative concentration values were used for Nb in determining the total number of shrouds that could be shipped independent of the RPV.

Activity levels were determined analytically and then averaged over the waste volume in the RPV, reactor internals and subcomponents to obtain Curie concentrations for each nuclide in accordance with calculation techniques acceptable to Barnwell and in accordance with10CFR61. Neither the RPV head or the vessel studs were included into the volume of radioactive material being evaluated. These items were not included in the evaluation due to the extremely low neutron flux levels (low material activation) in those regions and to provide DPC the flexibility to dispose of these items separately, if desired.

A surface coating evaluation was performed on the inside surfaces of the RPV, reactor internals and subcomponents. The results showed that the surface coating has an insignificant effect on the overall activity levels used in determining the waste classification category.

The averaged Curie concentration levels of each nuclide were compared with Barnwell's waste acceptance criteria for Class A, B and C per Figure ES-1.

Figure ES-1 Barnwell Waste Acceptance Classification Determination for the RPV

Radionuclide	LACBWR Total Curies (January 2003) in RPV, internals and subcomponents	LACBWR Concentration in RPV, internals and subcomponents (Curies/m^3)	Barnwell Waste Acceptance Criteria		LACBWR Concentration Relative to the Waste Acceptance Classification Limit
			Concentration (Curies/m^3)	Classification	
Fe-55	1235	93.8	≤ 700	A	0.134
Co-60	4778	363.1	≤ 700	A	0.519
Ni-59	14	1.1	≤ 22	A	0.048
C-14	1.82×10^{-5}	1.38×10^{-6}	≤ 0.8	A	0.00
C-14 in metal	4.61	0.35	≤ 8	A	0.044
H-3	1.07×10^{-5}	8.14×10^{-7}	≤ 40	A	0.002
Ni-63	7.27×10^{-2}	5.52×10^{-3}	≤ 3.5	A	0.000
Sr-90	8.10×10^{-5}	6.16×10^{-6}	≤ 0.04	A	0.000
Cs-137	3.28×10^{-4}	2.49×10^{-5}	≤ 1	A	0.000
> 5 yr half-life alpha emitting transuranics	8.44×10^{-4}	8.01×10^{-3} in nCi/g	≤ 10 in nCi/g	A	0.000
Pu-241	4.68×10^{-3}	4.44×10^{-2} in nCi/g	≤ 350 in nCi/g	A	0.000
Cm-242	2.96×10^{-8}	2.81×10^{-7} in nCi/g	≤ 2000 in nCi/g	A	0.000
Total Fractional Sum of Class A Waste:					0.747
Ni-63 in metal	2098	159.4	≤ 700	B	0.228
Nb-94	0.56	0.042	≤ 0.2	C	.213

Based on these analyses, it is concluded that the LACBWR RPV, reactor internals and subcomponents can be transported intact to Barnwell for ultimate disposal without removal of high Curie content components.

WPI wants to acknowledge the extensive information base made available to WPI and assistance, particularly on the part of Seymour Raffety, Ph.D., in obtaining relevant data for this study.

1.0 Background

One approach for disposal of the LACBWR reactor pressure vessel, reactor internals and subcomponents is to sever all piping connections, seal all openings/accesses, package for transportation and ship the vessel, reactor internals and subcomponents intact to Barnwell. At present, Barnwell can accept Class A, B and C waste.

2.0 Task Description

Determine the current activation levels of residual nuclides in the RPV, reactor internals and subcomponents. This task ensures that the proper Curie inventory is used in determining the optimum GTCC disposal methods and packaging (if required), and that class A, B and C waste will be packaged in accordance with the proper Waste Acceptance Criteria (WAC) for the selected disposal site.

3.0 Technical Approach

A dual approach was used in determining the Curie content of the RPV, reactor internals and subcomponents. The ORIGEN-ARP 2.00 computer code, developed by Oak Ridge National Laboratory, was used for detailed analysis. A simplified model suitable for manual calculations was developed to benchmark the problem and validate the ORIGEN-ARP code.

The decay time assumed for this evaluation is 15.7 years. Based on this decay time, any radionuclide with a half-life of less than 1 year (e.g. Cr-51 with a half-life of 28 days; for any isotope of Mn, the longest half-life is 303 days; and Fe-59 with a half-life of 44.5 days) is not considered in the evaluation due to the minimal amounts remaining in the RPV, reactor internals and subcomponents (over 15 half-lives have transpired and all of the material decayed away).

Niobium (Nb) concentration is very important in determining the classification of waste at LACBWR. Trace amounts of Nb were not routinely analyzed quantitatively or were below state-of-the-art detection limits when the LACBWR RPV, reactor internals and subcomponents were fabricated. For the evaluation of the RPV, reactor internals and installed subcomponents, the upper bound material percentage for Nb was utilized from the range provided in NUREG/CR 6567, Low-Level Radioactive Waste Classification, Characterization, and Assessment: Waste Streams and Neutron-Activated Metals, for 304 Stainless Steel, Inconel 600 and Zircalloy. Using this approach, the results provided for Nb identified in this report are extremely conservative. Actual and/or lower conservative concentration values were used for Nb in determining the total number of shrouds that could be shipped independent of the RPV.

3.1 Manual Calculation Model

A simplified homogeneous reactor was used to approximate the core and internals of the RPV. The core and major internals were modeled as a homogeneous composition in cylindrical geometry with a single group of neutrons at core average thermal energy. Average thermal neutron fluxes within the active core volume and external to it were determined from axial and

radial neutron flux curves provided in the La Crosse Boiling Water Reactor Safeguards Report (Reference 1) and the Final Safety Analysis Report (Reference 2). An incident thermal neutron flux was assigned to the RPV and each internal/component. Atomic densities of target isotopes (precursors) and thermal neutron cross sections at core average temperature were calculated. Material composition data for stainless steel, inconel and zircalloy are shown in Table 1. The data for Table 1 was obtained from References 3, 4, 5 and 9.

Currently, the principal isotopes contributing to activity levels include Fe-55, Co-60, Ni-63, Nb-94, C-14 and Ni-59. Other activation products present at shutdown (April 1987) either have half-lives less than a year (Cr-51, Mn-56 and Fe-59) and have now decayed to insignificant Curie levels, or are present in insignificant quantities resulting in negligible contributions to the current Curie inventory.

Hafnium (Hf), present in ten of the Asea-Atom control rods as a neutron absorber and also as a common impurity in Zirconium alloys was also analyzed. The analysis due to the impurities in Zirconium (trace element) was based on a Zircalloy-4 material certification for fuel shrouds that stated 72ppm of Hf obtained by chemical analysis (Reference 5). The activity from Hf-182 for both the Asea-Atom control rods and the impurities in Zirconium was calculated using ORIGEN-ARP to be less than a Curie. Hf-182 is not a reportable isotope under 10CFR61.

The activity due to Carbon (C-14) was calculated to be 12.78 curies using the manual method and 4.61 curies using the ORIGEN-ARP computer code. This curie content is principally due to the activation and decay of Nitrogen-14 in the components. Even though the carbon content in the RPV is 2%, the flux level in the carbon steel portion of the RPV is low (over 4 orders of magnitude) with respect to the core average neutron flux.

The activity due to Silicon (Si-32) was evaluated since it is a trace element in both Inconel 600 and 304/304L Stainless Steel. Si-32 has a long half-life (650 years), which results in a very slow build-up in the material. Given the small cross-section for Si-32 (< 1 barn) and a low material concentration (0.6%), it was determined that there is approximately 3 microcuries of Si-32. Si-32 is not a reportable isotope under 10CFR61.

The activity due to Molybdenum (Mo-93) was evaluated since it is a trace element of 304/304L Stainless Steel. Mo-93 has a long half-life (4000 years), which results in a very slow build-up in the material. Given the small cross-section for Mo-93 (3 millibarns) and a low material concentration (0.2%), it was determined that there is approximately 0.1 curies of Mo-93. Mo-93 is not a reportable isotope under 10CFR61.

The activity due to Chlorine (Cl-36) was evaluated since it is a trace element of Zircalloy. Cl-36 has a long half-life (300,000 years), which results in a very slow build-up in the material. Given the low material concentration (< 100 ppm), it was determined that there is less than 1 curie of Cl-36. Cl-36 is not a reportable isotope under 10CFR61.

With only 9.31 effective full power years of irradiation time, none of the nuclides of interest reached saturation (highest activity that can be produced in a target with a given neutron flux,

i.e., rate of production equals rate of decay). Fe-55, with the shortest half-life of the nuclides analyzed, reached 91% of saturation; Co-60 reached 71%. Ni-59, with a half-life of 7.5 x 10^4 years attained less than 0.01% of saturation while Ni-63 reach 6.4% (See Table 2).

For the nuclides of interest, the production rate was calculated based on atomic density of target atoms, absorption cross-sections and core average thermal neutron flux. The reactor operated from July 1967 to April 1987 at an average plant thermal factor of 54% resulting in 9.31 effective full power years of irradiation (Reference 6).

Isotopic production rates and decay rates were inserted into the standard activity equation (Table 2) to obtain activity levels projected to January 2003. For control rods, nuclide activity levels for control rod number 7 were used to estimate current Curie levels (Reference 4). Control rod number 7 has an exposure history very typical to the LACBWR reactor and was the only control rod that was sent off-site for detailed isotopic analysis and examination.

The activity levels calculated manually are presented in Tables 3 and 4 or addressed above.

3.2 ORIGEN-ARP Code

ORIGEN-ARP (automatic rapid processing) performs isotopic activation and depletion/decay calculations for light water reactors. Oak Ridge National Laboratory developed ORIGEN-ARP (and its predecessors) for the Nuclear Regulatory Commission and the Department of Energy to satisfy the need for a standardized method of isotope depletion/decay analysis of spent fuel, fissile material and radioactive material. It can be used for spent fuel characterization, isotopic inventory, radiation source terms and decay heat. The code automatically interpolates cross sections for depletion/decay analysis using enrichments (1.5 to 5wt% U-235) and burnups (0 to 60,000 MWD/MTU) generated from a set of libraries for light water reactor designs. Interpolated cross sections from ARP are passed to ORIGEN-S to perform the depletion/decay calculations. The ORIGEN-ARP sequence includes the post-processing module OPUS to generate ASCII plot data files and the PlotOPUS Windows graphical user interface to plot the data. The ORIGEN-ARP 2.00 computer code includes the use of a streamlined version of the SAS2H sequence of the SCALE code system that has been used worldwide for treating problems related to the characterization of spent nuclear fuel from light-water reactors and other types of reactors for disposal, storage and shipment.

ORIGEN-ARP develops its own neutron flux curves based on input data (initial enrichment, burnup and average power days per fuel cycle) and fuel type. ORIGEN-ARP produces problem-dependent ORIGEN-S cross-section libraries by reading a set of standard libraries for a fuel assembly type and interpolating on enrichment and burnup. The standard BWR fuel assembly in the ORIGEN-ARP library is an 8 x 8 array. LACBWR fuel is a 10 x 10 array. The effect of using an 8 x 8 library is minimal for this evaluation. The moderator to fuel ratio (H_2O/UO_2) of the LACBWR core is typical of the moderator to fuel ratio for BWR cores as shown in the following: LACBWR moderator to fuel ratio (unrodded) is 2.63 (reference 1). Utilizing an algorithm from two other BWRs from different vintages of plants and computing the moderator/fuel ratio for LACBWR, a ratio of 3.43 was obtained for LACBWR. Comparing this

ratio with the average for the first BWR (3.59) gives a differential of -4.4%; for the second BWR (3.64) the differential is -5.8%. These are considered small variances that support the use of an 8X8 model for LACBWR. The slightly higher ratios for the two other BWRs indicates that an 8X8 fuel array would provide a more thermalized spectrum resulting in higher activation levels for components within the active core volume. This higher activation would provide additional conservatism for the LACBWR calculations. In addition and as stated later in Section 4.0, the average thermal neutron flux calculated and used by ORIGEN-ARP yielded almost identical results when compared with the thermal neutron fluxes calculated during the LACBWR initial design efforts by Allis-Chalmers.

ORIGEN-ARP used 27 groups of neutrons and spectrum-weighted cross sections in calculating activity levels of the RPV, internals and subcomponents at 15.7 years (January 2003) after the shutdown of LACBWR. The ORIGEN-ARP results are presented in Tables 5 and 6. Table 7 identifies 99 shrouds located in both the RPV and storage well (there are 97 shrouds in the storage well) that could be shipped independent of the reactor vessel based upon the ORIGEN-ARP results for the curies of Nb-94 per shroud. Typical ORIGEN-ARP input data is shown in Appendix 1.

Figure 1 shows a typical output curve from ORIGEN-ARP. This particular plot shows radioactive decay of the four principal nuclides in the steam separators from plant final shutdown through January 2003.

To determine the material activation outside the active core region, the volumes (or weights) of natural elements were reduced by the ratio of incident flux to core average thermal flux. This is appropriate since activation is directly proportional to quantity of material and neutron flux (Table 8).

3.3 Surface Coating Analysis

The exposure of the RPV, reactor internals and subcomponents to reactor coolant results in surface coatings of trace transuranics and fission product radionuclides such as Sr-90 and Cs-137. The presence of these radionuclides can have a significant effect on the classification of irradiated hardware, especially if failed fuel occurred in the reactor core. The evaluation of the surface coating was performed by the following method: 1) Estimating the internal surface area of the RPV (not including the RPV Head), internals and subcomponents (Table 9); 2) Multiply the total surface area by the isotopic concentrations determined by smear samples; and 3) Incorporate the results, as appropriate, into the previously determined activity levels and then compare the results to the Barnwell Waste Classification Categories.

Smear samples were obtained from the internal piping surfaces of the Shutdown Condenser and are representative of the surface coating in the RPV, reactor internals and subcomponents. Figure 2 provides a listing of the LACBWR 10CFR61 Radiological Analysis Results. The activity levels utilized in the evaluation used the values provided in Figure 2 as the basis. The values in Figure 2 were adjusted to reflect additional decay time (January 2003 versus April 1,

2002) and then those values were increased by the 2 standard deviation uncertainty included in the 10CFR61 results.

The results of the surface coating evaluation are provided in Table 10. As can be seen from Table 10, the presence of the surface coating has an insignificant effect on the overall activity levels used in determining the waste classification category.

4.0 Verification of ORIGEN-ARP

Manual calculations provided upper bound activity levels for the RPV, internals and subcomponents. ORIGEN–ARP 2.00 was expected to compute lower though more accurate activation levels.

Activity levels computed by ORIGEN-ARP were about 50% lower than those calculated manually. Much of this difference is attributable to the difference in thermal neutron flux values. The average thermal neutron flux used in the manual calculations was 1.5 x 10^{13} neutrons/cm^2-sec as provided in the La Crosse Boiling Water Reactor Safeguards Report (Reference 1) and the Final Safety Analysis Report (Reference 2). As stated in Reference 1, this flux contains a safety factor of 1.5. Thermal neutron fluxes calculated by ORIGEN-ARP ranged from 1.06 - 1.09 x 10^{13} neutrons/cm^2-sec. This difference in neutron fluxes contributes about 30% to the difference between the manual calculation and the ORIGEN-ARP results.

Another factor contributing to the difference in estimates is the calculation of effective thermal cross sections by scaling room temperature (0.0253ev) cross sections to core average temperature cross sections. This methodology assumes a well-moderated medium where neutrons follow a Maxwellian energy distribution. In fact, the low moderator density in the core region of the boiling water reactor results in a harder (less thermalized) neutron energy spectrum, and consequently lower effective cross sections than calculated by hand. This difference in neutron spectrum (cross section) contributes about 20% to the difference between the manual calculation and the ORIGEN-ARP results.

The high thermal neutron flux coupled with large thermal cross sections will over-predict activation of internals and components, particularly in the active core volume. For components further from the fuel, the flux will likely be more thermalized and yield more activation per unit of thermal flux. However, flux levels (and therefore activation rates) decrease rapidly outside the active fuel region.

In addition to the comparison between the manual calculation and the ORIGEN-ARP results, the ORIGEN-ARP code was also verified or benchmarked against a BWR test case provided by the Oak Ridge National Laboratory (Appendices 2 and 3). The results from both comparisons verified that the ORIGEN-ARP computer code was installed and functioning properly.

5.0 Comparison with Barnwell Waste Categories

Activity levels (Curies) for each nuclide were averaged over the waste volume that included the RPV wall, reactor internals and subcomponents. The volume was estimated to be 13.16 cubic meters (Table 11). This approach is in accordance with calculation techniques specified by Barnwell (Reference 7) and 10CFR61 (Reference 8). The peripheral shroud, steam dryers, RPV head, vessel studs and supporting structure for these components were not included in the waste volume estimate. Neither the RPV head or the vessel studs were included into the volume of radioactive material being evaluated. These items were not included in the evaluation due to the extremely low neutron flux levels (low material activation) in those regions and to provide DPC the flexibility to dispose of these items separately, if desired.

As identified earlier in this report, the decay time assumed for this evaluation is 15.7 years. Based on this decay time, any radionuclide with a half-life of less than 1 year (e.g. Cr-51 with a half-life of 28 days; for any isotope of Mn, the longest half-life is 303 days; and Fe-59 with a half-life of 44.5 days) is not considered in the evaluation due to the minimal amounts remaining in the RPV, reactor internals and subcomponents (over 15 half-lives of the material have transpired and all of the material decayed away).

The averaged Curie concentration levels of each nuclide were compared with Barnwell's Waste Acceptance Criteria (WAC) limits for Class A, B and C waste (Table 12) for the RPV.

6.0 Conclusions

Based on these analyses, it is concluded that the LACBWR RPV, reactor internals and subcomponents can be transported intact to Barnwell for ultimate disposal without accessing the vessel interior for activity assessments and/or removal of high Curie content components.

As the calculations have demonstrated, there is no greater than Class C waste when activation levels are averaged over the RPV, reactor internals and subcomponents. The highest waste classification for the LACBWR RPV, its internals and subcomponents is Class C due to Nb-94.

Table 1

Material Composition (weight %)

Element \ Material	304 Stainless Steel	Inconel 600	Zircalloy – 4
Fe	71	6.6	0.22
Co (304/304L)	0.14/0.05	0.05	0.001
Ni	9	77	0.004
Nb	.03	.04	.015

Table 2

Manual Calculation Data as of January 2003

Isotope Activity $N\sigma\bar{\phi}(1 - e^{-\lambda t_i})\, e^{-\lambda t_d}$ (dis/sec-cm^3)	Half-Life (years)	N (atoms/cc)	σ 1×10^{-24} cm^2 (temperature corrected)	$(1 - e^{-\lambda t_i})$	$e^{-\lambda t_d}$
Fe 55	2.7		1.4	0.91	0.018
1.2×10^9 (304 SS)		3.5×10^{21}			
1.2×10^8 (Inconel 600)		3.4×10^{20}			
3.2×10^6 (Zircalloy - 4)		9.4×10^{18}			
Co 60	5.27		23.4	0.70	0.13
3.5×10^9 (304 SS)		1.1×10^{20}			
1.3×10^9 (Inconel 600)		4.1×10^{19}			
2.2×10^7 (Zircalloy - 4)		6.9×10^{17}			
Ni 59	7.5×10^4		2.9	8.6×10^{-5}	1
1.9×10^7 (304 SS)		5.0×10^{21}			
1.7×10^8 (Inconel 600)		4.5×10^{22}			
7.2×10^3 (Zircalloy - 4)		1.9×10^{18}			
Ni 63	100.1		8.9	0.062	0.90
2.1×10^9 (304 SS)		2.7×10^{20}			
1.8×10^{10} (Inconel 600)		2.4×10^{21}			
7.8×10^5 (Zircalloy - 4)		1.0×10^{17}			
Nb 94	2×10^4		0.72	3.2×10^{-4}	1
5.2×10^4 (304 SS)		1.5×10^{19}			
7.3×10^4 (Inconel 600)		2.1×10^{19}			
2.3×10^4 (Zircalloy - 4)		6.6×10^{18}			

$\bar{\phi}$ = flux = 1.5×10^{13} neutrons/ cm^2-sec
t_i = t(irradiation) = 9.31 years
t_d = t(decay) = 15.7 years

Table 3

RPV and Installed Components Estimated Curie Content In Activated Metal as of January 2003 (Manual Calculation)

Reactor Components	Activity in Curies						
	Fe-55	Co-60	Ni-59	Ni-63	Nb-94	C-14	Totals
Core Vertical Posts	16	107	--	4	0.049	1.63	129
Core Lateral Support Structure	439	1282	7	732	0.007	0.96	2461
Steam Separators	1174	3425	19	1955	0.02	2.56	6576
Thermal Shield	151	440	2	251	0.004	0.33	844
Horizontal Grid Bars (7)	--	2	--	--	0.01	--	2
In-Core Monitor Guide Tubes (9)	2	26	3	353	0.029	0.15	384
Pressure Vessel	18	32	--	18	0.017	0.02	68
72 Zr Fuel Shrouds in RPV	23	155	--	6	0.121	2.35	186
8 SS Fuel Shrouds in RPV	296	863	5	518	0.01	0.67	1683
Core Support Structure	348	1014	6	579	0.002	0.76	1948
Control Rods (29)	409	381	9	548	0.191	3.35	1351
Totals:	2876	7727	51	4964	0.46	12.78	15631

Table 4

Reactor Components in Fuel Pool Estimated Curie Content In Activated Metal as of January 2003 (Manual Calculation)

Reactor Components	Activity in Curies						
	Fe-55	Co-60	Ni-59	Ni-63	Nb-94	C-14	Totals
73 Zr Shrouds	23	157	--	6	0.123	2.38	189
24 SS Shrouds	888	2589	15	1644	0.03	2.01	5138
10 Control Rods	141	131	3	189	0.066	1.16	465
2 Startup sources	157	458	2	275	0.004	0.34	892
Totals:	1209	3335	20	2114	0.223	5.89	6684

Table 5

RPV and Installed Components Estimated Curie Content In Activated Metal as of January 2003 (ORIGEN-ARP)

Reactor Components	Activity in Curies						
	Fe-55	Co-60	Ni-59	Ni-63	Nb-94	C-14	Totals
Core Vertical Posts	6	61	--	--	0.15	0.59	68
Core Lateral Support Structure	178	753	2	213	0.02	0.35	1146
Steam Separators	475	2008	5	568	0.07	0.92	3057
Thermal Shield	61	256	--	73	0.01	0.12	390
Horizontal Grid Bars (7)	--	--	--	--	--	--	0
In-Core Monitor Guide Tubes (9)	--	17	--	103	--	0.05	120
Pressure Vessel	7	20	--	5	--	0.01	32
72 Zr Fuel Shrouds in RPV	9	92	--	2	0.21	0.85	104
8 SS Fuel Shrouds in RPV	120	520	--	143	0.02	0.24	783
Core Support Structure	141	598	--	168	0.02	0.27	907
Control Rods (29)	238	453	7	823	0.06	1.21	1522
Totals:	1235	4778	14	2098	0.56	4.61	8130

Table 6

Reactor Components in Fuel Pool Estimated Curie Content In Activated Metal as of January 2003 (ORIGEN-ARP)

Reactor Components	Activity in Curies						
	Fe-55	Co-60	Ni-59	Ni-63	Nb-94	C-14	Totals
73 Zr Shrouds(note 1)	9	93	--	2	0.21	0.86	105
24 SS Shrouds(note 1)	360	1560	2	429	0.06	0.72	2351
10 Control Rods (note 2)	82	156	2	284	0.02	0.42	524
2 Startup sources (note 3)	63	266	--	76	--	0.12	405
Totals:	514	2075	4	791	0.29	2.12	3385

Note 1 – Shroud curie values for Nb-94 are extremely conservative per this table, Table 7 provides more realistic values of Nb in the applicable shrouds and the applicable waste classification relative to Nb-94 concentrations per identified shroud. There are 99 shrouds identified in Table 7 (the identified shrouds are located in both the reactor vessel and the fuel pool) that can be shipped independent of the reactor vessel.

Note 2 – Waste classification determination for the control rods in the fuel pool based on Nb-94 is as follows: volume per control rod is 0.012 m^3. Curies of Nb-94 per control rod is 0.002. The average curie concentration per control rod is 0.167 curie/m^3. The maximum average curie concentration for Nb-94 for class C waste is 0.20 curie/m^3. Due to the conservative concentrations of Ni-63 and C-14 in the material, the sum of the fractions for class C waste will be 1.22. This is not acceptable for disposal without prior approval from the state. There is a high probability that the material will be acceptable to the state given the radiological conditions and physical package form. Based on past experience, variances have been granted for Ni-63. This avenue should be explored prior to more detailed analysis.

Note 3 – Waste classification determination for the start up sources in the fuel pool based on Nb-94 is as follows: volume per start up source is 0.054 m^3. Curies of Nb-94 per start up source is 0.002 (per manual calculation). The average curie concentration per start up source is 0.037 curie/m^3. The maximum average curie concentration for Nb-94 for class C waste is 0.20 curie/m^3. The maximum average curie concentration for Nb-94 for class A waste is 0.02 curie/m^3.

Table 7
Identification of Shrouds That Can Be Shipped Without The Vessel

99 SHROUDS ARE CONSIDERED CLASS A OR C WASTE WITH SUMMARY AS FOLLOWS: Totals: CarTech 82 Class C 4 in SW SS Shrouds 4 0 in SW
Nb - 94 Lambda = 3.465E-05 /years CarTech 9 Class A AC Shrouds 24 24 in SW

Carpenter Technology Shrouds No	EFPDs Designation Number	519.7 Cycle 1	127.2 Cycle 1A	89.2 Cycle 2	385.3 Cycle 3	364.2 Cycle 4	199.7 Cycle 5	356.1 Cycle 6	283.9 Cycle 7	271.2 Cycle 8	321.8 Cycle 9	272.3 Cycle 10	206.3 Cycle 11	Total Effective Full Power Days	Total Eff. Full Power Years	Irradiation exponent value	Calc decay exponent value	Calc Irradiation Sum	irradiation time correction ratio	material correction ratio	Corrected Curies	corrected ci/m3	Nb-94 Classification
83	301		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
84	302		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
85	303		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
86	304		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
87	305		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
88	306		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
89	307		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
90	308		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
91	309	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
92	310		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
93	311		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
94	312	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
95	313		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
96	314	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
97	315	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
98	316		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
99	317	Location - Storage Well					X	X	X	X	X	X		1705	4.668	0.99983827	0.999456	3.2254E-04	0.501	0.333	0.000488	0.129	C
100	318	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
101	319	Location - Storage Well					X	X	X	X	X	X		1705	4.668	0.99983827	0.999456	3.2254E-04	0.501	0.333	0.000488	0.129	C
102	320		Location - Reactor Vessel							X	X	X	X	1071.6	2.934	0.99989835	0.999456	3.2254E-04	0.315	0.333	0.000306	0.081	C
103	321		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
104	322		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
105	323		Location - Reactor Vessel							X	X	X	X	1071.6	2.934	0.99989835	0.999456	3.2254E-04	0.315	0.333	0.000306	0.081	C
106	324		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
107	325	Location - Storage Well					X	X	X	X	X	X		1705	4.668	0.99983827	0.999456	3.2254E-04	0.501	0.333	0.000488	0.129	C
108	326		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
109	327	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
110	328		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
111	329		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
112	330		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
113	331		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
114	332		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
115	333		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
116	334		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
117	335		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
118	336		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
119	337		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
120	338		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
121	339		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
122	340		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
123	341		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
124	342		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
125	343	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
126	344		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
127	345		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
128	346		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
129	347		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
130	348		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
131	349		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
132	350		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
133	351		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
134	352		Location - Reactor Vessel							X	X	X	X	1071.6	2.934	0.99989835	0.999456	3.2254E-04	0.315	0.333	0.000306	0.081	C
135	353		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
136	354		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
137	355		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
138	356		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
139	357		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
140	358	Location - Storage Well					X	X	X	X	X	X		1705	4.668	0.99983827	0.999456	3.2254E-04	0.501	0.333	0.000488	0.129	C
141	359		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
142	360		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
143	361	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
144	362		Location - Reactor Vessel									X	X	478.6	1.310	0.9999546	0.999456	3.2254E-04	0.141	0.333	0.000137	0.036	C
145	363		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C

Table 7 (Continued)
Identification of Shrouds That Can Be Shipped Without The Vessel

99 SHROUDS ARE CONSIDERED CLASS A OR C WASTE WITH SUMMARY AS FOLLOWS: Totals: CarTech 62 Class C 4 in SW SS Shrouds 4 0 in SW
Nb - 94 Lambda = 3.465E-05 /years CarTech 9 Class A AC Shrouds 24 24 in SW

Carpenter Technology Shrouds

No.	EFPDs Designation Number	519.7 Cycle 1	127.2 Cycle 1A	89.2 Cycle 2	385.3 Cycle 3	364.2 Cycle 4	199.7 Cycle 5	356.1 Cycle 6	283.9 Cycle 7	271.2 Cycle 8	321.8 Cycle 9	272.3 Cycle 10	206.3 Cycle 11	Total Effective Full Power Days	Total Eff. Full Power Years	Irradiation exponent value	Calc decay exponent value	Calc irradiation Sum	Irradiation time correction ratio	material correction ratio	Corrected Curies	corrected ci/m3	Nb-94 Classification
146	364		Location - Reactor Vessel									X	X	478.6	1.310	0.9999548	0.999456	3.2254E-04	0.141	0.333	0.000137	0.036	C
147	365		Location - Reactor Vessel									X	X	478.6	1.310	0.9999548	0.999456	3.2254E-04	0.141	0.333	0.000137	0.036	C
148	366	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
149	367		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
150	368	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
151	369		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
152	370		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
153	371		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
154	372	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
155	373		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
156	374		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
157	375		Location - Reactor Vessel							X	X	X	X	1071.6	2.934	0.99989835	0.999456	3.2254E-04	0.315	0.333	0.000306	0.081	C
158	376		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
159	377		Location - Reactor Vessel										X	206.3	0.565	0.99998043	0.999456	3.2254E-04	0.061	0.333	0.000059	0.016	A
160	378		Location - Reactor Vessel					X	X	X	X	X	X	1711.6	4.686	0.99983764	0.999456	3.2254E-04	0.503	0.333	0.000489	0.129	C
161	379		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C
162	380	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
163	381		Location - Reactor Vessel				X	X	X	X	X	X	X	1911.3	5.233	0.9998187	0.999456	3.2254E-04	0.562	0.333	0.000546	0.144	C
164	382	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used	Not Used										
165	383		Location - Reactor Vessel									X	X	478.6	1.310	0.9999548	0.999456	3.2254E-04	0.141	0.333	0.000137	0.036	C
166	384		Location - Reactor Vessel						X	X	X	X	X	1355.5	3.711	0.99987142	0.999456	3.2254E-04	0.399	0.333	0.000388	0.102	C

OTHER SHROUDS 0.8364 GWD = 1 EFFECTIVE FULL POWER YEARS PER SHROUD

								GWD								
33SS	Exposure	is	0.956	GWD	(no reduction in Nb concentration taken)	Location - Reactor Vessel	0.956	1.142994	0.9999604	0.999456	3.2254E-04	0.123	0.000	0.000307	0.089	C
34SS	Exposure	is	0.935	GWD	(no reduction in Nb concentration taken)	Location - Reactor Vessel	0.935	1.117886	0.99996127	0.999456	3.2254E-04	0.120	0.000	0.000300	0.087	C
35SS	Exposure	is	0.925	GWD	(no reduction in Nb concentration taken)	Location - Reactor Vessel	0.925	1.10593	0.99996168	0.999456	3.2254E-04	0.119	0.000	0.000297	0.086	C
36SS	Exposure	is	0.924	GWD	(no reduction in Nb concentration taken)	Location - Reactor Vessel	0.924	1.104735	0.99996172	0.999456	3.2254E-04	0.119	0.000	0.000297	0.086	C

Alfa-Chalmers Shrouds

Test	Test2	Exposure	is	3.02	GWD	(100 ppm Nb concentration - max is 150 ppm)	Test	3.02	3.610713	0.9998749	0.999456	3.2254E-04	0.388	0.667		0.199	Test
29	F-1	Exposure	is	2.816	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.816	3.36681	0.99988335	0.999456	3.2254E-04	0.362	0.667	0.000703	0.186	C
30	F-10	Exposure	is	2.793	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.793	3.339311	0.9998843	0.999456	3.2254E-04	0.359	0.667	0.000698	0.184	C
31	L-6	Exposure	is	2.777	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.777	3.320182	0.99988496	0.999456	3.2254E-04	0.357	0.667	0.000694	0.183	C
32	E-1	Exposure	is	2.763	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.763	3.303443	0.99988554	0.999456	3.2254E-04	0.355	0.667	0.000690	0.182	C
33	L-5	Exposure	is	2.755	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.755	3.293879	0.99988587	0.999456	3.2254E-04	0.354	0.667	0.000688	0.182	C
34	A-5	Exposure	is	2.734	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.734	3.268771	0.99988674	0.999456	3.2254E-04	0.351	0.667	0.000683	0.180	C
35	E-10	Exposure	is	2.713	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.713	3.243663	0.99988761	0.999456	3.2254E-04	0.348	0.667	0.000678	0.179	C
36	A-6	Exposure	is	2.673	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.673	3.195839	0.99988927	0.999456	3.2254E-04	0.343	0.667	0.000668	0.176	C
41	E-7	Exposure	is	2.77	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.77	3.311813	0.99988525	0.999456	3.2254E-04	0.356	0.667	0.000692	0.183	C
42	E-4	Exposure	is	2.763	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.763	3.303443	0.99988554	0.999456	3.2254E-04	0.355	0.667	0.000690	0.182	C
43	F-7	Exposure	is	2.745	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.745	3.281923	0.99988629	0.999456	3.2254E-04	0.353	0.667	0.000686	0.181	C
44	F-4	Exposure	is	2.714	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.714	3.244859	0.99988757	0.999456	3.2254E-04	0.349	0.667	0.000679	0.179	C
45	G-6	Exposure	is	2.725	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.725	3.258011	0.99988712	0.999456	3.2254E-04	0.350	0.667	0.000681	0.180	C
46	D-5	Exposure	is	2.707	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.707	3.23649	0.99988786	0.999456	3.2254E-04	0.348	0.667	0.000676	0.178	C
47	C-5	Exposure	is	2.719	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.719	3.250837	0.99988736	0.999456	3.2254E-04	0.349	0.667	0.000679	0.179	C
48	D-6	Exposure	is	2.706	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.706	3.235294	0.9998879	0.999456	3.2254E-04	0.348	0.667	0.000676	0.178	C
49	C-4	Exposure	is	2.711	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.711	3.241272	0.9998877	0.999456	3.2254E-04	0.348	0.667	0.000677	0.179	C
50	H-7	Exposure	is	2.719	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.719	3.250837	0.99988736	0.999456	3.2254E-04	0.349	0.667	0.000679	0.179	C
51	D-8	Exposure	is	2.666	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.666	3.18747	0.99988956	0.999456	3.2254E-04	0.342	0.667	0.000666	0.176	C
52	G-3	Exposure	is	2.658	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.658	3.177905	0.99988989	0.999456	3.2254E-04	0.341	0.667	0.000664	0.175	C
53	G-8	Exposure	is	2.708	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.708	3.237685	0.99988782	0.999456	3.2254E-04	0.348	0.667	0.000676	0.178	C
54	D-3	Exposure	is	2.703	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.703	3.231707	0.99988803	0.999456	3.2254E-04	0.347	0.667	0.000675	0.178	C
55	C-7	Exposure	is	2.584	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.584	3.089431	0.99989296	0.999456	3.2254E-04	0.332	0.667	0.000645	0.170	C
56	H-4	Exposure	is	2.611	GWD	(100 ppm Nb concentration - max is 150 ppm)	Location - Storage Well	2.611	3.121712	0.99989184	0.999456	3.2254E-04	0.335	0.667	0.000652	0.172	C

Table 8

LACBWR Volume and Flux Estimates For Activation

Reactor Component	Activated Material Volume (cm^3)	Applicable neutron flux (n/cm^2-sec)
Core Vertical Posts (52)	179,517	1.5×10^{13}
Core Lateral Support Structure	41,055	5×10^{12}
Steam Separators (16)	109,716	5×10^{12}
Thermal Shield	665,218	1×10^{11}
Horizontal Grid Bars (7)	780	5×10^{11}
In-core Monitor Guide Tubes (9)	730	1.5×10^{13}
Reactor Pressure Vessel		
Cladding	102,251	5×10^{10}
Vessel	2.17×10^{6}	1×10^{9}
Fuel Shrouds (72 Zr, 8 SS)		
Zr	261,130	1.5×10^{13}
SS	27,646	5×10^{12}
Core Support Structure		
Upper Grid	316,456	5×10^{11}
Control Rod Guide Tubes	38,854	1×10^{11}
Control Rods		
SS	17,732	1.5×10^{13}
Inconel-600	3,853	1.5×10^{13}

Volumes of RPV, internals and subcomponents were reduced by the ratio of incident flux (Final Safety Analysis Report) to core average thermal flux to calculate irradiated quantities of Fe, Co and Ni.

Table 9

LACBWR RPV, Internals and Subconponents Surface Area For Surface Coating Analysis

Component Description	Surface Area (ft^2)
Reactor Vessel ID (not including RPV Head)	885.86
Horizontal Grid Bars	3.61
Steam Dryers	400.00
Thermal Shield	737.84
Core Support Structure	29.84
Plenum Separator Plate	203.28
Steam Separators	1844.00
Thermal Shock Shield	419.93
Steam Dryer Support Skirt	205.94
Steam Dryer Closure Plate	27.09
Core Spray Bundle	851.15
Flow Deflector Plate	85.66
Control Rod Guides	1283.33
Shroud Cans	2717.40
Core Vertical Posts	369.24
Core Lateral Support Structure	91.15
Upper Grid Plate	34.37
Peripheral Shroud	67.55
Control Rods	928.00
Lower Grid Plate	89.60
Total Surface Area (ft^2):	11274.84
Total Surface Area (m^2):	1047.47

Surface areas were provided by DPC and part of the surface area calculations contained in the decommissioning file.

Table 10

LACBWR Surface Coating Results as of January 2003

Nuclide	Surface Coating Total Curies	Activity*	
		Ci/m^3	nCi/g
Co-57	5.22×10^{-6}	3.97×10^{-7}	4.96×10^{-5}
Co-60	1.36×10^{-1}	1.04×10^{-2}	1.30×10^{0}
Cs-137	3.28×10^{-4}	2.49×10^{-5}	3.12×10^{-3}
Am-241**	4.58×10^{-4}	3.48×10^{-5}	4.35×10^{-3}
H-3	1.07×10^{-5}	8.14×10^{-7}	1.02×10^{-4}
C-14	1.82×10^{-5}	1.38×10^{-6}	1.73×10^{-4}
Ni-59	6.87×10^{-4}	5.22×10^{-5}	6.53×10^{-3}
Ni-63	7.27×10^{-2}	5.52×10^{-3}	6.90×10^{-1}
Sr-90	8.10×10^{-5}	6.16×10^{-6}	7.70×10^{-4}
U-233/234**	2.51×10^{-7}	1.91×10^{-8}	2.38×10^{-6}
U-238**	1.11×10^{-7}	8.40×10^{-9}	1.05×10^{-6}
Pu-238**	1.90×10^{-4}	1.44×10^{-5}	1.81×10^{-3}
Pu-239/240**	1.23×10^{-4}	9.37×10^{-6}	1.17×10^{-3}
Pu-241	4.68×10^{-3}	3.56×10^{-4}	4.45×10^{-2}
Cm-242	2.96×10^{-8}	2.25×10^{-9}	2.81×10^{-7}
Cm-243/244**	7.16×10^{-5}	5.44×10^{-6}	6.80×10^{-4}
Fe-55	4.37×10^{-2}	3.32×10^{-3}	4.15×10^{-1}

* - The decay of activity levels were adjusted to January 2003 from April 1, 2002.
** - These isotopes are combined under the > 5 yr half-life alpha emitting transuranics category in the Barnwell Waste Classification Determination Table (Table 12)

Table 11

LACBWR Volume Estimates For Averaging Waste

Component Description	Volume (m^3)
RPV (clad and wall)	9.61
Thermal Shield	1.41
Core Support Skirt	0.36
Core Lateral Support Structure	0.04
Thermal Shock Shield	0.23
Steam Separators	0.11
Plenum Separator Plate	0.04
Bottom Grid Assembly	0.55
Control Rod Guide Tubes	0.04
Vertical Posts	0.18
Shrouds	0.24
Control Rods	0.35
Total:	13.16

Table 12

Barnwell Waste Classification Determination For The RPV as of January 2003 (Based on the ORIGEN-ARP)

Radionuclide	LACBWR Total Curies (January 2003) in RPV, internals and subcomponents	LACBWR Concentration in RPV, internals and subcomponents (Curies/m^3)	Barnwell Waste Acceptance Criteria		LACBWR Concentration Relative to the Waste Acceptance Classification Limit
			Concentration (Curies/m^3)	Classification	
Fe-55	1235	93.8	≤ 700	A	0.134
Co-60	4778	363.1	≤ 700	A	0.519
Ni-59	14	1.1	≤ 22	A	0.048
C-14	1.82×10^{-5}	1.38×10^{-6}	≤ 0.8	A	0.00
C-14 in metal	4.61	0.35	≤ 8	A	0.044
H-3	1.07×10^{-5}	8.14×10^{-7}	≤ 40	A	0.002
Ni-63	7.27×10^{-2}	5.52×10^{-3}	≤ 3.5	A	0.000
Sr-90	8.10×10^{-5}	6.16×10^{-6}	≤ 0.04	A	0.000
Cs-137	3.28×10^{-4}	2.49×10^{-5}	≤ 1	A	0.000
> 5 yr half-life alpha emitting transuranics	8.44×10^{-4}	8.01×10^{-3} in nCi/g	≤ 10 in nCi/g	A	0.000
Pu-241	4.68×10^{-3}	4.44×10^{-2} in nCi/g	≤ 350 in nCi/g	A	0.000
Cm-242	2.96×10^{-8}	2.81×10^{-7} in nCi/g	≤ 2000 in nCi/g	A	0.000
Total Fractional Sum of Class A Waste :					0.747
Ni-63 in metal	2098	159.4	≤ 700	B	0.228
Nb-94	0.56	0.042	≤ 0.2	C	.213

Figure 1

Typical ORIGEN-ARP Output Curve

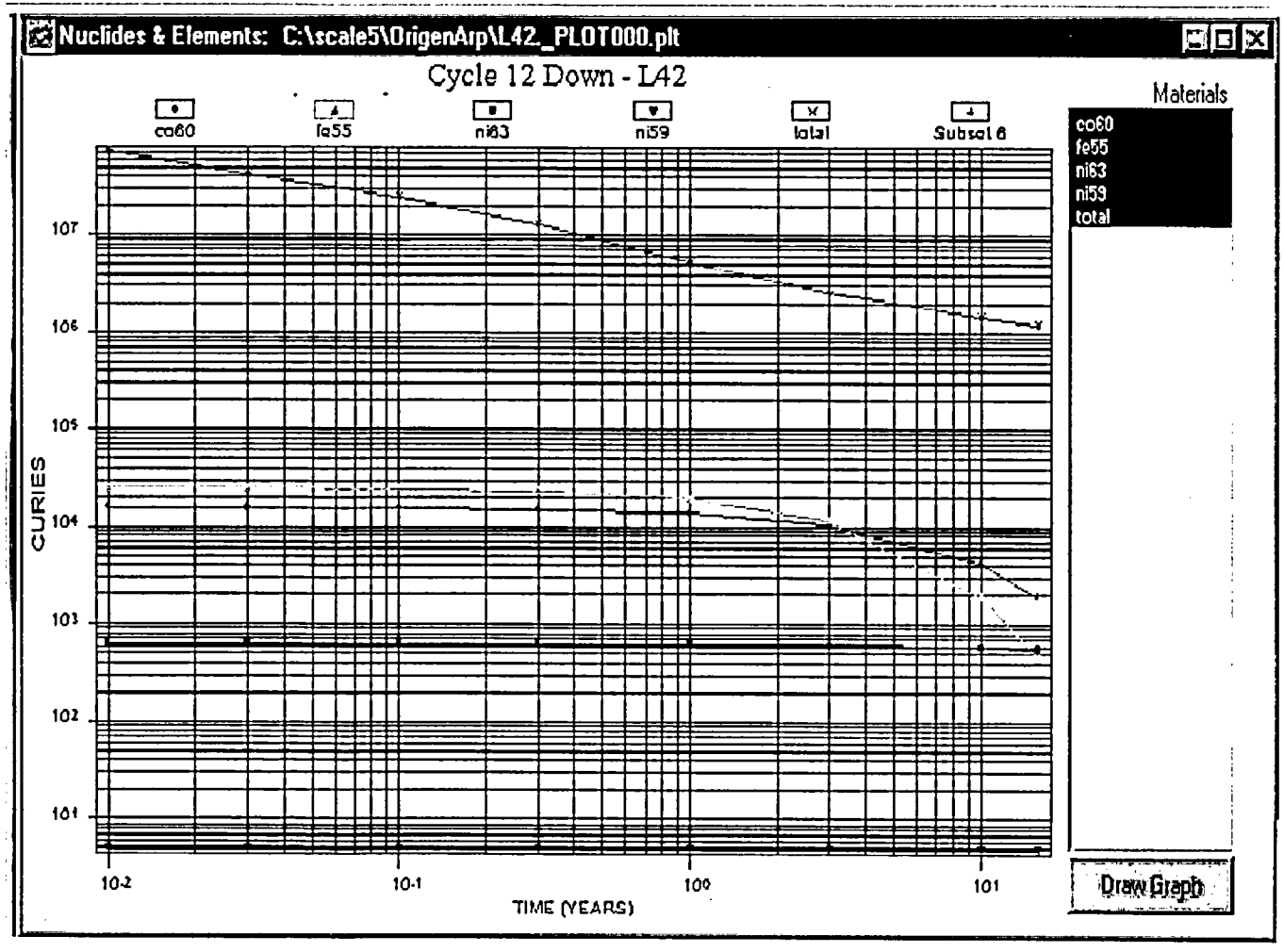

Figure 2
LACBWR 10CFR61 Radiological Analysis Results

10 CFR 61 RADIOLOGICAL ANALYSIS RESULTS

Plant: LACBWR

Sample ID: 00-02

Sample Type: Smears

Thermo RETEC

Reference Date: 03/02/00

Order #: RO-03-079

Sample Receipt Date: 03/02/00

PO #: 1010

Plant Sample ID: Shutdown Condenser

Decay Corrected to April 1, 2002

MEASURED CONCENTRATION µCi/Sample			
Nuclide	µCi/Sample	2 sigma Error %	% of Total
Co-57	6.57 E-5	53	2.6 E-3
Co-60	1.37	5	54.34
Cs-137	1.98 E-3	61	0.08
Am-241	3.81 E-3	15	0.15
H-3	9.12 E-5	17	3.61 E-3
C-14	1.58 E-4	10	0.01
Ni-59	5.86 E-3	12	0.23
Ni-63	6.34 E-1	10	25.12
Sr-90	7.16 E-4	10	0.03
U-233/234	1.70 E-6	41	6.70 E-5
U-238	6.36 E-7	66	2.5 E-5
Pu-238	1.69 E-3	8	0.07
Pu-239/240	1.09 E-3	8	0.04
Pu-241	4.33 E-2	7	1.72
Cm-242	7.71 E-7	18	3.1 E-5
Cm-243/244	6.21 E-4	12	0.02
Fe-55	4.59 E-1	10	18.19

References

1. La Crosse Safeguards Report for Operating Authorization, August 1967
2. La Crosse Final Safety Analysis Report, Vol.1&2, July 1985
3. La Crosse Boiling Water Reactor – Reactor Core Internals spreadsheet dated 8/14/20020
4. Teledyne Report Analysis (control rod # 7), September 4, 1986 and supporting/related information
5. Fuel Shroud CMTRs, drawings and Exposure Histories
6. Data provided by S. Raffety, Ph.D
7. South Carolina Department of Health and Environmental Control, Radioactive Waste Classification Tables, South Carolina Code of Regulations Chapter 61, Current through State Register Volume 25, Issue 9, effective September 28, 2001
8. 10CFR61
9. NUREG/CR 6567 Low-Level Radioactive Waste Classification, Characterization, and Assessment: Waste Streams and Neutron-Activated Metals, August 2000

Appendix 1
Typical ORIGEN-ARP Data Input for LACBWR Run

```
'This SCALE input file was generated by
'OrigenArp Version  2.00   2-12-2002
=arp
8x8
3.7
12
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
118.5866
10.33
10.33
10.33
10.33
10.33
10.33
10.33
10.33
10.33
10.33
10.33
10.33
1
1
1
```

```
1
1
1
1
1
1
1
1
1
0.4323
ft33f001
end
#origens
0$$ a4 33 a11 71 e t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 1 27 a16 2 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 0 a13 7 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 1 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
 88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
 94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e
73$$ 922340 922350 922360 922380 270000 260000 280000
74** 2831.98 318200 1463.72 8277504 400 203079 25742
75$$ 2 2 2 2 4 4 4
t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
```

61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 2 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 2 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 3 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e

57** 0 a3 1e-05 0.08333333 e t

Cycle 3 -L42

8.6 MTU

58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838

60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866

66$$ a1 2 a5 2 a9 2 e t

54$$ a8 1 a11 0 e

56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e

57** 0 a3 1e-05 e t

Decay - L42

8.6 MTU

60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543

61** f0.05

65$$

'Gram-Atoms Grams Curies Watts-All Watts-Gamma

3z 1 0 0 3z 3z 3z 6z

3z 1 0 0 3z 3z 3z 6z

3z 1 0 0 3z 3z 3z 6z

t

8x8 library, interpolated to 3.700000 wt% -- ft33f001

3$$ 33 a3 4 27 a33 18 e t

35$$ 0 t

56$$ 10 10 a10 9 a15 3 a18 1 e

57** 0 a3 1e-05 0.08333333 e t

Cycle 4 -L42

8.6 MTU

58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838

60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866

66$$ a1 2 a5 2 a9 2 e t

54$$ a8 1 a11 0 e

56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e

57** 0 a3 1e-05 e t

```
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 5 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 5 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
 88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
 94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
```

3$$ 33 a3 6 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 6 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 7 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 7 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t

54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 8 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 8 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z

3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 9 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 9 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 10 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 10 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838

60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 11 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 11 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e t
Decay - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 30 97.02543
61** f0.05
65$$

'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
t
8x8 library, interpolated to 3.700000 wt% -- ft33f001
3$$ 33 a3 12 27 a33 18 e t
35$$ 0 t
56$$ 10 10 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.08333333 e t
Cycle 12 -L42
8.6 MTU
58** 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838 88.838
88.838
60** 11.85866 23.71733 35.57599 47.43466 59.29332 71.15198 83.01065
94.86931 106.728 118.5866
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 8 a6 1 a10 10 a14 5 a15 3 a17 2 e
57** 0 a3 1e-05 e t
Cycle 12 Down - L42
8.6 MTU
60** 0.01 0.03 0.1 0.3 1 3 10 15.7
61** f0.05
65$$
'Gram-Atoms Grams Curies Watts-All Watts-Gamma
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
3z 1 0 0 3z 3z 3z 6z
81$$ 2 0 26 1 a7 200 e
82$$ 2 2 2 2 2 2 2 e
83**
1.E+7 8.E+6 6.5E+6 5.E+6 4.E+6 3.E+6
2.5E+6 2.E+6 1.66E+6 1.33E+6 1.E+6 8.E+5
6.E+5 4.E+5 3.E+5 2.E+5 1.E+5 5.E+4
1.E+4 e

```
84**
 2.E+7      6.434E+6    3.E+6       1.85E+6     1.4E+6
 9.E+5      4.E+5       1.E+5       1.7E+4      3.E+3       5.5E+2
 1.E+2      3.E+1       1.E+1       3.04999E+0  1.77E+0
 1.29999E+0  1.12999E+0  1.E+0       8.E-1       4.E-1
 3.25E-1     2.25E-1     9.999985E-2  5.E-2      3.E-2
 9.999998E-3  1.E-5 e
 t
Cycle 12 Down - L42 Time Step 1
Cycle 12 Down - L42 Time Step 2
Cycle 12 Down - L42 Time Step 3
Cycle 12 Down - L42 Time Step 4
Cycle 12 Down - L42 Time Step 5
Cycle 12 Down - L42 Time Step 6
Cycle 12 Down - L42 Time Step 7
Cycle 12 Down - L42 Time Step 8
56$$ 0 0 a10  1 e t
56$$ 0 0 a10  2 e t
56$$ 0 0 a10  3 e t
56$$ 0 0 a10  4 e t
56$$ 0 0 a10  5 e t
56$$ 0 0 a10  6 e t
56$$ 0 0 a10  7 e t
56$$ 0 0 a10  8 e t
56$$ f0 t
end
=opus
TYPARAMS=NUCLIDES
UNITS=CURIES
SYMNUC=Co-60 Fe-55 Ni-59 Ni-63 end
NRANK=4
LIBTYPE=ALL
TIME=YEARS
NPOSITION=1 2 3 4 5 6 7 8 end
end
#shell
```

```
copy ft71f001 C:\windows\Desktop\L42.f71
del ft71f001
end
```

Appendix 2
ORIGEN-ARP Input Data for Standard BWR Test Run

```
'This SCALE input file was generated by
'OrigenArp Version  2.00   2-12-2002
=arp
8x8
2.5
5
807
306
164
317
348
12.760252
24.227129
18.212408
5.8780231
7.9915878
1
1
1
1
1
0.4323
ft33f001
end
#origens
0$$ a4 33 a11 71 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3$$ 33 a3 1 0 a16 2 a33 0 e t
35$$ 0 t
56$$ 10 10 a6 3 a10 0 a13 15 a15 3 a18 1 e
57** 0 a3 1e-05 0.415551 e t
case 1
fuel assembly (.1902 mtu)
58** 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 0
60** 100 200 300 400 500 600 700 753 807 866
66$$ a1 2 a5 2 a9 2 e
73$$ 922340 922350 922360 922380 10000 50000 80000 240000 250000 260000
 270000 280000 400000 500000 640000
74** 42 4755 23 185380 3100 13 50500 450 29 1200 5 450 98200 1600 544
75$$ 2 2 2 2 4 4 4 4 4 4 4 4 4 4 4
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3$$ 33 a3 2 0 a33 0 e t
35$$ 0 t
56$$ 10 10 a6 3 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1575695 e t
case 2
fuel assembly (.1902 mtu)
58** 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 0
60** 30.6 61.2 91.8 122.4 153 183.6 214.2 244.8 306 337
66$$ a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3$$ 33 a3 3 0 a33 0 e t
```

```
35$$ 0 t
56$$ 10 10 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.08444902 e t
case 3
fuel assembly (.1902 mtu)
58** 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464
60** 16.4 32.8 49.2 65.6 82 98.4 114.8 131.2 147.6 164
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 4
fuel assembly (.1902 mtu)
60** 0.1 0.3 1 3 10 30 100 300 799
61** f0.5
65$$
'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
 3z   1   0   0   3z   3z   3z   6z
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3$$ 33 a3 4 0 a33 0 e t
35$$ 0 t
56$$ 10 10 a6 3 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.1632338 e t
case 5
fuel assembly (.1902 mtu)
58** 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 0
60** 31.7 63.4 95.1 126.8 158.5 190.2 221.9 253.6 317 365
66$$ a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3$$ 33 a3 5 0 a33 0 e t
35$$ 0 t
56$$ 10 10 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1791967 e t
case 6
fuel assembly (.1902 mtu)
58** 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52
60** 34.8 69.6 104.4 139.2 174 208.8 243.6 278.4 313.2 348
66$$ a1 2 a5 2 a9 2 e t
54$$ a8 1 a11 0 e
56$$ a2 9 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 7
fuel assembly (.1902 mtu)
60** 50 150 400 857 871 886 892 899 946
61** f0.5
65$$
'Gram-Atoms   Grams   Curies   Watts-All   Watts-Gamma
 3z   3z   3z   1   0   0   3z   6z
 3z   3z   3z   1   0   0   3z   6z

 3z   3z   3z   1   0   0   3z   6z
t
56$$ f0 t
end
```

Appendix 3
ORIGEN-ARP Output Comparison for Standard BWR Test Run

```
primary module access and input record ( scale driver - 97/12/29 - 04:04:44 )

 the following data cards precede an = card
   'This SCALE input file was generated by
   'OrigenArp Version  2.00   2-12-2002
  module arp      will be called
   8x8
   2.5
   5
   807
   306
   164
   317
   348
   12.760252
   24.227129
   18.212408
   5.8780231
   7.9915878
   1
   1
   1
   1
   1
   0.4323
   ft33f001

  module arp      is finished. completion code     0. cpu time used     0.55 (seconds).
  module origens  will be called
   0SS a4 33 a11 71 e t
   8x8 library, interpolated to 2.500000 wt% -- ft33f001
   3SS 33 a3 1 0 a16 2 a33 0 e t
   35SS 0 t
   56SS 10 10 a6 3 a10 0 a13 15 a15 3 a18 1 e
```

```
57** 0 a3 1e-05 0.415551 e t
case 1
fuel assembly (.1902 mtu)
58** 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 0
60** 100 200 300 400 500 600 700 753 807 866
66SS a1 2 a5 2 a9 2 e
73SS 922340 922350 922360 922380 10000 50000 80000 240000 250000 260000
 270000 280000 400000 500000 640000
74** 42 4755 23 185380 3100 13 50500 450 29 1200 5 450 98200 1600 544
75SS 2 2 2 2 4 4 4 4 4 4 4 4 4 4 4
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 2 0 a33 0 e t
35SS 0 t
56SS 10 10 a6 3 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1575695 e t
case 2
fuel assembly (.1902 mtu)
58** 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 0
60** 30.6 61.2 91.8 122.4 153 183.6 214.2 244.8 306 337
66SS a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 3 0 a33 0 e t
35SS 0 t
56SS 10 10 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.08444902 e t
case 3
fuel assembly (.1902 mtu)
58** 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464
60** 16.4 32.8 49.2 65.6 82 98.4 114.8 131.2 147.6 164
66SS a1 2 a5 2 a9 2 e t
54SS a8 1 a11 0 e
56SS a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 4
fuel assembly (.1902 mtu)
60** 0.1 0.3 1 3 10 30 100 300 799
61** f0.5
```

```
65SS
'Gram-Atoms  Grams  Curies  Watts-All  Watts-Gamma
 3z  1  0  0  3z  3z  3z  6z
 3z  1  0  0  3z  3z  3z  6z
 3z  1  0  0  3z  3z  3z  6z
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 4 0 a33 0 e t
35SS 0 t
56SS 10 10 a6 3 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.1632338 e t
case 5
fuel assembly (.1902 mtu)
58** 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 0
60** 31.7 63.4 95.1 126.8 158.5 190.2 221.9 253.6 317 365
66SS a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 5 0 a33 0 e t
35SS 0 t
56SS 10 10 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1791967 e t
case 6
fuel assembly (.1902 mtu)
58** 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52
60** 34.8 69.6 104.4 139.2 174 208.8 243.6 278.4 313.2 348
66SS a1 2 a5 2 a9 2 e t
54SS a8 1 a11 0 e
56SS a2 9 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 7
fuel assembly (.1902 mtu)
60** 50 150 400 857 871 886 892 899 946
61** f0.5
65SS
'Gram-Atoms  Grams  Curies  Watts-All  Watts-Gamma
 3z  3z  3z  1  0  0  3z  6z
 3z  3z  3z  1  0  0  3z  6z
 3z  3z  3z  1  0  0  3z  6z
```

```
t
56SS f0 t

module origens is finished. completion code    0. cpu time used    4.67 (seconds).
*****************************************************************************************************************
******
*****************************************************************************************************************
******
*****************************************************************************************************************
******
    *****                                                                    *****
    *****                          program verification information          *****
    *****                                                                    *****
    *****                       code system:  origen   version:  arp         *****
    *****                                                                    *****

*****************************************************************************************************************
******
*****************************************************************************************************************
******
    *****                                                                    *****
    *****                                                                    *****
    *****          program:  arp                                             *****
    *****                                                                    *****
    *****     creation date:  02-13-02                                       *****
    *****                                                                    *****
    *****          library:  C:\scale5\bin                                   *****
    *****                                                                    *****
    *****                                                                    *****
    *****    production code:  arp                                           *****
    *****                                                                    *****
    *****         revision:  4.4.1                                           *****
    *****                                                                    *****
    *****         jobname:  scale-pc                                         *****
    *****                                                                    *****
    *****      machine name:  RRANELLONE                                     *****
    *****                                                                    *****
    *****   date of execution:  19_sep_2002                                  *****
```

```
    *****                                                    *****
    *****   time of execution:  16:45:11.87                  *****
    *****                                                    *****
    *****                                                    *****
**********************************************************************************************************
******
**********************************************************************************************************
******
**********************************************************************************************************
******
cross section library interpolation has begun...

assembly type: 8x8

enrichment:    2.50000

number of cycles:        5

fuel irradiation period for each cycle:    807.000      306.000      164.000      317.000      348.000

average power for each cycle:    12.7603      24.2271      18.2124      5.87802      7.99159

number of libraries made per cycle:        1        1        1        1        1

water density (g/cm**3):    0.432300

interpolated library name: ft33f001

cross section library interpolation completed.
cpu time used     0.38 seconds.

**********************************************************************************************************
******
**********************************************************************************************************
******

**********************************************************************************************************
    *****                                                    *****
```

```
*****                    program verification information                    *****
*****                                                                          *****
*****                  code system:  origen   version:  arp                   *****
*****                                                                          *****

*****************************************************************************************************************
******
*****************************************************************************************************************
******
*****                                                                          *****
*****                                                                          *****
*****          program:  origen                                                *****
*****                                                                          *****
*****     creation date:  04-29-02                                             *****
*****                                                                          *****
*****          library:  C:\scale5\bin                                         *****
*****                                                                          *****
*****                                                                          *****
*****    production code:  origens                                             *****
*****                                                                          *****
*****         revision:  4.4.2                                                 *****
*****                                                                          *****
*****          jobname:  scale-pc                                              *****
*****                                                                          *****
*****      machine name:  RRANELLONE                                           *****
*****                                                                          *****
*****   date of execution:  19_sep_2002                                        *****
*****                                                                          *****
*****   time of execution:  16:45:12.47                                        *****
*****                                                                          *****
*****                                                                          *****
*****************************************************************************************************************
******
*****************************************************************************************************************
******
*****************************************************************************************************************
******
```

```
* input echo * (with break between col. 1-72 and 73-80)

note:  only comments are permitted after column 72.

--------------------only this is used as input data.--------------------        comment or title end

.............................columns 1-72.............................          ..73-80.

0SS a4 33 a11 71 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 1 0 a16 2 a33 0 e t
35SS 0 t
56SS 10 10 a6 3 a10 0 a13 15 a15 3 a18 1 e
57** 0 a3 1e-05 0.415551 e t
case 1
fuel assembly (.1902 mtu)
58** 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 2.427 0
60** 100 200 300 400 500 600 700 753 807 866
66SS a1 2 a5 2 a9 2 e
73SS 922340 922350 922360 922380 10000 50000 80000 240000 250000 260000
 270000 280000 400000 500000 640000
74** 42 4755 23 185380 3100 13 50500 450 29 1200 5 450 98200 1600 544
75SS 2 2 2 2 4 4 4 4 4 4 4 4 4 4 4
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 2 0 a33 0 e t
35SS 0 t
56SS 10 10 a6 3 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1575695 e t
case 2
fuel assembly (.1902 mtu)
58** 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 4.608 0
60** 30.6 61.2 91.8 122.4 153 183.6 214.2 244.8 306 337
66SS a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 3 0 a33 0 e t
35SS 0 t
56SS 10 10 a10 10 a15 3 a18 1 e
```

```
57** 0 a3 1e-05 0.08444902 e t
case 3
fuel assembly (.1902 mtu)
58** 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464 3.464
60** 16.4 32.8 49.2 65.6 82 98.4 114.8 131.2 147.6 164
66SS a1 2 a5 2 a9 2 e t
54SS a8 1 a11 0 e
56SS a2 9 a6 3 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 4
fuel assembly (.1902 mtu)
60** 0.1 0.3 1 3 10 30 100 300 799
61** f0.5
65SS
'Gram-Atoms  Grams  Curies  Watts-All  Watts-Gamma
 3z  1  0  0  3z  3z  3z  6z
 3z  1  0  0  3z  3z  3z  6z
 3z  1  0  0  3z  3z  3z  6z
t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 4 0 a33 0 e t
35SS 0 t
56SS 10 10 a6 3 a10 9 a15 3 a18 1 e
57** 0 a3 1e-05 0.1632338 e t
case 5
fuel assembly (.1902 mtu)
58** 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 1.118 0
60** 31.7 63.4 95.1 126.8 158.5 190.2 221.9 253.6 317 365
66SS a1 2 a5 2 a9 2 e t
8x8 library, interpolated to 2.500000 wt% -- ft33f001
3SS 33 a3 5 0 a33 0 e t
35SS 0 t
56SS 10 10 a10 10 a15 3 a18 1 e
57** 0 a3 1e-05 0.1791967 e t
case 6
fuel assembly (.1902 mtu)
58** 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52 1.52
60** 34.8 69.6 104.4 139.2 174 208.8 243.6 278.4 313.2 348
```

```
66SS a1 2 a5 2 a9 2 e t
54SS a8 1 a11 0 e
56SS a2 9 a10 10 a15 3 a17 4 e
57** 0 a3 1e-05 e  t
case 7
fuel assembly (.1902 mtu)
60** 50 150 400 857 871 886 892 899 946
61** f0.5
65SS
'Gram-Atoms  Grams  Curies  Watts-All  Watts-Gamma
 3z  3z  3z  1  0  0  3z  6z
 3z  3z  3z  1  0  0  3z  6z
 3z  3z  3z  1  0  0  3z  6z
t
56SS f0 t

when job "fails", make sure no fido input.....................................is out here!

library information...

    cross-section data taken from position number  1 of library on unit 33.

    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    ********************************************************************************
    *                                                                              *
```

```
*        prelim lwr origen-s binary working library--id = 1143          *
*      made from modified card-image origen-s libraries of scale 4.2      *
*    data from the light element, actinide, and fission product libraries   *
*     decay data, including gamma and total energy, are from endf/b-vi     *
*                                                                          *
*    neutron flux spectrum factors and cross sections were produced from    *
*   the "presas2" case updating all nuclides on the scale "burnup" library  *
*                                                                          *
*            fission product yields are from endf/b-v                      *
*                                                                          *
*         photon libraries use an 18-energy-group structure                *
*        the photon data are from the master photon data base,              *
*         produced to include bremsstrahlung from uo2 matrix                *
*                                                                          *
*     see information above this box (if present) for later updates        *
*                                                                          *
****************************************************************************
****************************************************************************

      .other identification and sizes of library.

       data set name:  C:\scale5\tmpdir\ft33f001

      8/15/ 94    date library was produced

         1697   total number of nuclides in library
          689   number of light-element nuclides
          129   number of actinide nuclides
          879   number of fission product nuclides

         8025   number of nonzero off-diagonal matrix elements

****************************************************************************

case 1                                                  light elements      page   1
power=  2.43mw, burnup=   1959.mwd, flux= 1.78E+13n/cm**2-sec

                        nuclide concentrations, grams
```

basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
h 1	3.099E+03	3.099E+03	3.099E+03	3.099E+03	3.099E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03
h 2	9.299E-01	1.178E+00	1.429E+00	1.679E+00	1.927E+00	2.175E+00	2.423E+00	2.672E+00	2.805E+00	2.940E+00
h 3	0.000E+00	7.716E-08	1.723E-07	2.843E-07	4.131E-07	5.592E-07	7.229E-07	9.048E-07	1.009E-06	1.120E-06
h 4	0.000E+00	7.259E-27	1.639E-26	2.687E-26	3.888E-26	5.256E-26	6.804E-26	8.543E-26	9.554E-26	1.064E-25
he 3	0.000E+00	5.111E-10	1.877E-09	3.982E-09	6.752E-09	1.014E-08	1.410E-08	1.862E-08	2.124E-08	2.406E-08
he 4	0.000E+00	4.019E-01	6.742E-01	8.608E-01	9.944E-01	1.095E+00	1.175E+00	1.243E+00	1.275E+00	1.306E+00
he 6	0.000E+00	1.951E-16	3.226E-16	3.981E-16	4.447E-16	4.746E-16	4.944E-16	5.082E-16	5.143E-16	5.194E-16
li 6	0.000E+00	4.653E-09	1.591E-08	3.056E-08	4.671E-08	6.329E-08	7.968E-08	9.553E-08	1.036E-07	1.117E-07
li 7	0.000E+00	6.243E-01	1.021E+00	1.268E+00	1.423E+00	1.520E+00	1.581E+00	1.620E+00	1.634E+00	1.646E+00
li 8	0.000E+00	3.266E-13	5.281E-13	6.472E-13	7.207E-13	7.678E-13	7.991E-13	8.209E-13	8.306E-13	8.388E-13
be 8	0.000E+00	7.795E-19	1.260E-18	1.545E-18	1.720E-18	1.832E-18	1.907E-18	1.959E-18	1.982E-18	2.002E-18
be 9	0.000E+00	5.473E-07	8.991E-07	1.123E-06	1.267E-06	1.362E-06	1.426E-06	1.470E-06	1.489E-06	1.505E-06
be 10	0.000E+00	4.854E-06	8.061E-06	1.022E-05	1.178E-05	1.299E-05	1.404E-05	1.501E-05	1.552E-05	1.605E-05
be 11	0.000E+00	3.619E-15	3.660E-15	3.637E-15	3.622E-15	3.618E-15	3.623E-15	3.635E-15	3.647E-15	3.657E-15
b 10	2.407E+00	1.516E+00	9.492E-01	5.963E-01	3.753E-01	2.364E-01	1.488E-01	9.351E-02	7.304E-02	5.675E-02
b 11	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01
b 12	0.000E+00	2.138E-14	2.162E-14	2.148E-14	2.139E-14	2.137E-14	2.139E-14	2.146E-14	2.153E-14	2.160E-14
c 12	0.000E+00	6.339E-06	1.275E-05	1.912E-05	2.546E-05	3.180E-05	3.814E-05	4.450E-05	4.789E-05	5.134E-05
c 13	0.000E+00	1.453E-01	2.923E-01	4.383E-01	5.837E-01	7.290E-01	8.744E-01	1.020E+00	1.098E+00	1.177E+00
c 14	0.000E+00	3.616E-04	7.273E-04	1.091E-03	1.452E-03	1.814E-03	2.176E-03	2.539E-03	2.732E-03	2.929E-03
c 15	0.000E+00	2.110E-11	2.134E-11	2.120E-11	2.111E-11	2.109E-11	2.112E-11	2.119E-11	2.125E-11	2.132E-11
n 13	0.000E+00	2.162E-22	8.770E-22	1.963E-21	3.475E-21	5.422E-21	7.814E-21	1.067E-20	1.238E-20	1.426E-20
n 14	0.000E+00	5.988E-09	2.402E-08	5.412E-08	9.621E-08	1.503E-07	2.163E-07	2.943E-07	3.405E-07	3.911E-07
n 15	0.000E+00	1.371E-04	2.758E-04	4.135E-04	5.507E-04	6.877E-04	8.249E-04	9.625E-04	1.036E-03	1.110E-03
n 16	0.000E+00	5.314E-10	5.374E-10	5.340E-10	5.316E-10	5.310E-10	5.317E-10	5.335E-10	5.352E-10	5.367E-10
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04
o 17	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01
o 18	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02
o 19	0.000E+00	2.698E-11	2.728E-11	2.711E-11	2.699E-11	2.696E-11	2.700E-11	2.708E-11	2.717E-11	2.725E-11
f 19	0.000E+00	6.005E-06	1.208E-05	1.811E-05	2.412E-05	3.012E-05	3.612E-05	4.215E-05	4.536E-05	4.863E-05
f 20	0.000E+00	1.468E-17	2.985E-17	4.447E-17	5.897E-17	7.355E-17	8.834E-17	1.034E-16	1.116E-16	1.201E-16
ti 46	0.000E+00	7.512E-22	4.150E-20	4.067E-19	1.973E-18	6.544E-18	1.713E-17	3.816E-17	5.555E-17	7.915E-17
ti 47	0.000E+00	4.090E-06	8.219E-06	1.232E-05	1.639E-05	2.045E-05	2.450E-05	2.857E-05	3.073E-05	3.293E-05
ti 48	0.000E+00	4.860E-10	2.058E-09	4.727E-09	8.481E-09	1.332E-08	1.925E-08	2.629E-08	3.048E-08	3.508E-08
ti 49	0.000E+00	9.273E-06	1.865E-05	2.796E-05	3.723E-05	4.648E-05	5.575E-05	6.504E-05	6.998E-05	7.502E-05
ti 50	0.000E+00	4.389E-05	8.823E-05	1.322E-04	1.760E-04	2.197E-04	2.634E-04	3.072E-04	3.305E-04	3.543E-04

ti 51	0.000E+00	1.028E-11	1.103E-11	1.159E-11	1.217E-11	1.279E-11	1.343E-11	1.411E-11	1.449E-11	1.488E-11	0.000E+00
v 49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
v 50	0.000E+00	1.690E-04	3.383E-04	5.049E-04	6.692E-04	8.317E-04	9.929E-04	1.153E-03	1.238E-03	1.324E-03	1.324E-03
v 51	0.000E+00	1.800E-02	4.573E-02	7.418E-02	1.025E-01	1.307E-01	1.589E-01	1.871E-01	2.020E-01	2.173E-01	2.260E-01
v 52	0.000E+00	4.464E-09	5.111E-09	5.687E-09	6.266E-09	6.859E-09	7.468E-09	8.095E-09	8.441E-09	8.794E-09	0.000E+00
v 53	0.000E+00	2.480E-11	2.505E-11	2.487E-11	2.474E-11	2.468E-11	2.469E-11	2.475E-11	2.482E-11	2.488E-11	0.000E+00
v 54	0.000E+00	1.315E-13	1.339E-13	1.339E-13	1.342E-13	1.350E-13	1.360E-13	1.374E-13	1.383E-13	1.392E-13	0.000E+00
cr 50	1.880E+01	1.877E+01	1.875E+01	1.872E+01	1.869E+01	1.866E+01	1.863E+01	1.861E+01	1.859E+01	1.858E+01	1.858E+01
cr 51	0.000E+00	1.043E-02	1.139E-02	1.138E-02	1.132E-02	1.129E-02	1.128E-02	1.130E-02	1.132E-02	1.134E-02	2.593E-03
cr 52	3.767E+02	3.766E+02	3.766E+02	3.766E+02	3.765E+02	3.765E+02	3.765E+02	3.764E+02	3.764E+02	3.764E+02	3.764E+02
cr 53	4.353E+01	4.348E+01	4.344E+01	4.340E+01	4.336E+01	4.331E+01	4.327E+01	4.323E+01	4.321E+01	4.318E+01	4.318E+01
cr 54	1.102E+01	1.109E+01	1.117E+01	1.124E+01	1.132E+01	1.140E+01	1.147E+01	1.155E+01	1.159E+01	1.163E+01	1.163E+01
cr 55	0.000E+00	1.381E-08	1.405E-08	1.406E-08	1.409E-08	1.416E-08	1.427E-08	1.441E-08	1.450E-08	1.460E-08	0.000E+00
mn 54	0.000E+00	1.425E-03	2.581E-03	3.497E-03	4.223E-03	4.802E-03	5.267E-03	5.644E-03	5.814E-03	5.970E-03	5.237E-03

case 1 light elements page 2
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
mn 55	2.900E+01	2.895E+01	2.890E+01	2.885E+01	2.880E+01	2.876E+01	2.871E+01	2.866E+01	2.864E+01	2.862E+01	2.862E+01
mn 56	0.000E+00	8.173E-05	8.251E-05	8.184E-05	8.135E-05	8.113E-05	8.110E-05	8.124E-05	8.144E-05	8.161E-05	0.000E+00
mn 57	0.000E+00	5.540E-11	5.661E-11	5.682E-11	5.715E-11	5.766E-11	5.831E-11	5.908E-11	5.958E-11	6.007E-11	0.000E+00
mn 58	0.000E+00	1.406E-13	1.427E-13	1.424E-13	1.423E-13	1.427E-13	1.435E-13	1.445E-13	1.453E-13	1.460E-13	0.000E+00
fe 54	6.734E+01	6.732E+01	6.730E+01	6.729E+01	6.727E+01	6.726E+01	6.724E+01	6.722E+01	6.722E+01	6.721E+01	6.721E+01
fe 55	0.000E+00	1.430E-02	2.780E-02	4.029E-02	5.188E-02	6.267E-02	7.275E-02	8.220E-02	8.697E-02	9.168E-02	8.799E-02
fe 56	1.103E+03	1.103E+03	1.102E+03	1.102E+03	1.102E+03	1.102E+03	1.101E+03	1.101E+03	1.101E+03	1.101E+03	1.101E+03
fe 57	2.630E+01	2.658E+01	2.686E+01	2.713E+01	2.741E+01	2.769E+01	2.796E+01	2.824E+01	2.838E+01	2.853E+01	2.853E+01
fe 58	3.610E+00	3.620E+00	3.633E+00	3.647E+00	3.661E+00	3.676E+00	3.690E+00	3.705E+00	3.712E+00	3.720E+00	3.724E+00
fe 59	0.000E+00	2.566E-04	3.144E-04	3.259E-04	3.281E-04	3.293E-04	3.309E-04	3.332E-04	3.346E-04	3.362E-04	1.341E-04
co 58m	0.000E+00	1.015E-09	1.021E-09	1.010E-09	1.001E-09	9.954E-10	9.920E-10	9.904E-10	9.909E-10	9.911E-10	0.000E+00
co 58	0.000E+00	6.422E-03	8.006E-03	8.351E-03	8.411E-03	8.417E-03	8.422E-03	8.434E-03	8.444E-03	8.457E-03	4.751E-03
co 59	5.000E+00	4.974E+00	4.950E+00	4.926E+00	4.903E+00	4.880E+00	4.857E+00	4.834E+00	4.822E+00	4.810E+00	4.810E+00
co 60	0.000E+00	2.805E-02	5.527E-02	8.120E-02	1.060E-01	1.297E-01	1.524E-01	1.744E-01	1.856E-01	1.969E-01	1.928E-01
co 60m	0.000E+00	1.612E-06	1.623E-06	1.605E-06	1.590E-06	1.581E-06	1.575E-06	1.573E-06	1.574E-06	1.575E-06	0.000E+00
co 61	0.000E+00	1.289E-08	2.255E-08	3.142E-08	3.985E-08	4.799E-08	5.593E-08	6.373E-08	6.787E-08	7.201E-08	0.000E+00
co 62	0.000E+00	9.118E-12	9.209E-12	9.139E-12	9.089E-12	9.067E-12	9.069E-12	9.088E-12	9.111E-12	9.132E-12	0.000E+00
ni 58	3.033E+02	3.031E+02	3.030E+02	3.028E+02	3.027E+02	3.026E+02	3.024E+02	3.023E+02	3.022E+02	3.021E+02	3.021E+02
ni 59	0.000E+00	1.312E-01	2.620E-01	3.901E-01	5.159E-01	6.397E-01	7.619E-01	8.828E-01	9.463E-01	1.011E+00	1.011E+00
ni 60	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02
ni 61	5.279E+00	5.311E+00	5.342E+00	5.374E+00	5.405E+00	5.437E+00	5.468E+00	5.499E+00	5.516E+00	5.533E+00	5.533E+00
ni 62	1.705E+01	1.703E+01	1.700E+01	1.698E+01	1.696E+01	1.694E+01	1.692E+01	1.690E+01	1.689E+01	1.688E+01	1.688E+01
ni 63	0.000E+00	2.286E-02	4.587E-02	6.862E-02	9.116E-02	1.136E-01	1.359E-01	1.582E-01	1.700E-01	1.821E-01	1.819E-01
ni 64	4.461E+00	4.460E+00	4.459E+00	4.459E+00	4.458E+00	4.458E+00	4.457E+00	4.457E+00	4.456E+00	4.456E+00	4.456E+00
ni 65	0.000E+00	1.076E-06	1.088E-06	1.081E-06	1.076E-06	1.075E-06	1.076E-06	1.079E-06	1.083E-06	1.086E-06	0.000E+00
ni 66	0.000E+00	8.013E-11	8.193E-11	8.088E-11	8.017E-11	7.996E-11	8.017E-11	8.069E-11	8.120E-11	8.168E-11	1.279E-18
cu 62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cu 63	0.000E+00	2.168E-05	8.682E-05	1.953E-04	3.466E-04	5.404E-04	7.766E-04	1.055E-03	1.219E-03	1.399E-03	1.603E-03
cu 64	0.000E+00	9.336E-11	3.753E-10	8.368E-10	1.477E-09	2.298E-09	3.306E-09	4.503E-09	5.222E-09	6.009E-09	0.000E+00
cu 65	0.000E+00	7.092E-04	1.427E-03	2.140E-03	2.850E-03	3.559E-03	4.268E-03	4.979E-03	5.357E-03	5.744E-03	5.745E-03
cu 66	0.000E+00	9.898E-12	2.002E-11	2.976E-11	3.941E-11	4.912E-11	5.897E-11	6.900E-11	7.447E-11	8.007E-11	1.993E-21

cu 67	0.000E+00	3.571E-15	7.303E-15	1.079E-14	1.423E-14	1.771E-14	2.129E-14	2.499E-14	2.706E-14	2.918E-14	3.727E-21
sr 84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 85m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 87	0.000E+00	6.196E-05	1.243E-04	1.861E-04	2.473E-04	3.082E-04	3.689E-04	4.295E-04	4.617E-04	4.945E-04	4.945E-04
sr 87m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 88	0.000E+00	5.667E-03	1.140E-02	1.709E-02	2.276E-02	2.842E-02	3.408E-02	3.977E-02	4.279E-02	4.588E-02	4.588E-02
sr 89	0.000E+00	2.347E-04	2.970E-04	3.113E-04	3.139E-04	3.143E-04	3.148E-04	3.157E-04	3.164E-04	3.173E-04	1.413E-04
sr 90	0.000E+00	1.568E-08	5.501E-08	1.123E-07	1.859E-07	2.755E-07	3.811E-07	5.029E-07	5.742E-07	6.516E-07	6.490E-07
sr 91	0.000E+00	1.456E-07	1.472E-07	1.463E-07	1.457E-07	1.455E-07	1.457E-07	1.461E-07	1.466E-07	1.470E-07	0.000E+00
sr 93	0.000E+00	2.228E-11	2.253E-11	2.238E-11	2.228E-11	2.225E-11	2.227E-11	2.234E-11	2.241E-11	2.247E-11	0.000E+00
y 89	0.000E+00	1.965E-04	5.704E-04	9.894E-04	1.418E-03	1.849E-03	2.280E-03	2.712E-03	2.941E-03	3.176E-03	3.352E-03
y 89m	0.000E+00	8.025E-14	1.015E-13	1.064E-13	1.073E-13	1.075E-13	1.076E-13	1.080E-13	1.082E-13	1.085E-13	4.831E-14
y 90	0.000E+00	6.163E-04	6.232E-04	6.192E-04	6.165E-04	6.157E-04	6.165E-04	6.186E-04	6.205E-04	6.224E-04	3.084E-10
y 90m	0.000E+00	3.755E-14	1.102E-13	1.899E-13	2.710E-13	3.529E-13	4.358E-13	5.201E-13	5.659E-13	6.128E-13	0.000E+00
y 91	0.000E+00	6.458E-04	8.504E-04	9.087E-04	9.236E-04	9.273E-04	9.292E-04	9.318E-04	9.337E-04	9.359E-04	4.653E-04
y 92	0.000E+00	2.053E-06	2.077E-06	2.064E-06	2.055E-06	2.053E-06	2.056E-06	2.063E-06	2.069E-06	2.076E-06	0.000E+00
y 93	0.000E+00	1.190E-09	1.203E-09	1.195E-09	1.189E-09	1.188E-09	1.189E-09	1.193E-09	1.197E-09	1.200E-09	0.000E+00

case 1 light elements page 3
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
y 94	0.000E+00	1.051E-08	1.063E-08	1.056E-08	1.052E-08	1.051E-08	1.052E-08	1.055E-08	1.059E-08	1.062E-08	0.000E+00
y 96	0.000E+00	4.055E-13	4.100E-13	4.073E-13	4.055E-13	4.049E-13	4.054E-13	4.066E-13	4.079E-13	4.090E-13	0.000E+00
zr 89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zr 90	4.984E+04	4.984E+04	4.984E+04	4.984E+04	4.984E+04	4.984E+04	4.984E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04
zr 91	1.096E+04	1.096E+04	1.096E+04	1.095E+04	1.095E+04	1.095E+04	1.095E+04	1.095E+04	1.095E+04	1.095E+04	1.095E+04
zr 92	1.692E+04	1.692E+04	1.692E+04	1.692E+04	1.693E+04	1.693E+04	1.693E+04	1.693E+04	1.693E+04	1.694E+04	1.694E+04
zr 93	0.000E+00	9.656E-01	1.941E+00	2.908E+00	3.870E+00	4.830E+00	5.790E+00	6.751E+00	7.262E+00	7.783E+00	7.783E+00
zr 94	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04
zr 95	0.000E+00	2.102E-01	2.838E-01	3.073E-01	3.143E-01	3.165E-01	3.175E-01	3.185E-01	3.192E-01	3.200E-01	1.689E-01
zr 96	2.891E+03	2.890E+03	2.889E+03	2.889E+03	2.888E+03	2.888E+03	2.887E+03	2.887E+03	2.886E+03	2.886E+03	2.886E+03
zr 97	0.000E+00	5.647E-03	5.709E-03	5.672E-03	5.646E-03	5.638E-03	5.645E-03	5.662E-03	5.680E-03	5.696E-03	0.000E+00
nb 91	0.000E+00	1.649E-20	2.661E-19	1.339E-18	4.209E-18	1.024E-17	2.117E-17	3.918E-17	5.245E-17	6.920E-17	6.919E-17

nb 92	0.000E+00	3.167E-17	5.110E-16	2.572E-15	8.084E-15	1.966E-14	4.067E-14	7.526E-14	1.008E-13	1.329E-13	1.329E-13
nb 93	0.000E+00	2.342E-10	1.870E-09	6.301E-09	1.490E-08	2.901E-08	4.995E-08	7.904E-08	9.821E-08	1.207E-07	1.488E-07
nb 93m	0.000E+00	5.967E-08	2.383E-07	5.346E-07	9.465E-07	1.472E-06	2.110E-06	2.858E-06	3.300E-06	3.781E-06	4.323E-06
nb 94	0.000E+00	2.563E-14	4.132E-13	2.078E-12	6.525E-12	1.585E-11	3.277E-11	6.058E-11	8.107E-11	1.069E-10	1.069E-10
nb 95	0.000E+00	7.275E-02	1.344E-01	1.601E-01	1.690E-01	1.719E-01	1.729E-01	1.735E-01	1.738E-01	1.742E-01	1.378E-01
nb 95m	0.000E+00	1.316E-04	1.803E-04	1.959E-04	2.006E-04	2.021E-04	2.027E-04	2.034E-04	2.065E-04	2.069E-04	1.120E-04
nb 96	0.000E+00	9.335E-07	1.747E-06	2.071E-06	2.178E-06	2.212E-06	2.228E-06	2.243E-06	2.268E-06	2.280E-06	1.266E-24
nb 97	0.000E+00	4.015E-04	4.060E-04	4.033E-04	4.015E-04	4.009E-04	4.014E-04	4.026E-04	4.039E-04	4.050E-04	0.000E+00
nb 97m	0.000E+00	5.279E-06	5.338E-06	5.303E-06	5.279E-06	5.271E-06	5.277E-06	5.294E-06	5.310E-06	5.325E-06	0.000E+00
nb 98	0.000E+00	2.706E-19	1.113E-18	2.489E-18	4.398E-18	6.852E-18	9.871E-18	1.348E-17	1.566E-17	1.805E-17	0.000E+00
nb100	0.000E+00	6.253E-29	5.294E-28	1.784E-27	4.201E-27	8.181E-27	1.416E-26	2.262E-26	2.832E-26	3.507E-26	0.000E+00
mo 92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 94	0.000E+00	4.795E-20	1.544E-18	1.168E-17	4.898E-17	1.488E-16	3.690E-16	7.954E-16	1.145E-15	1.617E-15	2.206E-15
mo 95	0.000E+00	6.106E-02	2.732E-01	5.678E-01	8.928E-01	1.227E+00	1.563E+00	1.899E+00	2.077E+00	2.259E+00	2.446E+00
mo 96	0.000E+00	1.053E-04	9.048E-04	2.886E-03	6.251E-03	1.107E-02	1.737E-02	2.518E-02	2.993E-02	3.522E-02	3.522E-02
mo 97	0.000E+00	5.497E-01	1.111E+00	1.668E+00	2.223E+00	2.776E+00	3.330E+00	3.884E+00	4.179E+00	4.480E+00	4.486E+00
mo 98	0.000E+00	1.990E-04	8.090E-04	1.822E-03	3.233E-03	5.042E-03	7.254E-03	9.875E-03	1.143E-02	1.314E-02	1.314E-02
mo 99	0.000E+00	2.028E-09	8.339E-09	1.866E-08	3.296E-08	5.135E-08	7.398E-08	1.011E-07	1.174E-07	1.353E-07	4.649E-14
mo100	0.000E+00	7.018E-13	5.875E-12	1.992E-11	4.713E-11	9.188E-11	1.588E-10	2.529E-10	3.156E-10	3.897E-10	3.897E-10
mo101	0.000E+00	1.622E-20	1.373E-19	4.628E-19	1.090E-18	2.122E-18	3.674E-18	5.869E-18	7.347E-18	9.098E-18	0.000E+00
cd106	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd108	0.000E+00	0.000E+00	0.000E+00	1.513E-43	2.573E-42	3.405E-41	2.803E-40	1.669E-39	3.888E-39	8.685E-39	8.685E-39
cd109	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.527E-43	4.582E-43	1.222E-42	1.069E-42
cd110	0.000E+00	0.000E+00	6.166E-43	1.136E-40	4.309E-39	7.173E-38	7.080E-37	4.916E-36	1.233E-35	2.953E-35	2.977E-35
cd111	0.000E+00	6.820E-08	1.369E-07	2.049E-07	2.724E-07	3.395E-07	4.064E-07	4.734E-07	5.089E-07	5.451E-07	5.451E-07
cd111m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd112	0.000E+00	5.914E-07	1.186E-06	1.774E-06	2.356E-06	2.934E-06	3.510E-06	4.085E-06	4.389E-06	4.699E-06	4.699E-06
cd113	0.000E+00	4.480E-08	4.607E-08	4.617E-08	4.623E-08	4.629E-08	4.634E-08	4.640E-08	4.643E-08	4.647E-08	4.647E-08
cd113m	0.000E+00	6.208E-11	2.496E-10	5.577E-10	9.828E-10	1.523E-09	2.178E-09	2.946E-09	3.400E-09	3.896E-09	3.865E-09
cd114	0.000E+00	2.564E-06	6.375E-06	1.264E-05	2.223E-05	3.567E-05	5.325E-05	7.514E-05	8.852E-05	1.035E-04	1.135E-04
cd115	0.000E+00	9.346E-10	1.028E-09	1.156E-09	1.357E-09	1.643E-09	2.023E-09	2.501E-09	2.798E-09	3.130E-09	3.341E-17
cd115m	0.000E+00	6.283E-11	2.093E-10	4.526E-10	8.376E-10	1.401E-09	2.170E-09	3.160E-09	3.780E-09	4.483E-09	1.792E-09
cd116	0.000E+00	4.163E-07	8.372E-07	1.255E-06	1.672E-06	2.088E-06	2.504E-06	2.922E-06	3.144E-06	3.371E-06	3.371E-06
cd117	0.000E+00	5.448E-10	5.509E-10	5.475E-10	5.452E-10	5.446E-10	5.454E-10	5.472E-10	5.490E-10	5.507E-10	0.000E+00
cd117m	0.000E+00	3.402E-14	6.917E-14	1.031E-13	1.366E-13	1.704E-13	2.047E-13	2.397E-13	2.587E-13	2.782E-13	0.000E+00

case 1 light elements page 4
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
cd119	0.000E+00	2.832E-13	2.864E-13	2.845E-13	2.833E-13	2.829E-13	2.833E-13	2.842E-13	2.851E-13	2.860E-13	0.000E+00
cd121	0.000E+00	7.330E-15	7.410E-15	7.361E-15	7.327E-15	7.317E-15	7.324E-15	7.347E-15	7.369E-15	7.390E-15	0.000E+00
in113	0.000E+00	4.836E-03	1.562E-02	2.960E-02	4.522E-02	6.164E-02	7.844E-02	9.539E-02	1.044E-01	1.136E-01	1.222E-01
in113m	0.000E+00	7.909E-06	1.232E-05	1.468E-05	1.593E-05	1.659E-05	1.695E-05	1.717E-05	1.725E-05	1.733E-05	1.215E-05
in114	0.000E+00	2.706E-10	1.038E-09	2.155E-09	3.476E-09	4.912E-09	6.415E-09	7.963E-09	8.801E-09	9.661E-09	2.625E-09
in114m	0.000E+00	6.426E-06	3.243E-05	7.426E-05	1.257E-04	1.826E-04	2.426E-04	3.046E-04	3.382E-04	3.727E-04	1.632E-04
in115	0.000E+00	5.925E-07	1.123E-06	1.591E-06	2.003E-06	2.368E-06	2.691E-06	2.979E-06	3.119E-06	3.253E-06	3.255E-06
in116	0.000E+00	9.672E-12	9.810E-12	9.773E-12	9.753E-12	9.761E-12	9.791E-12	9.838E-12	9.877E-12	9.913E-12	0.000E+00
in116m	0.000E+00	2.897E-11	5.556E-11	7.816E-11	9.799E-11	1.157E-10	1.317E-10	1.463E-10	1.536E-10	1.607E-10	0.000E+00
in117	0.000E+00	1.801E-09	1.822E-09	1.810E-09	1.803E-09	1.800E-09	1.803E-09	1.809E-09	1.815E-09	1.820E-09	0.000E+00
in117m	0.000E+00	3.866E-10	3.910E-10	3.885E-10	3.869E-10	3.864E-10	3.870E-10	3.883E-10	3.896E-10	3.908E-10	0.000E+00
in118	0.000E+00	1.149E-12	1.162E-12	1.154E-12	1.149E-12	1.148E-12	1.150E-12	1.153E-12	1.157E-12	1.161E-12	0.000E+00
in119	0.000E+00	2.365E-11	2.392E-11	2.376E-11	2.367E-11	2.364E-11	2.368E-11	2.377E-11	2.385E-11	2.393E-11	0.000E+00
in119m	0.000E+00	1.706E-12	1.725E-12	1.714E-12	1.706E-12	1.704E-12	1.706E-12	1.712E-12	1.717E-12	1.722E-12	0.000E+00
in120	0.000E+00	3.726E-22	3.810E-22	3.761E-22	3.730E-22	3.721E-22	3.733E-22	3.758E-22	3.783E-22	3.806E-22	0.000E+00
in120m	0.000E+00	8.384E-21	8.572E-21	8.463E-21	8.391E-21	8.373E-21	8.398E-21	8.456E-21	8.513E-21	8.564E-21	0.000E+00
in121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sn112	1.509E+01	1.507E+01	1.505E+01	1.503E+01	1.501E+01	1.500E+01	1.498E+01	1.496E+01	1.495E+01	1.494E+01	1.494E+01
sn113	0.000E+00	1.318E-02	2.052E-02	2.445E-02	2.652E-02	2.763E-02	2.823E-02	2.859E-02	2.873E-02	2.885E-02	2.022E-02
sn113m	0.000E+00	1.176E-06	1.187E-06	1.178E-06	1.172E-06	1.169E-06	1.169E-06	1.172E-06	1.175E-06	1.178E-06	0.000E+00
sn114	1.029E+01	1.029E+01	1.028E+01	1.028E+01	1.028E+01	1.027E+01	1.027E+01	1.027E+01	1.027E+01	1.026E+01	1.026E+01
sn115	5.886E+00	5.856E+00	5.825E+00	5.795E+00	5.765E+00	5.736E+00	5.706E+00	5.677E+00	5.661E+00	5.645E+00	5.645E+00
sn116	2.297E+02	2.296E+02	2.296E+02	2.295E+02	2.294E+02	2.294E+02	2.293E+02	2.292E+02	2.292E+02	2.292E+02	2.292E+02
sn117	1.221E+02	1.221E+02	1.221E+02	1.221E+02	1.221E+02	1.221E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02
sn117m	0.000E+00	2.277E-02	2.316E-02	2.301E-02	2.291E-02	2.287E-02	2.290E-02	2.297E-02	2.304E-02	2.310E-02	1.142E-03
sn118	3.862E+02	3.863E+02	3.863E+02	3.863E+02	3.863E+02	3.863E+02	3.863E+02	3.864E+02	3.864E+02	3.864E+02	3.864E+02
sn119	1.378E+02	1.378E+02	1.378E+02	1.378E+02	1.378E+02	1.379E+02	1.379E+02	1.380E+02	1.380E+02	1.380E+02	1.381E+02
sn119m	0.000E+00	1.164E-01	2.096E-01	2.824E-01	3.394E-01	3.842E-01	4.198E-01	4.482E-01	4.610E-01	4.727E-01	4.111E-01
sn120	5.237E+02	5.237E+02	5.237E+02	5.238E+02	5.238E+02	5.238E+02	5.238E+02	5.238E+02	5.238E+02	5.238E+02	5.238E+02
sn121	0.000E+00	5.604E-04	5.667E-04	5.631E-04	5.607E-04	5.601E-04	5.609E-04	5.627E-04	5.646E-04	5.662E-04	8.553E-08
sn121m	0.000E+00	2.459E-04	4.938E-04	7.392E-04	9.827E-04	1.225E-03	1.467E-03	1.709E-03	1.837E-03	1.968E-03	1.964E-03

sn122	7.559E+01	7.559E+01	7.558E+01	7.558E+01	7.558E+01	7.557E+01	7.557E+01	7.557E+01	7.556E+01	7.556E+01	7.556E+01	
sn123	0.000E+00	2.923E-03	4.665E-03	5.664E-03	6.235E-03	6.566E-03	6.763E-03	6.887E-03	6.936E-03	6.979E-03	5.085E-03	
sn123m	0.000E+00	8.389E-09	8.483E-09	8.428E-09	8.391E-09	8.381E-09	8.392E-09	8.419E-09	8.446E-09	8.470E-09	0.000E+00	
sn124	9.353E+01	9.351E+01	9.349E+01	9.346E+01	9.344E+01	9.342E+01	9.339E+01	9.337E+01	9.336E+01	9.334E+01	9.334E+01	
sn125	0.000E+00	9.880E-05	9.996E-05	9.930E-05	9.884E-05	9.870E-05	9.881E-05	9.911E-05	9.933E-05	9.961E-05	1.432E-06	
sn125m	0.000E+00	2.199E-06	2.223E-06	2.208E-06	2.198E-06	2.195E-06	2.197E-06	2.204E-06	2.210E-06	2.217E-06	0.000E+00	
sb121	0.000E+00	3.379E-02	6.831E-02	1.024E-01	1.362E-01	1.697E-01	2.031E-01	2.363E-01	2.539E-01	2.719E-01	2.724E-01	
sb122	0.000E+00	7.975E-06	1.631E-05	2.429E-05	3.216E-05	4.003E-05	4.796E-05	5.600E-05	6.037E-05	6.483E-05	1.715E-11	
sb122m	0.000E+00	7.599E-11	1.554E-10	2.314E-10	3.064E-10	3.813E-10	4.569E-10	5.335E-10	5.751E-10	6.175E-10	0.000E+00	
sb123	0.000E+00	8.738E-04	2.965E-03	5.764E-03	8.961E-03	1.238E-02	1.593E-02	1.954E-02	2.147E-02	2.345E-02	2.535E-02	
sb124	0.000E+00	9.569E-07	5.324E-06	1.289E-05	2.266E-05	3.384E-05	4.593E-05	5.862E-05	6.555E-05	7.272E-05	3.686E-05	
sb124m	0.000E+00	1.391E-13	4.774E-13	9.220E-13	1.427E-12	1.970E-12	2.537E-12	3.123E-12	3.443E-12	3.771E-12	0.000E+00	
sb125	0.000E+00	2.285E-02	4.450E-02	6.452E-02	8.308E-02	1.004E-01	1.165E-01	1.316E-01	1.392E-01	1.467E-01	1.409E-01	
sb126	0.000E+00	1.441E-06	3.143E-06	4.681E-06	6.098E-06	7.425E-06	8.682E-06	9.881E-06	1.050E-05	1.112E-05	4.105E-07	
sb126m	0.000E+00	1.629E-09	3.209E-09	4.623E-09	5.927E-09	7.150E-09	8.310E-09	9.418E-09	9.995E-09	1.057E-08	0.000E+00	
te120	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
te121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
te121m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
te122	0.000E+00	9.604E-05	3.983E-04	9.017E-04	1.602E-03	2.499E-03	3.591E-03	4.883E-03	5.648E-03	6.486E-03	6.549E-03	

power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
te123	0.000E+00	5.162E-08	4.391E-07	1.492E-06	3.505E-06	6.736E-06	1.141E-05	1.773E-05	2.180E-05	2.649E-05	2.869E-05
te123m	0.000E+00	2.819E-08	2.089E-07	6.298E-07	1.336E-06	2.352E-06	3.697E-06	5.386E-06	6.426E-06	7.593E-06	5.395E-06
te124	0.000E+00	3.048E-07	3.616E-06	1.402E-05	3.481E-05	6.826E-05	1.159E-04	1.790E-04	2.190E-04	2.647E-04	3.005E-04
te125	0.000E+00	6.748E-04	2.780E-03	6.309E-03	1.118E-02	1.731E-02	2.461E-02	3.300E-02	3.786E-02	4.310E-02	4.894E-02
te125m	0.000E+00	1.286E-04	3.741E-04	6.413E-04	9.007E-04	1.145E-03	1.374E-03	1.588E-03	1.695E-03	1.801E-03	1.861E-03
te126	0.000E+00	7.428E-06	3.289E-05	7.671E-05	1.389E-04	2.197E-04	3.195E-04	4.389E-04	5.103E-04	5.890E-04	5.997E-04
te127	0.000E+00	1.674E-11	7.637E-11	1.796E-10	3.273E-10	5.215E-10	7.646E-10	1.059E-09	1.239E-09	1.437E-09	8.915E-11
te127m	0.000E+00	1.182E-10	9.379E-10	2.917E-09	6.291E-09	1.121E-08	1.777E-08	2.609E-08	3.125E-08	3.706E-08	2.547E-08
te128	0.000E+00	1.415E-13	2.527E-12	1.304E-11	4.107E-11	9.934E-11	2.041E-10	3.752E-10	5.007E-10	6.589E-10	6.589E-10
te129	0.000E+00	1.141E-20	2.078E-19	1.071E-18	3.370E-18	8.163E-18	1.682E-17	3.107E-17	4.162E-17	5.496E-17	6.030E-19
te129m	0.000E+00	1.740E-19	4.976E-18	3.159E-17	1.118E-16	2.918E-16	6.328E-16	1.213E-15	1.650E-15	2.209E-15	6.540E-16
te130	0.000E+00	8.779E-24	5.249E-22	5.151E-21	2.482E-20	8.217E-20	2.162E-19	4.873E-19	7.154E-19	1.030E-18	1.030E-18

tc131	0.000E+00	7.502E-32	4.536E-30	4.422E-29	2.122E-28	7.016E-28	1.848E-27	4.180E-27	6.156E-27	8.887E-27	9.179E-43
tc131m	0.000E+00	3.938E-31	2.381E-29	2.322E-28	1.114E-27	3.683E-27	9.703E-27	2.195E-26	3.232E-26	4.665E-26	2.886E-40
eu151	0.000E+00	1.980E-10	4.735E-10	6.797E-10	8.261E-10	9.427E-10	1.048E-09	1.147E-09	1.198E-09	1.247E-09	1.352E-09
eu152	0.000E+00	5.969E-09	3.982E-08	1.109E-07	2.173E-07	3.518E-07	5.051E-07	6.681E-07	7.554E-07	8.437E-07	8.366E-07
eu152m	0.000E+00	1.006E-10	3.388E-10	6.318E-10	9.342E-10	1.221E-09	1.477E-09	1.697E-09	1.799E-09	1.891E-09	0.000E+00
eu153	0.000E+00	2.744E-02	9.147E-02	1.717E-01	2.551E-01	3.337E-01	4.033E-01	4.618E-01	4.881E-01	5.115E-01	5.498E-01
eu154	0.000E+00	5.303E-04	3.479E-03	9.537E-03	1.839E-02	2.930E-02	4.142E-02	5.395E-02	6.052E-02	6.705E-02	6.618E-02
eu155	0.000E+00	2.857E-05	3.099E-04	1.088E-03	2.435E-03	4.286E-03	6.504E-03	8.933E-03	1.025E-02	1.160E-02	1.132E-02
eu156	0.000E+00	4.316E-06	6.075E-05	2.388E-04	5.667E-04	1.035E-03	1.613E-03	2.262E-03	2.624E-03	2.995E-03	2.027E-04
gd152	1.051E+00	8.457E-01	6.788E-01	5.455E-01	4.389E-01	3.532E-01	2.841E-01	2.284E-01	2.034E-01	1.806E-01	1.806E-01
gd153	0.000E+00	1.791E-01	2.800E-01	3.263E-01	3.379E-01	3.283E-01	3.066E-01	2.787E-01	2.628E-01	2.463E-01	2.079E-01
gd154	1.118E+01	1.108E+01	1.097E+01	1.087E+01	1.077E+01	1.066E+01	1.056E+01	1.047E+01	1.041E+01	1.036E+01	1.036E+01
gd155m	0.000E+00	5.969E-11	3.425E-11	1.959E-11	1.146E-11	6.928E-12	4.386E-12	2.955E-12	2.472E-12	2.109E-12	0.000E+00
gd155	7.932E+01	4.471E+01	2.507E+01	1.415E+01	8.038E+00	4.603E+00	2.667E+00	1.574E+00	1.204E+00	9.270E-01	9.272E-01
gd156	1.111E+02	1.511E+02	1.736E+02	1.859E+02	1.926E+02	1.962E+02	1.981E+02	1.989E+02	1.992E+02	1.993E+02	1.993E+02
gd157	8.523E+01	8.184E+00	9.232E-01	2.726E-01	2.204E-01	2.200E-01	2.224E-01	2.238E-01	2.242E-01	2.244E-01	2.244E-01
gd158	1.355E+02	2.261E+02	2.348E+02	2.358E+02	2.361E+02	2.364E+02	2.366E+02	2.369E+02	2.370E+02	2.372E+02	2.372E+02
gd159	0.000E+00	3.742E-03	3.935E-03	3.931E-03	3.925E-03	3.930E-03	3.944E-03	3.967E-03	3.985E-03	4.002E-03	0.000E+00
gd160	1.206E+02	1.206E+02	1.205E+02	1.205E+02	1.205E+02	1.204E+02	1.204E+02	1.204E+02	1.203E+02	1.203E+02	1.203E+02
gd161	0.000E+00	1.327E-06	1.341E-06	1.332E-06	1.326E-06	1.324E-06	1.325E-06	1.329E-06	1.333E-06	1.337E-06	0.000E+00
gd162	0.000E+00	2.467E-10	2.522E-10	2.489E-10	2.467E-10	2.460E-10	2.466E-10	2.481E-10	2.497E-10	2.511E-10	0.000E+00
tb157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tb159	0.000E+00	2.870E-01	6.279E-01	9.672E-01	1.301E+00	1.630E+00	1.956E+00	2.278E+00	2.448E+00	2.620E+00	2.624E+00
tb160	0.000E+00	1.543E-03	5.351E-03	1.002E-02	1.494E-02	1.991E-02	2.489E-02	2.990E-02	3.257E-02	3.530E-02	2.005E-02
tb161	0.000E+00	3.612E-03	3.679E-03	3.687E-03	3.705E-03	3.734E-03	3.774E-03	3.820E-03	3.840E-03	3.869E-03	1.033E-05
tb162	0.000E+00	2.279E-10	2.330E-10	2.299E-10	2.279E-10	2.272E-10	2.278E-10	2.292E-10	2.307E-10	2.320E-10	0.000E+00
dy156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy158	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy159	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy160	0.000E+00	4.980E-04	3.595E-03	1.056E-02	2.165E-02	3.678E-02	5.575E-02	7.837E-02	9.176E-02	1.064E-01	1.216E-01
dy161	0.000E+00	3.144E-02	6.458E-02	9.574E-02	1.253E-01	1.538E-01	1.815E-01	2.087E-01	2.231E-01	2.376E-01	2.415E-01
dy162	0.000E+00	1.159E-03	4.683E-03	1.022E-02	1.748E-02	2.624E-02	3.633E-02	4.763E-02	5.402E-02	6.084E-02	6.084E-02
dy163	0.000E+00	3.202E-05	2.566E-04	8.377E-04	1.904E-03	3.559E-03	5.890E-03	8.971E-03	1.093E-02	1.316E-02	1.316E-02
dy164	0.000E+00	4.308E-07	6.682E-06	3.193E-05	9.437E-05	2.151E-04	4.170E-04	7.234E-04	9.363E-04	1.194E-03	1.194E-03
dy165	0.000E+00	1.077E-10	1.689E-09	8.023E-09	2.362E-08	5.379E-08	1.044E-07	1.818E-07	2.361E-07	3.019E-07	0.000E+00
dy165m	0.000E+00	6.187E-13	9.704E-12	4.607E-11	1.356E-10	3.087E-10	5.992E-10	1.043E-09	1.354E-09	1.732E-09	0.000E+00
dy166	0.000E+00	6.919E-12	1.098E-10	5.180E-10	1.518E-09	3.454E-09	6.714E-09	1.173E-08	1.528E-08	1.960E-08	1.173E-13

case 1 light elements page 6
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
ho163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ho165	0.000E+00	1.570E-08	4.891E-07	3.534E-06	1.403E-05	4.029E-05	9.444E-05	1.927E-04	2.694E-04	3.697E-04	3.700E-04
ho166	0.000E+00	8.582E-12	2.348E-10	1.597E-09	6.141E-09	1.732E-08	4.018E-08	8.159E-08	1.141E-07	1.565E-07	5.733E-14
ho166m	0.000E+00	2.671E-12	1.679E-10	1.833E-09	9.786E-09	3.543E-08	1.005E-07	2.416E-07	3.652E-07	5.401E-07	5.400E-07
er162	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er164	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er166	0.000E+00	9.171E-11	4.936E-09	5.091E-08	2.637E-07	9.370E-07	2.625E-06	6.247E-06	9.404E-06	1.385E-05	1.403E-05
er167	0.000E+00	9.138E-14	9.528E-12	1.433E-10	9.643E-10	4.182E-09	1.376E-08	3.741E-08	5.997E-08	9.371E-08	9.371E-08
er167m	0.000E+00	1.015E-19	5.522E-18	5.659E-17	2.919E-16	1.036E-15	2.906E-15	6.938E-15	1.048E-14	1.548E-14	0.000E+00
er168	0.000E+00	2.667E-15	5.576E-13	1.251E-11	1.122E-10	6.104E-10	2.421E-09	7.732E-09	1.338E-08	2.249E-08	2.249E-08
er169	0.000E+00	6.611E-19	1.398E-16	3.117E-15	2.785E-14	1.513E-13	6.010E-13	1.926E-12	2.943E-12	4.997E-12	6.447E-14
er170	0.000E+00	3.231E-25	5.230E-22	3.922E-20	8.112E-19	8.319E-18	5.505E-17	2.698E-16	5.602E-16	1.116E-15	1.810E-15
er171	0.000E+00	1.962E-30	3.212E-27	2.393E-25	4.928E-24	5.048E-23	3.344E-22	1.645E-21	3.426E-21	6.843E-21	0.000E+00
er172	0.000E+00	1.160E-33	1.920E-30	1.422E-28	2.915E-27	2.982E-26	1.979E-25	9.763E-25	2.040E-24	4.086E-24	9.248E-33
totals	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05
flux	1.775E+13	1.795E+13	1.783E+13	1.775E+13	1.773E+13	1.776E+13	1.782E+13	1.787E+13	1.793E+13	0.000E+00	

case 1 actinides page 7
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
he 4	0.000E+00	1.163E-05	4.861E-05	1.212E-04	2.557E-04	5.027E-04	9.413E-04	1.679E-03	2.237E-03	2.953E-03	3.748E-03
th226	0.000E+00	5.228E-19	1.490E-18	2.860E-18	4.790E-18	7.437E-18	1.095E-17	1.547E-17	1.834E-17	2.160E-17	3.026E-18
th227	0.000E+00	6.473E-15	4.164E-14	1.226E-13	2.632E-13	4.758E-13	7.708E-13	1.158E-12	1.402E-12	1.682E-12	2.015E-12
th228	0.000E+00	2.893E-10	1.253E-09	3.126E-09	6.241E-09	1.101E-08	1.791E-08	2.747E-08	3.380E-08	4.126E-08	5.021E-08
th229	0.000E+00	1.648E-11	6.769E-11	1.574E-10	2.920E-10	4.811E-10	7.391E-10	1.085E-09	1.311E-09	1.579E-09	1.686E-09

th230	0.000E+00	3.077E-05	5.937E-05	8.595E-05	1.106E-04	1.335E-04	1.547E-04	1.742E-04	1.839E-04	1.933E-04	2.089E-04
th231	0.000E+00	4.114E-08	6.188E-08	8.049E-08	9.767E-08	1.137E-07	1.288E-07	1.430E-07	1.503E-07	1.574E-07	1.212E-08
th232	0.000E+00	3.813E-07	1.143E-06	2.259E-06	3.704E-06	5.454E-06	7.486E-06	9.782E-06	1.110E-05	1.251E-05	1.411E-05
th233	0.000E+00	2.740E-13	8.303E-13	1.631E-12	2.662E-12	3.915E-12	5.382E-12	7.055E-12	8.031E-12	9.077E-12	0.000E+00
th234	0.000E+00	2.538E-06	2.678E-06	2.684E-06	2.682E-06	2.679E-06	2.676E-06	2.674E-06	2.672E-06	2.671E-06	2.670E-06
pa231	0.000E+00	1.918E-06	5.153E-06	9.511E-06	1.486E-05	2.108E-05	2.807E-05	3.575E-05	4.007E-05	4.463E-05	4.526E-05
pa232	0.000E+00	1.331E-09	3.616E-09	6.633E-09	1.032E-08	1.462E-08	1.950E-08	2.491E-08	2.801E-08	3.129E-08	8.699E-22
pa233	0.000E+00	2.350E-08	7.159E-08	1.323E-07	2.028E-07	2.820E-07	3.689E-07	4.628E-07	5.133E-07	5.677E-07	6.001E-07
pa234m	0.000E+00	8.558E-11	9.032E-11	9.051E-11	9.045E-11	9.037E-11	9.030E-11	9.023E-11	9.019E-11	9.015E-11	9.003E-11
pa234	0.000E+00	3.952E-11	4.432E-11	4.774E-11	5.156E-11	5.586E-11	6.063E-11	6.585E-11	6.876E-11	7.185E-11	4.021E-11
pa235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
u230	0.000E+00	5.157E-16	1.470E-15	2.821E-15	4.725E-15	7.336E-15	1.080E-14	1.526E-14	1.808E-14	2.130E-14	2.982E-15
u231	0.000E+00	1.798E-14	4.131E-14	7.160E-14	1.120E-13	1.652E-13	2.339E-13	3.207E-13	3.752E-13	4.366E-13	2.587E-17
u232	0.000E+00	2.342E-07	5.624E-07	1.033E-06	1.695E-06	2.590E-06	3.759E-06	5.238E-06	6.160E-06	7.203E-06	7.513E-06
u233	0.000E+00	2.633E-05	5.042E-05	7.206E-05	9.157E-05	1.092E-04	1.252E-04	1.397E-04	1.468E-04	1.538E-04	1.546E-04
u234	4.200E+01	4.104E+01	4.010E+01	3.918E+01	3.829E+01	3.742E+01	3.657E+01	3.573E+01	3.530E+01	3.486E+01	3.486E+01
u235	4.755E+03	4.488E+03	4.234E+03	3.995E+03	3.771E+03	3.560E+03	3.360E+03	3.171E+03	3.075E+03	2.980E+03	2.980E+03
u236	2.300E+01	7.230E+01	1.189E+02	1.621E+02	2.024E+02	2.398E+02	2.748E+02	3.076E+02	3.240E+02	3.402E+02	3.402E+02
u237	0.000E+00	1.419E-01	1.821E-01	2.165E-01	2.485E-01	2.788E-01	3.079E-01	3.358E-01	3.477E-01	3.622E-01	8.486E-04
u238	1.854E+05	1.852E+05	1.850E+05	1.848E+05	1.846E+05	1.845E+05	1.843E+05	1.841E+05	1.840E+05	1.839E+05	1.839E+05
u239	0.000E+00	3.869E-02	3.908E-02	3.880E-02	3.859E-02	3.850E-02	3.852E-02	3.861E-02	3.871E-02	3.880E-02	0.000E+00
u240	0.000E+00	3.793E-36	7.184E-33	5.627E-31	1.209E-29	1.282E-28	8.724E-28	4.380E-27	9.378E-27	1.928E-26	3.395E-26
u241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
np235	0.000E+00	1.545E-09	6.906E-09	1.637E-08	3.005E-08	4.800E-08	7.020E-08	9.664E-08	1.121E-07	1.291E-07	1.165E-07
np236m	0.000E+00	4.732E-09	1.158E-08	1.957E-08	2.863E-08	3.874E-08	4.984E-08	6.189E-08	6.870E-08	7.584E-08	8.610E-27
np236	0.000E+00	5.840E-08	2.745E-07	6.835E-07	1.315E-06	2.198E-06	3.357E-06	4.820E-06	5.718E-06	6.730E-06	6.730E-06
np237	0.000E+00	1.110E+00	2.686E+00	4.567E+00	6.712E+00	9.091E+00	1.168E+01	1.446E+01	1.600E+01	1.761E+01	1.797E+01
np238	0.000E+00	1.314E-03	3.217E-03	5.435E-03	7.954E-03	1.076E-02	1.384E-02	1.719E-02	1.909E-02	2.107E-02	5.115E-09
np239	0.000E+00	5.587E+00	5.644E+00	5.603E+00	5.573E+00	5.561E+00	5.563E+00	5.575E+00	5.590E+00	5.604E+00	5.961E-07
np240m	0.000E+00	3.237E-38	6.131E-35	4.803E-33	1.031E-31	1.094E-30	7.445E-30	3.738E-29	8.003E-29	1.646E-28	2.897E-28
np240	0.000E+00	8.211E-05	8.388E-05	8.273E-05	8.193E-05	8.166E-05	8.179E-05	8.225E-05	8.274E-05	8.318E-05	2.980E-30
np241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
pu236	0.000E+00	7.705E-08	3.565E-07	8.710E-07	1.644E-06	2.693E-06	4.036E-06	5.686E-06	6.678E-06	7.781E-06	7.522E-06
pu237	0.000E+00	5.961E-08	1.876E-07	3.550E-07	5.653E-07	8.292E-07	1.159E-06	1.566E-06	1.818E-06	2.102E-06	8.502E-07
pu238	0.000E+00	1.965E-02	9.249E-02	2.292E-01	4.389E-01	7.312E-01	1.116E+00	1.605E+00	1.908E+00	2.251E+00	2.307E+00
pu239	0.000E+00	1.448E+02	2.706E+02	3.739E+02	4.589E+02	5.291E+02	5.871E+02	6.352E+02	6.573E+02	6.776E+02	6.833E+02
pu240	0.000E+00	4.917E+00	1.762E+01	3.505E+01	5.509E+01	7.627E+01	9.762E+01	1.185E+02	1.291E+02	1.397E+02	1.397E+02
pu241	0.000E+00	3.289E-01	2.311E+00	6.773E+00	1.393E+01	2.366E+01	3.565E+01	4.952E+01	5.748E+01	6.594E+01	6.543E+01

pu242	0.000E+00	4.032E-03	5.767E-02	2.586E-01	7.235E-01	1.567E+00	2.893E+00	4.786E+00	6.043E+00	7.514E+00	7.514E+00
pu243	0.000E+00	4.530E-07	6.552E-06	2.920E-05	8.133E-05	1.760E-04	3.252E-04	5.398E-04	6.838E-04	8.527E-04	3.627E-18
pu244	0.000E+00	1.924E-25	3.638E-22	2.849E-20	6.119E-19	6.489E-18	4.417E-17	2.218E-16	4.748E-16	9.765E-16	1.719E-15
pu245	0.000E+00	1.382E-31	2.642E-28	2.056E-26	4.396E-25	4.657E-24	3.174E-23	1.599E-22	3.434E-22	7.083E-22	0.000E+00
pu246	0.000E+00	2.118E-34	6.063E-31	5.601E-29	1.319E-27	1.488E-26	1.062E-25	5.547E-25	1.207E-24	2.528E-24	9.057E-25
am239	0.000E+00	2.619E-14	3.680E-13	1.617E-12	4.434E-12	9.427E-12	1.709E-11	2.776E-11	3.475E-11	4.280E-11	0.000E+00
am240	0.000E+00	1.211E-11	1.701E-10	7.478E-10	2.052E-09	4.365E-09	7.913E-09	1.286E-08	1.611E-08	1.984E-08	8.342E-17

case 1 actinides page 8
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
am241	0.000E+00	1.104E-03	1.534E-02	6.781E-02	1.868E-01	3.976E-01	7.196E-01	1.165E+00	1.454E+00	1.785E+00	2.297E+00
am242m	0.000E+00	3.946E-06	9.821E-05	5.874E-04	1.964E-03	4.795E-03	9.616E-03	1.687E-02	2.181E-02	2.767E-02	2.765E-02
am242	0.000E+00	1.091E-06	1.533E-05	6.734E-05	1.847E-04	3.928E-04	7.119E-04	1.157E-03	1.448E-03	1.783E-03	3.567E-07
am243	0.000E+00	3.111E-05	8.991E-04	6.114E-03	2.304E-02	6.302E-02	1.410E-01	2.749E-01	3.754E-01	5.031E-01	5.040E-01
am244m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
am244	0.000E+00	1.054E-08	3.080E-07	2.081E-06	7.809E-06	2.133E-05	4.780E-05	9.352E-05	1.281E-04	1.722E-04	0.000E+00
am245	0.000E+00	1.159E-29	2.149E-26	1.623E-24	3.367E-23	3.463E-22	2.292E-21	1.122E-20	2.372E-20	4.816E-20	4.231E-20
am246	0.000E+00	5.295E-37	1.515E-33	1.399E-31	3.295E-30	3.719E-29	2.654E-28	1.386E-27	3.016E-27	6.317E-27	2.263E-27
cm241	0.000E+00	1.247E-13	5.396E-12	4.266E-11	1.707E-10	4.751E-10	1.057E-09	2.019E-09	2.720E-09	3.586E-09	1.031E-09
cm242	0.000E+00	1.789E-05	4.745E-04	2.998E-03	1.052E-02	2.680E-02	5.590E-02	1.017E-01	1.338E-01	1.728E-01	1.356E-01
cm243	0.000E+00	1.774E-08	9.515E-07	9.052E-06	4.254E-05	1.363E-04	3.430E-04	7.323E-04	1.040E-03	1.444E-03	1.439E-03
cm244	0.000E+00	2.943E-07	1.721E-05	1.775E-04	9.012E-04	3.115E-03	8.460E-03	1.948E-02	2.880E-02	4.164E-02	4.155E-02
cm245	0.000E+00	5.384E-10	6.203E-08	9.419E-07	6.262E-06	2.659E-05	8.523E-05	2.253E-04	3.554E-04	5.463E-04	5.463E-04
cm246	0.000E+00	2.262E-12	5.286E-10	1.214E-08	1.085E-07	5.817E-07	2.262E-06	7.056E-06	1.205E-05	1.998E-05	1.998E-05
cm247	0.000E+00	1.463E-15	6.866E-13	2.356E-11	2.804E-10	1.878E-09	8.762E-09	3.192E-08	5.867E-08	1.043E-07	1.043E-07
cm248	0.000E+00	4.127E-18	3.911E-15	2.021E-13	3.225E-12	2.717E-11	1.533E-10	6.566E-10	1.304E-09	2.498E-09	2.498E-09
cm249	0.000E+00	2.178E-23	2.087E-20	1.072E-18	1.703E-17	1.433E-16	8.092E-16	3.478E-15	6.931E-15	1.331E-14	2.551E-23
cm250	0.000E+00	4.011E-28	7.754E-25	5.998E-23	1.277E-21	1.351E-20	9.216E-20	4.654E-19	1.000E-18	2.067E-18	2.067E-18
cm251	0.000E+00	9.603E-36	1.877E-32	1.443E-30	3.059E-29	3.232E-28	2.208E-27	1.118E-26	2.412E-26	4.999E-26	0.000E+00
totals	1.902E+05	1.900E+05	1.897E+05	1.895E+05	1.892E+05	1.889E+05	1.887E+05	1.884E+05	1.883E+05	1.882E+05	1.882E+05
flux	1.775E+13	1.795E+13	1.783E+13	1.775E+13	1.773E+13	1.776E+13	1.782E+13	1.787E+13	1.793E+13	0.000E+00	

case 1 fission products page 9
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
h 3	0.000E+00	3.507E-04	7.129E-04	1.076E-03	1.439E-03	1.799E-03	2.158E-03	2.514E-03	2.701E-03	2.891E-03	2.865E-03
li 6	0.000E+00	3.012E-06	5.873E-06	8.523E-06	1.097E-05	1.322E-05	1.529E-05	1.720E-05	1.814E-05	1.906E-05	1.906E-05
li 7	0.000E+00	7.313E-08	1.483E-07	2.237E-07	2.989E-07	3.741E-07	4.491E-07	5.240E-07	5.636E-07	6.039E-07	6.039E-07
ge 70	0.000E+00	1.642E-11	4.959E-11	9.616E-11	1.536E-10	2.201E-10	2.942E-10	3.747E-10	4.196E-10	4.669E-10	4.669E-10
ge 71	0.000E+00	3.828E-14	7.959E-14	1.126E-13	1.396E-13	1.620E-13	1.810E-13	1.972E-13	2.051E-13	2.123E-13	5.940E-15
ge 71m	0.000E+00	4.673E-22	8.829E-22	1.212E-21	1.481E-21	1.706E-21	1.896E-21	2.058E-21	2.136E-21	2.208E-21	0.000E+00
ge 72	0.000E+00	2.062E-05	4.602E-05	7.435E-05	1.050E-04	1.376E-04	1.717E-04	2.071E-04	2.264E-04	2.463E-04	2.476E-04
ge 73	0.000E+00	8.843E-05	1.850E-04	2.861E-04	3.904E-04	4.972E-04	6.059E-04	7.160E-04	7.747E-04	8.348E-04	8.351E-04
ge 73m	0.000E+00	7.604E-12	8.209E-12	8.544E-12	8.791E-12	8.985E-12	9.138E-12	9.259E-12	9.320E-12	9.368E-12	0.000E+00
ge 74	0.000E+00	7.634E-05	1.585E-04	2.439E-04	3.317E-04	4.213E-04	5.124E-04	6.046E-04	6.538E-04	7.042E-04	7.042E-04
ge 75	0.000E+00	7.283E-07	7.480E-07	7.486E-07	7.460E-07	7.421E-07	7.373E-07	7.319E-07	7.293E-07	7.261E-07	0.000E+00
ge 75m	0.000E+00	3.600E-10	3.726E-10	3.752E-10	3.758E-10	3.754E-10	3.744E-10	3.729E-10	3.722E-10	3.711E-10	0.000E+00
as 75	0.000E+00	8.671E-04	1.761E-03	2.657E-03	3.551E-03	4.440E-03	5.322E-03	6.198E-03	6.658E-03	7.125E-03	7.126E-03
ge 76	0.000E+00	2.854E-03	5.730E-03	8.563E-03	1.135E-02	1.409E-02	1.678E-02	1.942E-02	2.081E-02	2.220E-02	2.220E-02
as 76	0.000E+00	3.463E-08	6.874E-08	1.018E-07	1.345E-07	1.673E-07	2.002E-07	2.334E-07	2.512E-07	2.694E-07	1.717E-23
se 76	0.000E+00	1.140E-06	4.383E-06	9.693E-06	1.704E-05	2.640E-05	3.777E-05	5.116E-05	5.906E-05	6.770E-05	6.797E-05
ge 77	0.000E+00	1.353E-05	1.385E-05	1.382E-05	1.374E-05	1.364E-05	1.352E-05	1.340E-05	1.334E-05	1.327E-05	0.000E+00
ge 77m	0.000E+00	4.989E-08	5.046E-08	4.987E-08	4.917E-08	4.848E-08	4.779E-08	4.711E-08	4.679E-08	4.643E-08	0.000E+00
as 77	0.000E+00	1.509E-04	1.532E-04	1.518E-04	1.501E-04	1.483E-04	1.465E-04	1.446E-04	1.438E-04	1.428E-04	1.705E-15
se 77	0.000E+00	6.263E-03	1.278E-02	1.925E-02	2.562E-02	3.191E-02	3.809E-02	4.418E-02	4.737E-02	5.058E-02	5.074E-02
se 77m	0.000E+00	6.028E-11	6.122E-11	6.072E-11	6.008E-11	5.942E-11	5.875E-11	5.809E-11	5.779E-11	5.745E-11	6.811E-22
ge 78	0.000E+00	1.543E-05	1.607E-05	1.626E-05	1.636E-05	1.642E-05	1.645E-05	1.645E-05	1.645E-05	1.644E-05	0.000E+00
as 78	0.000E+00	1.604E-05	1.671E-05	1.693E-05	1.705E-05	1.711E-05	1.715E-05	1.715E-05	1.716E-05	1.715E-05	0.000E+00
se 78	0.000E+00	1.730E-02	3.550E-02	5.406E-02	7.283E-02	9.176E-02	1.108E-01	1.299E-01	1.400E-01	1.503E-01	1.504E-01
ge 79	0.000E+00	1.085E-07	1.109E-07	1.107E-07	1.101E-07	1.093E-07	1.085E-07	1.077E-07	1.073E-07	1.068E-07	0.000E+00
as 79	0.000E+00	3.273E-06	3.359E-06	3.361E-06	3.349E-06	3.333E-06	3.314E-06	3.293E-06	3.283E-06	3.271E-06	0.000E+00
se 79	0.000E+00	3.590E-02	7.292E-02	1.101E-01	1.472E-01	1.843E-01	2.211E-01	2.578E-01	2.772E-01	2.968E-01	2.968E-01
se 79m	0.000E+00	1.405E-06	1.443E-06	1.443E-06	1.439E-06	1.432E-06	1.424E-06	1.415E-06	1.411E-06	1.406E-06	0.000E+00
br 79	0.000E+00	1.071E-07	4.253E-07	9.565E-07	1.700E-06	2.653E-06	3.815E-06	5.182E-06	5.990E-06	6.871E-06	7.878E-06
br 79m	0.000E+00	3.441E-15	4.711E-15	5.674E-15	6.451E-15	7.094E-15	7.632E-15	8.086E-15	8.306E-15	8.506E-15	0.000E+00
kr 79	0.000E+00	2.171E-15	4.245E-15	6.031E-15	7.631E-15	9.104E-15	1.049E-14	1.181E-14	1.250E-14	1.319E-14	8.933E-27

ge 80	0.000E+00	4.714E-07	4.741E-07	4.663E-07	4.580E-07	4.500E-07	4.422E-07	4.347E-07	4.312E-07	4.274E-07	0.000E+00
as 80	0.000E+00	2.672E-07	2.711E-07	2.685E-07	2.653E-07	2.621E-07	2.588E-07	2.555E-07	2.539E-07	2.521E-07	0.000E+00
se 80	0.000E+00	1.054E-01	2.127E-01	3.194E-01	4.251E-01	5.297E-01	6.332E-01	7.355E-01	7.892E-01	8.435E-01	8.435E-01
br 80	0.000E+00	2.657E-11	4.106E-11	5.257E-11	6.221E-11	7.054E-11	7.789E-11	8.450E-11	8.785E-11	9.107E-11	0.000E+00
br 80m	0.000E+00	2.981E-10	4.588E-10	5.846E-10	6.879E-10	7.749E-10	8.495E-10	9.142E-10	9.462E-10	9.760E-10	0.000E+00
kr 80	0.000E+00	9.712E-08	2.749E-07	5.177E-07	8.143E-07	1.157E-06	1.539E-06	1.956E-06	2.190E-06	2.438E-06	2.439E-06
ge 81	0.000E+00	1.339E-07	1.337E-07	1.308E-07	1.280E-07	1.253E-07	1.228E-07	1.205E-07	1.194E-07	1.182E-07	0.000E+00
as 81	0.000E+00	8.472E-07	8.595E-07	8.516E-07	8.419E-07	8.321E-07	8.223E-07	8.125E-07	8.080E-07	8.029E-07	0.000E+00
se 81	0.000E+00	2.937E-05	2.984E-05	2.961E-05	2.930E-05	2.899E-05	2.867E-05	2.835E-05	2.821E-05	2.804E-05	0.000E+00
se 81m	0.000E+00	5.861E-06	6.076E-06	6.126E-06	6.143E-06	6.143E-06	6.131E-06	6.110E-06	6.101E-06	6.085E-06	0.000E+00
br 81	0.000E+00	1.580E-01	3.189E-01	4.787E-01	6.369E-01	7.933E-01	9.479E-01	1.101E+00	1.181E+00	1.262E+00	1.262E+00
kr 81	0.000E+00	3.837E-09	9.717E-09	1.757E-08	2.740E-08	3.926E-08	5.321E-08	6.932E-08	7.877E-08	8.907E-08	8.907E-08
kr 81m	0.000E+00	1.628E-15	2.757E-15	4.058E-15	5.540E-15	7.196E-15	9.022E-15	1.101E-14	1.215E-14	1.334E-14	0.000E+00
ge 82	0.000E+00	8.703E-08	8.547E-08	8.241E-08	7.960E-08	7.712E-08	7.492E-08	7.293E-08	7.201E-08	7.107E-08	0.000E+00
as 82	0.000E+00	5.666E-07	5.606E-07	5.439E-07	5.281E-07	5.140E-07	5.011E-07	4.894E-07	4.839E-07	4.783E-07	0.000E+00
as 82m	0.000E+00	1.460E-07	1.463E-07	1.434E-07	1.405E-07	1.378E-07	1.352E-07	1.327E-07	1.315E-07	1.303E-07	0.000E+00
se 82	0.000E+00	2.708E-01	5.421E-01	8.080E-01	1.068E+00	1.324E+00	1.574E+00	1.820E+00	1.948E+00	2.078E+00	2.078E+00
br 82	0.000E+00	1.156E-05	2.191E-05	3.125E-05	3.996E-05	4.825E-05	5.625E-05	6.403E-05	6.815E-05	7.226E-05	6.115E-17
br 82m	0.000E+00	2.199E-08	4.342E-08	6.350E-08	8.286E-08	1.018E-07	1.205E-07	1.391E-07	1.490E-07	1.591E-07	0.000E+00

case 1 fission products page 10
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
kr 82	0.000E+00	2.976E-04	1.100E-03	2.361E-03	4.045E-03	6.126E-03	8.583E-03	1.140E-02	1.304E-02	1.481E-02	1.488E-02
ge 83	0.000E+00	1.552E-08	1.524E-08	1.471E-08	1.423E-08	1.382E-08	1.346E-08	1.316E-08	1.302E-08	1.288E-08	0.000E+00
as 83	0.000E+00	6.599E-07	6.501E-07	6.284E-07	6.082E-07	5.902E-07	5.741E-07	5.594E-07	5.526E-07	5.455E-07	0.000E+00
se 83	0.000E+00	4.460E-05	4.476E-05	4.395E-05	4.311E-05	4.232E-05	4.158E-05	4.087E-05	4.055E-05	4.019E-05	0.000E+00
se 83m	0.000E+00	2.719E-06	2.687E-06	2.604E-06	2.526E-06	2.456E-06	2.393E-06	2.335E-06	2.309E-06	2.281E-06	0.000E+00
br 83	0.000E+00	6.445E-04	6.411E-04	6.249E-04	6.092E-04	5.948E-04	5.816E-04	5.693E-04	5.636E-04	5.575E-04	0.000E+00
kr 83	0.000E+00	4.444E-01	8.796E-01	1.296E+00	1.693E+00	2.073E+00	2.437E+00	2.785E+00	2.963E+00	3.140E+00	3.142E+00
kr 83m	0.000E+00	4.913E-04	4.888E-04	4.764E-04	4.644E-04	4.534E-04	4.434E-04	4.340E-04	4.296E-04	4.250E-04	0.000E+00
ge 84	0.000E+00	6.496E-09	6.352E-09	6.109E-09	5.896E-09	5.717E-09	5.563E-09	5.432E-09	5.374E-09	5.315E-09	0.000E+00
as 84	0.000E+00	2.030E-07	1.989E-07	1.915E-07	1.848E-07	1.789E-07	1.738E-07	1.693E-07	1.672E-07	1.651E-07	0.000E+00
se 84	0.000E+00	2.758E-05	2.724E-05	2.639E-05	2.559E-05	2.486E-05	2.421E-05	2.361E-05	2.333E-05	2.304E-05	0.000E+00
br 84	0.000E+00	2.805E-04	2.773E-04	2.687E-04	2.607E-04	2.534E-04	2.468E-04	2.408E-04	2.380E-04	2.350E-04	0.000E+00

br 84m	0.000E+00	1.214E-06	1.234E-06	1.223E-06	1.209E-06	1.195E-06	1.180E-06	1.164E-06	1.157E-06	1.148E-06	0.000E+00
kr 84	0.000E+00	9.147E-01	1.830E+00	2.727E+00	3.607E+00	4.472E+00	5.323E+00	6.162E+00	6.602E+00	7.047E+00	7.047E+00
ge 85	0.000E+00	2.291E-10	2.243E-10	2.160E-10	2.089E-10	2.029E-10	1.979E-10	1.936E-10	1.918E-10	1.899E-10	0.000E+00
as 85	0.000E+00	4.723E-08	4.589E-08	4.383E-08	4.199E-08	4.039E-08	3.899E-08	3.774E-08	3.717E-08	3.659E-08	0.000E+00
se 85	0.000E+00	2.283E-06	2.245E-06	2.166E-06	2.092E-06	2.025E-06	1.964E-06	1.909E-06	1.883E-06	1.856E-06	0.000E+00
se 85m	0.000E+00	1.205E-06	1.186E-06	1.144E-06	1.105E-06	1.070E-06	1.038E-06	1.009E-06	9.948E-07	9.804E-07	0.000E+00
br 85	0.000E+00	2.925E-05	2.889E-05	2.798E-05	2.712E-05	2.633E-05	2.561E-05	2.493E-05	2.462E-05	2.428E-05	0.000E+00
kr 85	0.000E+00	2.198E-01	4.344E-01	6.388E-01	8.334E-01	1.019E+00	1.196E+00	1.365E+00	1.452E+00	1.538E+00	1.522E+00
kr 85m	0.000E+00	2.738E-03	2.705E-03	2.620E-03	2.540E-03	2.466E-03	2.399E-03	2.336E-03	2.307E-03	2.276E-03	0.000E+00
rb 85	0.000E+00	8.116E-01	1.621E+00	2.409E+00	3.177E+00	3.927E+00	4.660E+00	5.377E+00	5.751E+00	6.128E+00	6.146E+00
ge 86	0.000E+00	4.762E-11	4.671E-11	4.507E-11	4.365E-11	4.246E-11	4.147E-11	4.062E-11	4.026E-11	3.989E-11	0.000E+00
as 86	0.000E+00	1.243E-08	1.204E-08	1.146E-08	1.095E-08	1.050E-08	1.010E-08	9.744E-09	9.577E-09	9.409E-09	0.000E+00
se 86	0.000E+00	2.804E-06	2.737E-06	2.625E-06	2.521E-06	2.429E-06	2.347E-06	2.272E-06	2.236E-06	2.200E-06	0.000E+00
br 86	0.000E+00	1.211E-05	1.187E-05	1.142E-05	1.101E-05	1.063E-05	1.030E-05	9.990E-06	9.845E-06	9.697E-06	0.000E+00
br 86m	0.000E+00	2.004E-06	2.006E-06	1.964E-06	1.922E-06	1.882E-06	1.844E-06	1.808E-06	1.791E-06	1.773E-06	0.000E+00
kr 86	0.000E+00	1.685E+00	3.345E+00	4.948E+00	6.498E+00	8.000E+00	9.458E+00	1.088E+01	1.161E+01	1.235E+01	1.235E+01
rb 86	0.000E+00	4.565E-05	1.057E-04	1.631E-04	2.187E-04	2.732E-04	3.270E-04	3.805E-04	4.090E-04	4.379E-04	4.878E-05
rb 86m	0.000E+00	1.771E-10	3.575E-10	5.280E-10	6.934E-10	8.560E-10	1.017E-09	1.178E-09	1.264E-09	1.350E-09	0.000E+00
sr 86	0.000E+00	7.192E-05	3.539E-04	8.537E-04	1.563E-03	2.478E-03	3.594E-03	4.909E-03	5.687E-03	6.537E-03	6.926E-03
ge 87	0.000E+00	3.469E-10	3.309E-10	3.104E-10	2.917E-10	2.751E-10	2.601E-10	2.463E-10	2.397E-10	2.330E-10	0.000E+00
as 87	0.000E+00	2.791E-09	2.678E-09	2.527E-09	2.391E-09	2.270E-09	2.162E-09	2.064E-09	2.017E-09	1.969E-09	0.000E+00
se 87	0.000E+00	6.230E-07	6.061E-07	5.793E-07	5.549E-07	5.333E-07	5.140E-07	4.965E-07	4.883E-07	4.799E-07	0.000E+00
br 87	0.000E+00	1.603E-05	1.573E-05	1.515E-05	1.461E-05	1.412E-05	1.369E-05	1.328E-05	1.309E-05	1.290E-05	0.000E+00
kr 87	0.000E+00	1.637E-03	1.611E-03	1.556E-03	1.504E-03	1.457E-03	1.414E-03	1.374E-03	1.356E-03	1.336E-03	0.000E+00
rb 87	0.000E+00	2.200E+00	4.368E+00	6.463E+00	8.488E+00	1.045E+01	1.235E+01	1.420E+01	1.516E+01	1.613E+01	1.613E+01
sr 87	0.000E+00	3.907E-06	8.321E-06	1.316E-05	1.843E-05	2.416E-05	3.040E-05	3.720E-05	4.106E-05	4.517E-05	4.517E-05
sr 87m	0.000E+00	1.370E-09	1.692E-09	2.104E-09	2.634E-09	3.288E-09	4.071E-09	4.988E-09	5.534E-09	6.129E-09	0.000E+00
ge 88	0.000E+00	4.955E-13	4.775E-13	4.525E-13	4.300E-13	4.102E-13	3.925E-13	3.765E-13	3.690E-13	3.613E-13	0.000E+00
as 88	0.000E+00	5.991E-10	5.728E-10	5.384E-10	5.074E-10	4.798E-10	4.548E-10	4.321E-10	4.211E-10	4.101E-10	0.000E+00
se 88	0.000E+00	8.726E-08	8.489E-08	8.119E-08	7.786E-08	7.496E-08	7.240E-08	7.011E-08	6.905E-08	6.797E-08	0.000E+00
br 88	0.000E+00	4.864E-06	4.747E-06	4.550E-06	4.368E-06	4.207E-06	4.061E-06	3.928E-06	3.865E-06	3.801E-06	0.000E+00
kr 88	0.000E+00	5.217E-03	5.127E-03	4.943E-03	4.771E-03	4.615E-03	4.474E-03	4.344E-03	4.282E-03	4.219E-03	0.000E+00
rb 88	0.000E+00	5.566E-04	5.472E-04	5.277E-04	5.095E-04	4.930E-04	4.780E-04	4.642E-04	4.576E-04	4.509E-04	0.000E+00
sr 88	0.000E+00	3.161E+00	6.279E+00	9.288E+00	1.219E+01	1.501E+01	1.774E+01	2.039E+01	2.176E+01	2.314E+01	2.314E+01
as 89	0.000E+00	5.899E-12	5.835E-12	5.677E-12	5.541E-12	5.432E-12	5.344E-12	5.273E-12	5.246E-12	5.217E-12	0.000E+00
se 89	0.000E+00	8.512E-09	8.271E-09	7.903E-09	7.573E-09	7.285E-09	7.032E-09	6.806E-09	6.701E-09	6.595E-09	0.000E+00
br 89	0.000E+00	8.793E-07	8.596E-07	8.253E-07	7.937E-07	7.657E-07	7.406E-07	7.178E-07	7.070E-07	6.960E-07	0.000E+00
kr 89	0.000E+00	1.266E-04	1.239E-04	1.190E-04	1.145E-04	1.104E-04	1.067E-04	1.034E-04	1.017E-04	1.001E-04	0.000E+00

case 1 fission products page 11
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
rb 89	0.000E+00	6.397E-04	6.278E-04	6.045E-04	5.828E-04	5.631E-04	5.453E-04	5.288E-04	5.210E-04	5.129E-04	0.000E+00
sr 89	0.000E+00	2.327E+00	2.876E+00	2.932E+00	2.867E+00	2.780E+00	2.693E+00	2.611E+00	2.570E+00	2.529E+00	1.127E+00
y 89	0.000E+00	1.962E+00	5.627E+00	9.632E+00	1.361E+01	1.748E+01	2.123E+01	2.487E+01	2.675E+01	2.863E+01	3.004E+01
y 89m	0.000E+00	7.985E-10	9.867E-10	1.006E-09	9.839E-10	9.541E-10	9.244E-10	8.965E-10	8.824E-10	8.686E-10	3.852E-10
as 90	0.000E+00	3.855E-14	3.851E-14	3.784E-14	3.730E-14	3.692E-14	3.667E-14	3.653E-14	3.652E-14	3.650E-14	0.000E+00
se 90	0.000E+00	1.905E-09	1.854E-09	1.774E-09	1.703E-09	1.642E-09	1.589E-09	1.543E-09	1.521E-09	1.500E-09	0.000E+00
br 90	0.000E+00	2.026E-07	1.990E-07	1.919E-07	1.853E-07	1.795E-07	1.742E-07	1.695E-07	1.672E-07	1.650E-07	0.000E+00
kr 90	0.000E+00	2.373E-05	2.316E-05	2.220E-05	2.131E-05	2.052E-05	1.980E-05	1.914E-05	1.883E-05	1.851E-05	0.000E+00
rb 90	0.000E+00	1.025E-04	1.002E-04	9.622E-05	9.250E-05	8.916E-05	8.614E-05	8.337E-05	8.205E-05	8.070E-05	0.000E+00
rb 90m	0.000E+00	4.882E-05	4.850E-05	4.719E-05	4.591E-05	4.473E-05	4.363E-05	4.260E-05	4.211E-05	4.159E-05	0.000E+00
sr 90	0.000E+00	5.208E+00	1.029E+01	1.516E+01	1.981E+01	2.428E+01	2.857E+01	3.270E+01	3.483E+01	3.695E+01	3.681E+01
y 90	0.000E+00	1.365E-03	2.704E-03	3.988E-03	5.218E-03	6.398E-03	7.532E-03	8.624E-03	9.187E-03	9.748E-03	9.566E-03
y 90m	0.000E+00	4.806E-10	1.394E-09	2.370E-09	3.335E-09	4.278E-09	5.203E-09	6.114E-09	6.597E-09	7.083E-09	0.000E+00
zr 90	0.000E+00	1.711E-02	6.933E-02	1.556E-01	2.745E-01	4.247E-01	6.049E-01	8.141E-01	9.363E-01	1.069E+00	1.216E+00
zr 90m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
se 91	0.000E+00	1.088E-10	1.067E-10	1.030E-10	9.977E-11	9.707E-11	9.480E-11	9.287E-11	9.205E-11	9.121E-11	0.000E+00
br 91	0.000E+00	2.371E-08	2.292E-08	2.179E-08	2.078E-08	1.990E-08	1.912E-08	1.843E-08	1.810E-08	1.777E-08	0.000E+00
kr 91	0.000E+00	4.416E-06	4.297E-06	4.108E-06	3.936E-06	3.783E-06	3.646E-06	3.522E-06	3.463E-06	3.403E-06	0.000E+00
rb 91	0.000E+00	4.962E-05	4.878E-05	4.706E-05	4.544E-05	4.400E-05	4.268E-05	4.147E-05	4.090E-05	4.032E-05	0.000E+00
sr 91	0.000E+00	3.049E-02	3.008E-02	2.910E-02	2.818E-02	2.734E-02	2.658E-02	2.588E-02	2.555E-02	2.520E-02	0.000E+00
y 91	0.000E+00	3.134E+00	4.063E+00	4.249E+00	4.212E+00	4.115E+00	4.007E+00	3.902E+00	3.848E+00	3.796E+00	1.900E+00
y 91m	0.000E+00	1.540E-03	1.519E-03	1.469E-03	1.422E-03	1.380E-03	1.342E-03	1.306E-03	1.290E-03	1.272E-03	0.000E+00
zr 91	0.000E+00	2.227E+00	6.624E+00	1.160E+01	1.663E+01	2.157E+01	2.639E+01	3.108E+01	3.352E+01	3.597E+01	3.789E+01
nb 91	0.000E+00	3.026E-12	7.281E-12	1.248E-11	1.843E-11	2.500E-11	3.209E-11	3.960E-11	4.374E-11	4.804E-11	4.803E-11
se 92	0.000E+00	5.112E-12	5.057E-12	4.920E-12	4.804E-12	4.710E-12	4.635E-12	4.575E-12	4.552E-12	4.528E-12	0.000E+00
br 92	0.000E+00	2.324E-09	2.256E-09	2.154E-09	2.063E-09	1.984E-09	1.915E-09	1.854E-09	1.826E-09	1.798E-09	0.000E+00
kr 92	0.000E+00	5.055E-07	4.917E-07	4.700E-07	4.504E-07	4.331E-07	4.178E-07	4.039E-07	3.975E-07	3.909E-07	0.000E+00
rb 92	0.000E+00	3.340E-06	3.291E-06	3.181E-06	3.077E-06	2.984E-06	2.900E-06	2.823E-06	2.787E-06	2.749E-06	0.000E+00
sr 92	0.000E+00	8.843E-03	8.773E-03	8.532E-03	8.300E-03	8.089E-03	7.897E-03	7.720E-03	7.637E-03	7.550E-03	0.000E+00
y 92	0.000E+00	1.165E-02	1.155E-02	1.123E-02	1.093E-02	1.065E-02	1.040E-02	1.016E-02	1.005E-02	9.937E-03	0.000E+00
zr 92	0.000E+00	5.513E+00	1.101E+01	1.637E+01	2.158E+01	2.667E+01	3.163E+01	3.649E+01	3.902E+01	4.157E+01	4.159E+01

nb 92	0.000E+00	3.978E-10	9.396E-10	1.591E-09	2.330E-09	3.141E-09	4.011E-09	4.931E-09	5.437E-09	5.962E-09	5.962E-09
se 93	0.000E+00	1.866E-14	1.877E-14	1.856E-14	1.841E-14	1.832E-14	1.829E-14	1.831E-14	1.835E-14	1.839E-14	0.000E+00
br 93	0.000E+00	1.493E-10	1.594E-10	1.654E-10	1.707E-10	1.759E-10	1.810E-10	1.860E-10	1.889E-10	1.916E-10	0.000E+00
kr 93	0.000E+00	1.186E-07	1.154E-07	1.103E-07	1.058E-07	1.018E-07	9.833E-08	9.521E-08	9.377E-08	9.231E-08	0.000E+00
rb 93	0.000E+00	3.280E-06	3.256E-06	3.169E-06	3.086E-06	3.011E-06	2.944E-06	2.883E-06	2.855E-06	2.825E-06	0.000E+00
sr 93	0.000E+00	4.360E-04	4.353E-04	4.256E-04	4.161E-04	4.074E-04	3.995E-04	3.921E-04	3.887E-04	3.851E-04	0.000E+00
y 93	0.000E+00	2.403E-02	2.402E-02	2.350E-02	2.299E-02	2.253E-02	2.210E-02	2.170E-02	2.152E-02	2.132E-02	0.000E+00
zr 93	0.000E+00	3.951E+00	7.927E+00	1.182E+01	1.563E+01	1.935E+01	2.301E+01	2.659E+01	2.846E+01	3.035E+01	3.037E+01
nb 93	0.000E+00	3.571E-08	8.845E-08	1.612E-07	2.577E-07	3.821E-07	5.386E-07	7.314E-07	8.498E-07	9.827E-07	1.096E-06
nb 93m	0.000E+00	2.526E-07	9.953E-07	2.217E-06	3.900E-06	6.029E-06	8.590E-06	1.157E-05	1.331E-05	1.520E-05	1.731E-05
br 94	0.000E+00	7.383E-12	7.340E-12	7.181E-12	7.052E-12	6.958E-12	6.894E-12	6.853E-12	6.845E-12	6.837E-12	0.000E+00
kr 94	0.000E+00	8.624E-09	8.391E-09	8.031E-09	7.713E-09	7.440E-09	7.203E-09	6.996E-09	6.902E-09	6.807E-09	0.000E+00
rb 94	0.000E+00	8.014E-07	7.936E-07	7.712E-07	7.505E-07	7.323E-07	7.164E-07	7.022E-07	6.959E-07	6.893E-07	0.000E+00
sr 94	0.000E+00	7.196E-05	7.206E-05	7.066E-05	6.927E-05	6.799E-05	6.682E-05	6.574E-05	6.525E-05	6.472E-05	0.000E+00
y 94	0.000E+00	1.142E-03	1.147E-03	1.127E-03	1.107E-03	1.088E-03	1.071E-03	1.055E-03	1.048E-03	1.040E-03	0.000E+00
zr 94	0.000E+00	6.147E+00	1.234E+01	1.845E+01	2.445E+01	3.037E+01	3.620E+01	4.196E+01	4.497E+01	4.803E+01	4.803E+01
nb 94	0.000E+00	1.773E-06	4.045E-06	6.685E-06	9.613E-06	1.277E-05	1.612E-05	1.962E-05	2.153E-05	2.351E-05	2.351E-05
nb 94m	0.000E+00	5.213E-11	6.407E-11	7.269E-11	7.956E-11	8.519E-11	8.985E-11	9.374E-11	9.563E-11	9.732E-11	0.000E+00
br 95	0.000E+00	7.391E-14	7.415E-14	7.318E-14	7.245E-14	7.203E-14	7.187E-14	7.190E-14	7.205E-14	7.219E-14	0.000E+00

case 1 fission products page 12
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
kr 95	0.000E+00	2.192E-09	2.180E-09	2.136E-09	2.100E-09	2.077E-09	2.063E-09	2.057E-09	2.058E-09	2.059E-09	0.000E+00
rb 95	0.000E+00	5.458E-08	5.410E-08	5.263E-08	5.127E-08	5.010E-08	4.908E-08	4.818E-08	4.779E-08	4.738E-08	0.000E+00
sr 95	0.000E+00	2.184E-05	2.183E-05	2.137E-05	2.092E-05	2.052E-05	2.016E-05	1.983E-05	1.968E-05	1.952E-05	0.000E+00
y 95	0.000E+00	6.534E-04	6.584E-04	6.491E-04	6.393E-04	6.301E-04	6.217E-04	6.137E-04	6.103E-04	6.064E-04	0.000E+00
zr 95	0.000E+00	3.838E+00	5.178E+00	5.586E+00	5.671E+00	5.651E+00	5.598E+00	5.535E+00	5.502E+00	5.468E+00	2.887E+00
nb 95	0.000E+00	1.328E+00	2.454E+00	2.917E+00	3.062E+00	3.086E+00	3.069E+00	3.038E+00	3.020E+00	3.001E+00	2.362E+00
nb 95m	0.000E+00	2.404E-03	3.292E-03	3.564E-03	3.623E-03	3.611E-03	3.578E-03	3.538E-03	3.563E-03	3.540E-03	1.915E-03
mo 95	0.000E+00	1.114E+00	4.988E+00	1.036E+01	1.627E+01	2.230E+01	2.830E+01	3.422E+01	3.732E+01	4.046E+01	4.368E+01
br 96	0.000E+00	1.409E-14	1.412E-14	1.391E-14	1.375E-14	1.365E-14	1.360E-14	1.359E-14	1.361E-14	1.363E-14	0.000E+00
kr 96	0.000E+00	1.554E-10	1.539E-10	1.499E-10	1.467E-10	1.442E-10	1.423E-10	1.409E-10	1.405E-10	1.400E-10	0.000E+00
rb 96	0.000E+00	7.506E-09	7.355E-09	7.087E-09	6.851E-09	6.653E-09	6.485E-09	6.343E-09	6.281E-09	6.218E-09	0.000E+00
sr 96	0.000E+00	6.924E-07	6.884E-07	6.712E-07	6.552E-07	6.411E-07	6.288E-07	6.179E-07	6.131E-07	6.080E-07	0.000E+00

y 96	0.000E+00	5.872E-06	5.919E-06	5.838E-06	5.753E-06	5.676E-06	5.606E-06	5.541E-06	5.513E-06	5.482E-06	0.000E+00
zr 96	0.000E+00	6.212E+00	1.252E+01	1.877E+01	2.495E+01	3.107E+01	3.713E+01	4.313E+01	4.629E+01	4.949E+01	4.949E+01
nb 96	0.000E+00	2.744E-05	4.534E-05	5.368E-05	5.772E-05	6.025E-05	6.232E-05	6.428E-05	6.562E-05	6.669E-05	3.705E-23
mo 96	0.000E+00	2.544E-03	1.800E-02	5.522E-02	1.178E-01	2.068E-01	3.227E-01	4.653E-01	5.517E-01	6.475E-01	6.476E-01
kr 97	0.000E+00	6.334E-13	6.345E-13	6.254E-13	6.185E-13	6.145E-13	6.128E-13	6.129E-13	6.141E-13	6.153E-13	0.000E+00
rb 97	0.000E+00	2.160E-09	2.086E-09	1.981E-09	1.888E-09	1.808E-09	1.737E-09	1.676E-09	1.647E-09	1.618E-09	0.000E+00
sr 97	0.000E+00	1.464E-07	1.444E-07	1.398E-07	1.356E-07	1.321E-07	1.290E-07	1.263E-07	1.252E-07	1.240E-07	0.000E+00
y 97	0.000E+00	2.872E-06	2.894E-06	2.854E-06	2.813E-06	2.775E-06	2.742E-06	2.711E-06	2.699E-06	2.684E-06	0.000E+00
zr 97	0.000E+00	5.768E-02	5.879E-02	5.853E-02	5.814E-02	5.776E-02	5.740E-02	5.706E-02	5.693E-02	5.676E-02	0.000E+00
nb 97	0.000E+00	4.114E-03	4.196E-03	4.179E-03	4.154E-03	4.128E-03	4.104E-03	4.081E-03	4.072E-03	4.061E-03	0.000E+00
nb 97m	0.000E+00	5.396E-05	5.500E-05	5.476E-05	5.441E-05	5.406E-05	5.373E-05	5.341E-05	5.329E-05	5.313E-05	0.000E+00
mo 97	0.000E+00	5.597E+00	1.138E+01	1.716E+01	2.292E+01	2.864E+01	3.433E+01	3.998E+01	4.297E+01	4.600E+01	4.606E+01
kr 98	0.000E+00	3.560E-13	3.578E-13	3.538E-13	3.508E-13	3.494E-13	3.492E-13	3.499E-13	3.509E-13	3.518E-13	0.000E+00
rb 98	0.000E+00	9.463E-11	9.414E-11	9.218E-11	9.064E-11	8.960E-11	8.897E-11	8.868E-11	8.872E-11	8.876E-11	0.000E+00
sr 98	0.000E+00	8.825E-08	8.712E-08	8.452E-08	8.224E-08	8.036E-08	7.881E-08	7.752E-08	7.700E-08	7.646E-08	0.000E+00
y 98	0.000E+00	3.978E-07	3.993E-07	3.925E-07	3.860E-07	3.802E-07	3.752E-07	3.707E-07	3.689E-07	3.668E-07	0.000E+00
zr 98	0.000E+00	3.038E-05	3.108E-05	3.103E-05	3.091E-05	3.078E-05	3.065E-05	3.053E-05	3.049E-05	3.043E-05	0.000E+00
nb 98	0.000E+00	2.842E-06	2.909E-06	2.906E-06	2.896E-06	2.885E-06	2.874E-06	2.863E-06	2.860E-06	2.855E-06	0.000E+00
nb 98m	0.000E+00	1.271E-05	1.499E-05	1.657E-05	1.784E-05	1.888E-05	1.975E-05	2.048E-05	2.084E-05	2.117E-05	0.000E+00
mo 98	0.000E+00	5.927E+00	1.202E+01	1.814E+01	2.426E+01	3.036E+01	3.646E+01	4.254E+01	4.575E+01	4.903E+01	4.903E+01
tc 98	0.000E+00	2.131E-06	7.389E-06	1.572E-05	2.708E-05	4.146E-05	5.886E-05	7.929E-05	9.135E-05	1.045E-04	1.045E-04
rb 99	0.000E+00	1.383E-12	1.383E-12	1.360E-12	1.343E-12	1.333E-12	1.328E-12	1.328E-12	1.331E-12	1.334E-12	0.000E+00
sr 99	0.000E+00	1.741E-08	1.690E-08	1.614E-08	1.546E-08	1.489E-08	1.438E-08	1.394E-08	1.374E-08	1.354E-08	0.000E+00
y 99	0.000E+00	6.128E-07	6.089E-07	5.937E-07	5.798E-07	5.679E-07	5.578E-07	5.491E-07	5.455E-07	5.417E-07	0.000E+00
zr 99	0.000E+00	2.058E-06	2.101E-06	2.095E-06	2.085E-06	2.076E-06	2.067E-06	2.060E-06	2.058E-06	2.055E-06	0.000E+00
nb 99	0.000E+00	9.489E-06	9.691E-06	9.668E-06	9.626E-06	9.586E-06	9.550E-06	9.518E-06	9.510E-06	9.496E-06	0.000E+00
nb 99m	0.000E+00	6.534E-05	6.726E-05	6.752E-05	6.756E-05	6.755E-05	6.752E-05	6.746E-05	6.749E-05	6.746E-05	0.000E+00
mo 99	0.000E+00	2.525E-01	2.586E-01	2.585E-01	2.579E-01	2.572E-01	2.565E-01	2.559E-01	2.558E-01	2.555E-01	8.783E-08
tc 99	0.000E+00	6.022E+00	1.243E+01	1.880E+01	2.510E+01	3.134E+01	3.751E+01	4.360E+01	4.681E+01	5.005E+01	5.032E+01
tc 99m	0.000E+00	2.026E-02	2.075E-02	2.075E-02	2.070E-02	2.065E-02	2.061E-02	2.056E-02	2.056E-02	2.054E-02	7.752E-09
ru 99	0.000E+00	1.990E-04	4.175E-04	6.416E-04	8.703E-04	1.104E-03	1.341E-03	1.583E-03	1.712E-03	1.846E-03	1.881E-03
rb100	0.000E+00	6.804E-13	6.834E-13	6.754E-13	6.700E-13	6.677E-13	6.681E-13	6.706E-13	6.732E-13	6.758E-13	0.000E+00
sr100	0.000E+00	1.156E-09	1.155E-09	1.136E-09	1.121E-09	1.112E-09	1.107E-09	1.106E-09	1.108E-09	1.110E-09	0.000E+00
y100	0.000E+00	8.187E-08	8.278E-08	8.205E-08	8.140E-08	8.097E-08	8.075E-08	8.070E-08	8.080E-08	8.088E-08	0.000E+00
zr100	0.000E+00	7.220E-06	7.326E-06	7.268E-06	7.201E-06	7.140E-06	7.086E-06	7.037E-06	7.019E-06	6.996E-06	0.000E+00
nb100	0.000E+00	1.588E-06	1.623E-06	1.620E-06	1.613E-06	1.606E-06	1.599E-06	1.593E-06	1.592E-06	1.589E-06	0.000E+00
nb100m	0.000E+00	1.248E-07	1.495E-07	1.672E-07	1.814E-07	1.934E-07	2.035E-07	2.123E-07	2.166E-07	2.206E-07	0.000E+00
mo100	0.000E+00	6.578E+00	1.338E+01	2.022E+01	2.709E+01	3.397E+01	4.085E+01	4.773E+01	5.138E+01	5.509E+01	5.509E+01

case 1 fission products page 13
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
tc100	0.000E+00	1.595E-07	3.328E-07	5.001E-07	6.649E-07	8.291E-07	9.936E-07	1.159E-06	1.248E-06	1.338E-06	0.000E+00
ru100	0.000E+00	3.019E-02	1.251E-01	2.837E-01	5.051E-01	7.890E-01	1.135E+00	1.544E+00	1.786E+00	2.051E+00	2.051E+00
rb101	0.000E+00	5.252E-15	5.287E-15	5.234E-15	5.197E-15	5.182E-15	5.183E-15	5.198E-15	5.215E-15	5.231E-15	0.000E+00
sr101	0.000E+00	1.935E-10	1.910E-10	1.855E-10	1.809E-10	1.773E-10	1.745E-10	1.725E-10	1.718E-10	1.711E-10	0.000E+00
y101	0.000E+00	3.746E-08	3.668E-08	3.532E-08	3.411E-08	3.310E-08	3.223E-08	3.150E-08	3.117E-08	3.085E-08	0.000E+00
zr101	0.000E+00	1.137E-06	1.154E-06	1.146E-06	1.138E-06	1.131E-06	1.126E-06	1.123E-06	1.122E-06	1.121E-06	0.000E+00
nb101	0.000E+00	6.371E-06	6.560E-06	6.589E-06	6.598E-06	6.604E-06	6.610E-06	6.616E-06	6.625E-06	6.629E-06	0.000E+00
mo101	0.000E+00	8.110E-04	8.379E-04	8.439E-04	8.470E-04	8.494E-04	8.515E-04	8.534E-04	8.550E-04	8.560E-04	0.000E+00
tc101	0.000E+00	7.889E-04	8.150E-04	8.209E-04	8.239E-04	8.263E-04	8.283E-04	8.302E-04	8.318E-04	8.328E-04	0.000E+00
ru101	0.000E+00	5.461E+00	1.112E+01	1.681E+01	2.253E+01	2.826E+01	3.399E+01	3.973E+01	4.276E+01	4.586E+01	4.586E+01
sr102	0.000E+00	5.811E-11	5.664E-11	5.434E-11	5.232E-11	5.061E-11	4.916E-11	4.791E-11	4.735E-11	4.679E-11	0.000E+00
y102	0.000E+00	3.934E-08	3.790E-08	3.590E-08	3.411E-08	3.255E-08	3.116E-08	2.992E-08	2.934E-08	2.875E-08	0.000E+00
zr102	0.000E+00	1.278E-06	1.275E-06	1.248E-06	1.224E-06	1.204E-06	1.188E-06	1.175E-06	1.170E-06	1.165E-06	0.000E+00
nb102	0.000E+00	9.590E-07	9.892E-07	9.955E-07	9.992E-07	1.003E-06	1.006E-06	1.010E-06	1.013E-06	1.015E-06	0.000E+00
mo102	0.000E+00	5.473E-04	5.727E-04	5.829E-04	5.904E-04	5.969E-04	6.027E-04	6.081E-04	6.113E-04	6.140E-04	0.000E+00
tc102	0.000E+00	4.264E-06	4.463E-06	4.543E-06	4.602E-06	4.652E-06	4.698E-06	4.740E-06	4.765E-06	4.786E-06	0.000E+00
tc102m	0.000E+00	1.152E-07	1.426E-07	1.626E-07	1.786E-07	1.918E-07	2.029E-07	2.121E-07	2.167E-07	2.208E-07	0.000E+00
ru102	0.000E+00	4.747E+00	9.763E+00	1.491E+01	2.016E+01	2.549E+01	3.090E+01	3.638E+01	3.931E+01	4.232E+01	4.232E+01
rh102	0.000E+00	3.554E-07	1.217E-06	2.690E-06	4.771E-06	7.436E-06	1.066E-05	1.441E-05	1.661E-05	1.898E-05	1.827E-05
pd102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr103	0.000E+00	1.314E-13	1.325E-13	1.315E-13	1.308E-13	1.307E-13	1.310E-13	1.317E-13	1.323E-13	1.329E-13	0.000E+00
y103	0.000E+00	3.547E-09	3.408E-09	3.221E-09	3.053E-09	2.905E-09	2.774E-09	2.655E-09	2.598E-09	2.542E-09	0.000E+00
zr103	0.000E+00	1.843E-07	1.860E-07	1.841E-07	1.825E-07	1.816E-07	1.812E-07	1.812E-07	1.815E-07	1.818E-07	0.000E+00
nb103	0.000E+00	7.019E-07	7.406E-07	7.595E-07	7.745E-07	7.881E-07	8.009E-07	8.130E-07	8.200E-07	8.263E-07	0.000E+00
mo103	0.000E+00	4.243E-05	4.624E-05	4.857E-05	5.044E-05	5.206E-05	5.350E-05	5.480E-05	5.549E-05	5.612E-05	0.000E+00
tc103	0.000E+00	3.479E-05	3.791E-05	3.981E-05	4.134E-05	4.266E-05	4.383E-05	4.488E-05	4.543E-05	4.594E-05	0.000E+00
ru103	0.000E+00	1.747E+00	2.218E+00	2.408E+00	2.528E+00	2.624E+00	2.706E+00	2.779E+00	2.815E+00	2.850E+00	1.006E+00
rh103	0.000E+00	1.896E+00	5.327E+00	9.132E+00	1.304E+01	1.698E+01	2.091E+01	2.482E+01	2.687E+01	2.895E+01	3.080E+01
rh103m	0.000E+00	1.730E-03	2.197E-03	2.385E-03	2.504E-03	2.598E-03	2.680E-03	2.752E-03	2.789E-03	2.823E-03	9.965E-04
sr104	0.000E+00	5.653E-14	5.703E-14	5.660E-14	5.635E-14	5.634E-14	5.653E-14	5.688E-14	5.716E-14	5.744E-14	0.000E+00
y104	0.000E+00	2.464E-11	2.482E-11	2.462E-11	2.454E-11	2.461E-11	2.480E-11	2.510E-11	2.532E-11	2.554E-11	0.000E+00

zr104 0.000E+00 9.485E-08 9.602E-08 9.555E-08 9.542E-08 9.578E-08 9.655E-08 9.768E-08 9.848E-08 9.930E-08 0.000E+00
nb104 0.000E+00 8.783E-07 9.393E-07 9.756E-07 1.008E-06 1.039E-06 1.070E-06 1.102E-06 1.119E-06 1.136E-06 0.000E+00
mo104 0.000E+00 2.495E-05 2.800E-05 3.007E-05 3.181E-05 3.336E-05 3.477E-05 3.608E-05 3.677E-05 3.743E-05 0.000E+00
tc104 0.000E+00 4.718E-04 5.321E-04 5.735E-04 6.081E-04 6.388E-04 6.667E-04 6.923E-04 7.058E-04 7.186E-04 0.000E+00
ru104 0.000E+00 2.410E+00 5.182E+00 8.207E+00 1.144E+01 1.486E+01 1.844E+01 2.217E+01 2.420E+01 2.631E+01 2.631E+01
rh104 0.000E+00 5.555E-07 1.578E-06 2.688E-06 3.823E-06 4.971E-06 6.131E-06 7.300E-06 7.929E-06 8.567E-06 0.000E+00
rh104m 0.000E+00 2.497E-07 7.094E-07 1.208E-06 1.718E-06 2.234E-06 2.755E-06 3.281E-06 3.564E-06 3.850E-06 0.000E+00
pd104 0.000E+00 2.926E-02 1.778E-01 4.770E-01 9.345E-01 1.553E+00 2.335E+00 3.281E+00 3.850E+00 4.477E+00 4.477E+00
y105 0.000E+00 3.419E-13 3.459E-13 3.445E-13 3.445E-13 3.464E-13 3.497E-13 3.543E-13 3.575E-13 3.606E-13 0.000E+00
zr105 0.000E+00 8.586E-09 8.341E-09 7.974E-09 7.652E-09 7.380E-09 7.148E-09 6.949E-09 6.860E-09 6.771E-09 0.000E+00
nb105 0.000E+00 2.099E-07 2.239E-07 2.324E-07 2.403E-07 2.483E-07 2.566E-07 2.651E-07 2.699E-07 2.747E-07 0.000E+00
mo105 0.000E+00 9.085E-06 1.057E-05 1.164E-05 1.256E-05 1.339E-05 1.415E-05 1.485E-05 1.522E-05 1.558E-05 0.000E+00
tc105 0.000E+00 1.257E-04 1.508E-04 1.694E-04 1.851E-04 1.991E-04 2.118E-04 2.234E-04 2.294E-04 2.352E-04 0.000E+00
ru105 0.000E+00 4.424E-03 5.311E-03 5.971E-03 6.531E-03 7.027E-03 7.476E-03 7.890E-03 8.104E-03 8.309E-03 0.000E+00
rh105 0.000E+00 3.407E-02 4.089E-02 4.598E-02 5.030E-02 5.412E-02 5.758E-02 6.076E-02 6.240E-02 6.397E-02 6.507E-14
rh105m 0.000E+00 3.538E-06 4.248E-06 4.775E-06 5.223E-06 5.620E-06 5.979E-06 6.310E-06 6.481E-06 6.645E-06 0.000E+00
pd105 0.000E+00 1.401E+00 3.174E+00 5.205E+00 7.452E+00 9.884E+00 1.248E+01 1.523E+01 1.674E+01 1.832E+01 1.839E+01
y106 0.000E+00 3.712E-15 3.759E-15 3.748E-15 3.753E-15 3.778E-15 3.821E-15 3.877E-15 3.915E-15 3.954E-15 0.000E+00
zr106 0.000E+00 3.590E-10 3.680E-10 3.720E-10 3.783E-10 3.876E-10 3.993E-10 4.132E-10 4.216E-10 4.304E-10 0.000E+00

case 1 fission products page 14
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge 100.0 d 200.0 d 300.0 d 400.0 d 500.0 d 600.0 d 700.0 d 753.0 d 807.0 d 866.0 d
nb106 0.000E+00 8.904E-09 9.925E-09 1.073E-08 1.155E-08 1.242E-08 1.334E-08 1.432E-08 1.486E-08 1.542E-08 0.000E+00
mo106 0.000E+00 9.900E-07 1.172E-06 1.312E-06 1.438E-06 1.557E-06 1.671E-06 1.783E-06 1.842E-06 1.901E-06 0.000E+00
tc106 0.000E+00 5.251E-06 6.739E-06 7.906E-06 8.922E-06 9.843E-06 1.070E-05 1.150E-05 1.192E-05 1.233E-05 0.000E+00
ru106 0.000E+00 7.123E-01 1.582E+00 2.526E+00 3.498E+00 4.473E+00 5.436E+00 6.376E+00 6.863E+00 7.351E+00 6.585E+00
rh106 0.000E+00 8.521E-07 1.700E-06 2.603E-06 3.529E-06 4.455E-06 5.368E-06 6.259E-06 6.722E-06 7.185E-06 6.112E-06
rh106m 0.000E+00 2.248E-05 2.729E-05 3.050E-05 3.323E-05 3.572E-05 3.805E-05 4.029E-05 4.151E-05 4.268E-05 0.000E+00
pd106 0.000E+00 1.150E-01 3.990E-01 8.692E-01 1.534E+00 2.397E+00 3.456E+00 4.709E+00 5.451E+00 6.260E+00 7.026E+00
ag106 0.000E+00 7.545E-17 1.446E-16 2.028E-16 2.548E-16 3.038E-16 3.521E-16 4.012E-16 4.285E-16 4.568E-16 0.000E+00
y107 0.000E+00 3.521E-17 3.564E-17 3.552E-17 3.556E-17 3.579E-17 3.617E-17 3.668E-17 3.703E-17 3.738E-17 0.000E+00
zr107 0.000E+00 9.697E-13 9.876E-13 9.934E-13 1.007E-12 1.029E-12 1.059E-12 1.095E-12 1.117E-12 1.140E-12 0.000E+00
nb107 0.000E+00 1.170E-09 1.280E-09 1.373E-09 1.476E-09 1.593E-09 1.724E-09 1.866E-09 1.948E-09 2.032E-09 0.000E+00
mo107 0.000E+00 1.396E-07 1.688E-07 1.924E-07 2.144E-07 2.359E-07 2.573E-07 2.788E-07 2.904E-07 3.021E-07 0.000E+00

tc107	0.000E+00	1.517E-06	2.164E-06	2.690E-06	3.151E-06	3.572E-06	3.965E-06	4.337E-06	4.531E-06	4.721E-06	0.000E+00
ru107	0.000E+00	1.900E-05	2.773E-05	3.478E-05	4.091E-05	4.643E-05	5.151E-05	5.626E-05	5.872E-05	6.111E-05	0.000E+00
rh107	0.000E+00	1.102E-04	1.608E-04	2.018E-04	2.374E-04	2.694E-04	2.989E-04	3.264E-04	3.407E-04	3.546E-04	0.000E+00
pd107	0.000E+00	3.830E-01	1.015E+00	1.850E+00	2.857E+00	4.019E+00	5.319E+00	6.749E+00	7.555E+00	8.411E+00	8.411E+00
pd107m	0.000E+00	1.232E-10	4.269E-10	9.196E-10	1.612E-09	2.512E-09	3.623E-09	4.950E-09	5.745E-09	6.616E-09	0.000E+00
ag107	0.000E+00	4.993E-09	2.487E-08	6.609E-08	1.340E-07	2.331E-07	3.674E-07	5.407E-07	6.495E-07	7.730E-07	9.179E-07
zr108	0.000E+00	6.274E-14	6.379E-14	6.404E-14	6.477E-14	6.604E-14	6.778E-14	6.990E-14	7.122E-14	7.259E-14	0.000E+00
nb108	0.000E+00	1.183E-11	1.251E-11	1.312E-11	1.393E-11	1.496E-11	1.620E-11	1.762E-11	1.844E-11	1.930E-11	0.000E+00
mo108	0.000E+00	7.546E-09	8.807E-09	9.927E-09	1.111E-08	1.241E-08	1.381E-08	1.532E-08	1.616E-08	1.703E-08	0.000E+00
tc108	0.000E+00	1.132E-07	1.599E-07	1.992E-07	2.354E-07	2.701E-07	3.040E-07	3.375E-07	3.553E-07	3.732E-07	0.000E+00
ru108	0.000E+00	1.273E-05	1.943E-05	2.494E-05	2.978E-05	3.419E-05	3.831E-05	4.220E-05	4.423E-05	4.622E-05	0.000E+00
rh108	0.000E+00	7.948E-07	1.216E-06	1.562E-06	1.866E-06	2.142E-06	2.400E-06	2.644E-06	2.770E-06	2.894E-06	0.000E+00
rh108m	0.000E+00	2.492E-07	4.394E-07	5.908E-07	7.162E-07	8.227E-07	9.147E-07	9.951E-07	1.035E-06	1.072E-06	0.000E+00
pd108	0.000E+00	2.062E-01	5.763E-01	1.081E+00	1.703E+00	2.428E+00	3.249E+00	4.159E+00	4.676E+00	5.225E+00	5.225E+00
ag108	0.000E+00	1.276E-12	3.486E-12	6.346E-12	9.752E-12	1.364E-11	1.796E-11	2.269E-11	2.537E-11	2.818E-11	1.065E-14
ag108m	0.000E+00	1.577E-08	9.170E-08	2.625E-07	5.556E-07	9.942E-07	1.599E-06	2.387E-06	2.885E-06	3.453E-06	3.450E-06
cd108	0.000E+00	2.328E-08	1.189E-07	3.181E-07	6.459E-07	1.124E-06	1.770E-06	2.602E-06	3.124E-06	3.717E-06	3.717E-06
zr109	0.000E+00	1.764E-17	1.787E-17	1.782E-17	1.786E-17	1.800E-17	1.823E-17	1.853E-17	1.872E-17	1.892E-17	0.000E+00
nb109	0.000E+00	6.976E-13	7.279E-13	7.532E-13	7.886E-13	8.351E-13	8.917E-13	9.569E-13	9.952E-13	1.035E-12	0.000E+00
mo109	0.000E+00	7.720E-10	8.910E-10	9.969E-10	1.111E-09	1.236E-09	1.373E-09	1.520E-09	1.602E-09	1.688E-09	0.000E+00
tc109	0.000E+00	9.651E-09	1.414E-08	1.791E-08	2.135E-08	2.461E-08	2.777E-08	3.087E-08	3.251E-08	3.416E-08	0.000E+00
ru109	0.000E+00	1.034E-06	1.680E-06	2.206E-06	2.661E-06	3.067E-06	3.438E-06	3.781E-06	3.957E-06	4.128E-06	0.000E+00
rh109	0.000E+00	2.737E-06	4.509E-06	5.947E-06	7.181E-06	8.275E-06	9.266E-06	1.018E-05	1.064E-05	1.109E-05	0.000E+00
rh109m	0.000E+00	8.553E-07	1.409E-06	1.859E-06	2.244E-06	2.586E-06	2.895E-06	3.180E-06	3.325E-06	3.465E-06	0.000E+00
pd109	0.000E+00	1.707E-03	2.828E-03	3.751E-03	4.555E-03	5.278E-03	5.943E-03	6.564E-03	6.885E-03	7.199E-03	0.000E+00
pd109m	0.000E+00	2.572E-08	4.867E-08	6.842E-08	8.617E-08	1.026E-07	1.182E-07	1.332E-07	1.412E-07	1.491E-07	0.000E+00
ag109	0.000E+00	1.318E-01	4.014E-01	7.790E-01	1.244E+00	1.781E+00	2.379E+00	3.030E+00	3.393E+00	3.775E+00	3.783E+00
ag109m	0.000E+00	1.370E-06	2.270E-06	3.011E-06	3.656E-06	4.236E-06	4.770E-06	5.269E-06	5.527E-06	5.779E-06	2.037E-15
cd109	0.000E+00	2.745E-11	1.072E-10	2.407E-10	4.377E-10	7.130E-10	1.084E-09	1.572E-09	1.885E-09	2.246E-09	2.056E-09
nb110	0.000E+00	1.400E-14	1.431E-14	1.450E-14	1.486E-14	1.540E-14	1.610E-14	1.693E-14	1.743E-14	1.796E-14	0.000E+00
mo110	0.000E+00	2.212E-10	2.337E-10	2.448E-10	2.596E-10	2.784E-10	3.010E-10	3.267E-10	3.417E-10	3.574E-10	0.000E+00
tc110	0.000E+00	1.107E-09	1.382E-09	1.624E-09	1.868E-09	2.124E-09	2.393E-09	2.675E-09	2.830E-09	2.990E-09	0.000E+00
ru110	0.000E+00	1.701E-07	2.409E-07	2.995E-07	3.523E-07	4.019E-07	4.494E-07	4.955E-07	5.199E-07	5.441E-07	0.000E+00
rh110	0.000E+00	5.405E-09	8.884E-09	1.167E-08	1.401E-08	1.604E-08	1.783E-08	1.944E-08	2.025E-08	2.102E-08	0.000E+00
rh110m	0.000E+00	3.719E-07	5.379E-07	6.743E-07	7.957E-07	9.082E-07	1.015E-06	1.117E-06	1.170E-06	1.223E-06	0.000E+00
pd110	0.000E+00	6.755E-02	1.808E-01	3.317E-01	5.153E-01	7.286E-01	9.694E-01	1.236E+00	1.387E+00	1.549E+00	1.549E+00
ag110	0.000E+00	2.206E-08	6.791E-08	1.309E-07	2.082E-07	2.977E-07	3.982E-07	5.088E-07	5.717E-07	6.380E-07	1.491E-10
ag110m	0.000E+00	8.148E-05	4.397E-04	1.174E-03	2.325E-03	3.904E-03	5.906E-03	8.316E-03	9.753E-03	1.133E-02	9.616E-03

case 1 fission products page 15
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
cd110	0.000E+00	2.203E-03	1.284E-02	3.682E-02	7.808E-02	1.399E-01	2.253E-01	3.369E-01	4.074E-01	4.879E-01	4.896E-01
nb111	0.000E+00	1.719E-16	1.740E-16	1.736E-16	1.741E-16	1.756E-16	1.780E-16	1.811E-16	1.832E-16	1.853E-16	0.000E+00
mo111	0.000E+00	4.341E-12	4.460E-12	4.537E-12	4.665E-12	4.848E-12	5.081E-12	5.355E-12	5.520E-12	5.692E-12	0.000E+00
tc111	0.000E+00	7.080E-10	7.964E-10	8.737E-10	9.587E-10	1.054E-09	1.160E-09	1.274E-09	1.339E-09	1.407E-09	0.000E+00
ru111	0.000E+00	7.314E-09	9.410E-09	1.115E-08	1.277E-08	1.434E-08	1.591E-08	1.747E-08	1.831E-08	1.916E-08	0.000E+00
rh111	0.000E+00	8.933E-08	1.254E-07	1.547E-07	1.805E-07	2.043E-07	2.266E-07	2.479E-07	2.590E-07	2.699E-07	0.000E+00
pd111	0.000E+00	1.198E-05	1.696E-05	2.100E-05	2.456E-05	2.781E-05	3.086E-05	3.374E-05	3.525E-05	3.673E-05	0.000E+00
pd111m	0.000E+00	6.367E-06	1.054E-05	1.385E-05	1.660E-05	1.894E-05	2.096E-05	2.274E-05	2.363E-05	2.446E-05	0.000E+00
ag111	0.000E+00	5.509E-03	7.815E-03	9.685E-03	1.133E-02	1.283E-02	1.423E-02	1.556E-02	1.613E-02	1.681E-02	6.972E-05
ag111m	0.000E+00	5.530E-07	7.840E-07	9.715E-07	1.136E-06	1.287E-06	1.428E-06	1.561E-06	1.631E-06	1.699E-06	0.000E+00
cd111	0.000E+00	3.605E-02	9.831E-02	1.797E-01	2.776E-01	3.903E-01	5.165E-01	6.556E-01	7.336E-01	8.163E-01	8.331E-01
cd111m	0.000E+00	7.833E-11	4.458E-10	1.260E-09	2.651E-09	4.738E-09	7.632E-09	1.144E-08	1.388E-08	1.667E-08	0.000E+00
nb112	0.000E+00	3.283E-18	3.318E-18	3.297E-18	3.287E-18	3.290E-18	3.303E-18	3.325E-18	3.342E-18	3.359E-18	0.000E+00
mo112	0.000E+00	1.540E-12	1.561E-12	1.560E-12	1.568E-12	1.587E-12	1.615E-12	1.650E-12	1.673E-12	1.697E-12	0.000E+00
tc112	0.000E+00	3.792E-11	3.978E-11	4.114E-11	4.285E-11	4.499E-11	4.754E-11	5.042E-11	5.211E-11	5.386E-11	0.000E+00
ru112	0.000E+00	8.391E-09	9.546E-09	1.045E-08	1.131E-08	1.219E-08	1.310E-08	1.403E-08	1.455E-08	1.507E-08	0.000E+00
rh112	0.000E+00	6.992E-09	8.695E-09	1.003E-08	1.122E-08	1.232E-08	1.336E-08	1.437E-08	1.490E-08	1.543E-08	0.000E+00
pd112	0.000E+00	4.145E-04	5.309E-04	6.222E-04	7.019E-04	7.744E-04	8.418E-04	9.055E-04	9.388E-04	9.713E-04	5.397E-24
ag112	0.000E+00	6.193E-05	7.937E-05	9.305E-05	1.050E-04	1.158E-04	1.259E-04	1.355E-04	1.404E-04	1.453E-04	9.461E-25
cd112	0.000E+00	2.767E-02	6.577E-02	1.120E-01	1.653E-01	2.251E-01	2.909E-01	3.623E-01	4.024E-01	4.448E-01	4.459E-01
mo113	0.000E+00	7.553E-15	7.629E-15	7.583E-15	7.565E-15	7.582E-15	7.628E-15	7.698E-15	7.749E-15	7.801E-15	0.000E+00
tc113	0.000E+00	1.752E-11	1.776E-11	1.777E-11	1.793E-11	1.826E-11	1.872E-11	1.930E-11	1.967E-11	2.005E-11	0.000E+00
ru113	0.000E+00	3.210E-09	3.340E-09	3.418E-09	3.515E-09	3.640E-09	3.788E-09	3.958E-09	4.059E-09	4.163E-09	0.000E+00
rh113	0.000E+00	2.923E-09	3.249E-09	3.486E-09	3.708E-09	3.929E-09	4.153E-09	4.381E-09	4.507E-09	4.633E-09	0.000E+00
pd113	0.000E+00	4.118E-07	4.759E-07	5.234E-07	5.657E-07	6.054E-07	6.435E-07	6.806E-07	7.005E-07	7.201E-07	0.000E+00
ag113	0.000E+00	8.291E-05	9.595E-05	1.056E-04	1.143E-04	1.223E-04	1.301E-04	1.376E-04	1.416E-04	1.456E-04	0.000E+00
ag113m	0.000E+00	5.805E-08	6.767E-08	7.484E-08	8.117E-08	8.707E-08	9.268E-08	9.810E-08	1.010E-07	1.038E-07	0.000E+00
cd113	0.000E+00	6.783E-03	8.038E-03	8.984E-03	9.811E-03	1.056E-02	1.124E-02	1.188E-02	1.220E-02	1.251E-02	1.266E-02
cd113m	0.000E+00	4.012E-04	8.790E-04	1.415E-03	2.002E-03	2.638E-03	3.320E-03	4.049E-03	4.454E-03	4.880E-03	4.843E-03
in113	0.000E+00	2.609E-06	1.110E-05	2.633E-05	4.896E-05	7.961E-05	1.189E-04	1.673E-04	1.968E-04	2.298E-04	2.683E-04
in113m	0.000E+00	9.978E-15	1.885E-14	2.589E-14	3.165E-14	3.645E-14	4.052E-14	4.400E-14	4.568E-14	4.724E-14	0.000E+00

mo114	0.000E+00	6.449E-15	6.512E-15	6.466E-15	6.439E-15	6.438E-15	6.458E-15	6.495E-15	6.525E-15	6.555E-15	0.000E+00
tc114	0.000E+00	9.333E-13	9.427E-13	9.380E-13	9.382E-13	9.442E-13	9.552E-13	9.702E-13	9.804E-13	9.909E-13	0.000E+00
ru114	0.000E+00	3.780E-09	3.875E-09	3.904E-09	3.948E-09	4.012E-09	4.096E-09	4.197E-09	4.259E-09	4.322E-09	0.000E+00
rh114	0.000E+00	3.229E-09	3.545E-09	3.758E-09	3.949E-09	4.131E-09	4.310E-09	4.487E-09	4.584E-09	4.679E-09	0.000E+00
pd114	0.000E+00	5.528E-07	6.434E-07	7.090E-07	7.645E-07	8.139E-07	8.589E-07	9.006E-07	9.223E-07	9.431E-07	0.000E+00
ag114	0.000E+00	1.768E-08	2.069E-08	2.288E-08	2.473E-08	2.637E-08	2.785E-08	2.923E-08	2.994E-08	3.062E-08	0.000E+00
cd114	0.000E+00	3.851E-02	9.142E-02	1.512E-01	2.166E-01	2.871E-01	3.623E-01	4.419E-01	4.858E-01	5.317E-01	5.317E-01
in114	0.000E+00	1.311E-13	6.751E-13	1.760E-12	3.466E-12	5.863E-12	9.021E-12	1.301E-11	1.549E-11	1.829E-11	5.443E-12
in114m	0.000E+00	3.719E-09	2.380E-08	6.723E-08	1.379E-07	2.390E-07	3.737E-07	5.450E-07	6.519E-07	7.729E-07	3.384E-07
sn114	0.000E+00	3.398E-09	3.341E-08	1.301E-07	3.418E-07	7.232E-07	1.334E-06	2.242E-06	2.867E-06	3.621E-06	4.035E-06
mo115	0.000E+00	9.677E-18	9.775E-18	9.703E-18	9.654E-18	9.637E-18	9.646E-18	9.676E-18	9.706E-18	9.734E-18	0.000E+00
tc115	0.000E+00	4.581E-14	4.622E-14	4.586E-14	4.566E-14	4.565E-14	4.581E-14	4.609E-14	4.633E-14	4.656E-14	0.000E+00
ru115	0.000E+00	1.043E-10	1.055E-10	1.049E-10	1.048E-10	1.053E-10	1.062E-10	1.075E-10	1.084E-10	1.094E-10	0.000E+00
rh115	0.000E+00	7.940E-09	8.350E-09	8.569E-09	8.774E-09	8.990E-09	9.220E-09	9.461E-09	9.601E-09	9.740E-09	0.000E+00
pd115	0.000E+00	1.047E-07	1.166E-07	1.246E-07	1.314E-07	1.375E-07	1.431E-07	1.483E-07	1.511E-07	1.538E-07	0.000E+00
ag115	0.000E+00	2.540E-06	2.855E-06	3.070E-06	3.251E-06	3.413E-06	3.560E-06	3.696E-06	3.768E-06	3.836E-06	0.000E+00
ag115m	0.000E+00	1.529E-08	1.742E-08	1.890E-08	2.014E-08	2.123E-08	2.222E-08	2.312E-08	2.359E-08	2.404E-08	0.000E+00
cd115	0.000E+00	5.487E-04	6.204E-04	6.701E-04	7.122E-04	7.498E-04	7.843E-04	8.164E-04	8.333E-04	8.494E-04	9.109E-12
cd115m	0.000E+00	3.557E-04	4.855E-04	5.527E-04	6.006E-04	6.408E-04	6.769E-04	7.102E-04	7.272E-04	7.439E-04	2.974E-04

case 1 fission products page 16
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d	
in115	0.000E+00	1.417E-02	2.970E-02	4.524E-02	6.050E-02	7.532E-02	8.962E-02	1.033E-01	1.103E-01	1.173E-01	1.186E-01
in115m	0.000E+00	4.604E-05	5.205E-05	5.622E-05	5.975E-05	6.291E-05	6.580E-05	6.849E-05	6.991E-05	7.126E-05	1.385E-10
sn115	0.000E+00	7.683E-04	1.678E-03	2.671E-03	3.729E-03	4.845E-03	6.012E-03	7.226E-03	7.886E-03	8.570E-03	8.616E-03
tc116	0.000E+00	8.491E-15	8.559E-15	8.482E-15	8.429E-15	8.408E-15	8.413E-15	8.439E-15	8.467E-15	8.493E-15	0.000E+00
ru116	0.000E+00	7.225E-11	7.270E-11	7.192E-11	7.136E-11	7.110E-11	7.108E-11	7.125E-11	7.147E-11	7.168E-11	0.000E+00
rh116	0.000E+00	5.400E-10	5.574E-10	5.623E-10	5.665E-10	5.712E-10	5.765E-10	5.823E-10	5.860E-10	5.895E-10	0.000E+00
pd116	0.000E+00	4.599E-08	5.002E-08	5.245E-08	5.439E-08	5.605E-08	5.751E-08	5.882E-08	5.950E-08	6.013E-08	0.000E+00
ag116	0.000E+00	6.339E-07	6.984E-07	7.390E-07	7.716E-07	7.993E-07	8.234E-07	8.447E-07	8.558E-07	8.658E-07	0.000E+00
ag116m	0.000E+00	3.334E-09	4.188E-09	4.819E-09	5.328E-09	5.752E-09	6.110E-09	6.417E-09	6.567E-09	6.704E-09	0.000E+00
cd116	0.000E+00	2.420E-02	5.165E-02	8.130E-02	1.127E-01	1.456E-01	1.797E-01	2.150E-01	2.340E-01	2.537E-01	2.537E-01
in116	0.000E+00	8.128E-10	1.722E-09	2.607E-09	3.472E-09	4.317E-09	5.143E-09	5.949E-09	6.373E-09	6.795E-09	0.000E+00
in116m	0.000E+00	7.044E-07	1.493E-06	2.260E-06	3.009E-06	3.741E-06	4.457E-06	5.156E-06	5.524E-06	5.890E-06	0.000E+00

sn116	0.000E+00	8.135E-04	3.421E-03	7.835E-03	1.403E-02	2.196E-02	3.160E-02	4.290E-02	4.956E-02	5.679E-02	5.680E-02
tc117	0.000E+00	1.367E-16	1.381E-16	1.371E-16	1.364E-16	1.361E-16	1.363E-16	1.367E-16	1.371E-16	1.375E-16	0.000E+00
ru117	0.000E+00	2.238E-12	2.257E-12	2.239E-12	2.227E-12	2.223E-12	2.227E-12	2.236E-12	2.245E-12	2.254E-12	0.000E+00
rh117	0.000E+00	2.598E-10	2.686E-10	2.716E-10	2.743E-10	2.774E-10	2.809E-10	2.846E-10	2.870E-10	2.892E-10	0.000E+00
pd117	0.000E+00	1.113E-08	1.233E-08	1.311E-08	1.375E-08	1.430E-08	1.478E-08	1.522E-08	1.545E-08	1.567E-08	0.000E+00
ag117	0.000E+00	1.137E-07	1.346E-07	1.495E-07	1.617E-07	1.721E-07	1.811E-07	1.890E-07	1.930E-07	1.966E-07	0.000E+00
ag117m	0.000E+00	8.339E-09	9.870E-09	1.097E-08	1.186E-08	1.262E-08	1.328E-08	1.386E-08	1.415E-08	1.442E-08	0.000E+00
cd117	0.000E+00	2.431E-05	2.884E-05	3.209E-05	3.475E-05	3.701E-05	3.897E-05	4.068E-05	4.155E-05	4.235E-05	0.000E+00
cd117m	0.000E+00	6.729E-06	8.273E-06	9.407E-06	1.033E-05	1.111E-05	1.178E-05	1.237E-05	1.266E-05	1.292E-05	0.000E+00
in117	0.000E+00	5.147E-06	6.170E-06	6.910E-06	7.514E-06	8.026E-06	8.468E-06	8.855E-06	9.049E-06	9.228E-06	0.000E+00
in117m	0.000E+00	1.731E-05	2.054E-05	2.286E-05	2.475E-05	2.636E-05	2.776E-05	2.898E-05	2.959E-05	3.016E-05	0.000E+00
sn117	0.000E+00	1.753E-02	3.923E-02	6.398E-02	9.122E-02	1.205E-01	1.516E-01	1.843E-01	2.021E-01	2.207E-01	2.208E-01
sn117m	0.000E+00	7.496E-06	9.889E-06	1.208E-05	1.429E-05	1.658E-05	1.897E-05	2.149E-05	2.288E-05	2.435E-05	1.213E-06
tc118	0.000E+00	2.204E-18	2.226E-18	2.209E-18	2.197E-18	2.193E-18	2.194E-18	2.200E-18	2.206E-18	2.212E-18	0.000E+00
ru118	0.000E+00	6.999E-13	7.064E-13	7.009E-13	6.974E-13	6.966E-13	6.979E-13	7.009E-13	7.036E-13	7.062E-13	0.000E+00
rh118	0.000E+00	1.660E-11	1.691E-11	1.691E-11	1.694E-11	1.705E-11	1.720E-11	1.740E-11	1.754E-11	1.767E-11	0.000E+00
pd118	0.000E+00	3.731E-09	3.968E-09	4.102E-09	4.217E-09	4.326E-09	4.432E-09	4.536E-09	4.595E-09	4.651E-09	0.000E+00
ag118	0.000E+00	7.112E-09	7.835E-09	8.298E-09	8.675E-09	9.002E-09	9.293E-09	9.555E-09	9.692E-09	9.820E-09	0.000E+00
ag118m	0.000E+00	2.683E-09	2.956E-09	3.130E-09	3.273E-09	3.396E-09	3.506E-09	3.604E-09	3.656E-09	3.704E-09	0.000E+00
cd118	0.000E+00	9.283E-06	1.044E-05	1.121E-05	1.184E-05	1.238E-05	1.285E-05	1.327E-05	1.349E-05	1.369E-05	0.000E+00
in118	0.000E+00	1.539E-08	1.731E-08	1.859E-08	1.964E-08	2.054E-08	2.132E-08	2.202E-08	2.237E-08	2.270E-08	0.000E+00
in118m	0.000E+00	4.685E-10	7.092E-10	8.958E-10	1.048E-09	1.174E-09	1.281E-09	1.372E-09	1.416E-09	1.457E-09	0.000E+00
sn118	0.000E+00	1.727E-02	3.708E-02	5.865E-02	8.166E-02	1.059E-01	1.312E-01	1.574E-01	1.716E-01	1.863E-01	1.863E-01
ru119	0.000E+00	2.758E-14	2.780E-14	2.754E-14	2.734E-14	2.722E-14	2.718E-14	2.719E-14	2.724E-14	2.728E-14	0.000E+00
rh119	0.000E+00	9.970E-12	1.003E-11	9.903E-12	9.793E-12	9.711E-12	9.650E-12	9.606E-12	9.597E-12	9.583E-12	0.000E+00
pd119	0.000E+00	1.459E-09	1.496E-09	1.497E-09	1.495E-09	1.492E-09	1.489E-09	1.485E-09	1.485E-09	1.483E-09	0.000E+00
ag119	0.000E+00	5.158E-09	5.594E-09	5.846E-09	6.040E-09	6.197E-09	6.326E-09	6.433E-09	6.488E-09	6.534E-09	0.000E+00
cd119	0.000E+00	3.759E-07	4.178E-07	4.448E-07	4.663E-07	4.843E-07	4.998E-07	5.133E-07	5.201E-07	5.263E-07	0.000E+00
cd119m	0.000E+00	1.259E-07	1.448E-07	1.579E-07	1.687E-07	1.780E-07	1.861E-07	1.933E-07	1.970E-07	2.005E-07	0.000E+00
in119	0.000E+00	1.806E-07	2.069E-07	2.251E-07	2.400E-07	2.529E-07	2.643E-07	2.745E-07	2.797E-07	2.846E-07	0.000E+00
in119m	0.000E+00	2.268E-06	2.522E-06	2.686E-06	2.817E-06	2.927E-06	3.022E-06	3.104E-06	3.146E-06	3.184E-06	0.000E+00
sn119	0.000E+00	1.846E-02	3.961E-02	6.262E-02	8.714E-02	1.129E-01	1.398E-01	1.676E-01	1.827E-01	1.983E-01	1.984E-01
sn119m	0.000E+00	6.196E-05	1.296E-04	1.998E-04	2.713E-04	3.438E-04	4.171E-04	4.911E-04	5.307E-04	5.713E-04	4.969E-04
ru120	0.000E+00	6.195E-15	6.252E-15	6.201E-15	6.167E-15	6.153E-15	6.158E-15	6.176E-15	6.195E-15	6.213E-15	0.000E+00
rh120	0.000E+00	7.917E-13	7.969E-13	7.889E-13	7.836E-13	7.816E-13	7.825E-13	7.857E-13	7.888E-13	7.919E-13	0.000E+00
pd120	0.000E+00	1.723E-09	1.745E-09	1.735E-09	1.728E-09	1.727E-09	1.732E-09	1.741E-09	1.748E-09	1.756E-09	0.000E+00
ag120	0.000E+00	1.992E-09	2.114E-09	2.179E-09	2.233E-09	2.281E-09	2.327E-09	2.370E-09	2.395E-09	2.417E-09	0.000E+00
cd120	0.000E+00	1.637E-07	1.820E-07	1.939E-07	2.036E-07	2.118E-07	2.190E-07	2.254E-07	2.287E-07	2.317E-07	0.000E+00

case 1 fission products page 17
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
in120	0.000E+00	1.002E-08	1.117E-08	1.192E-08	1.252E-08	1.304E-08	1.349E-08	1.389E-08	1.410E-08	1.429E-08	0.000E+00
in120m	0.000E+00	1.424E-09	1.950E-09	2.350E-09	2.675E-09	2.945E-09	3.173E-09	3.368E-09	3.462E-09	3.550E-09	0.000E+00
sn120	0.000E+00	1.852E-02	3.956E-02	6.231E-02	8.645E-02	1.118E-01	1.381E-01	1.653E-01	1.800E-01	1.953E-01	1.953E-01
rh121	0.000E+00	3.175E-13	3.199E-13	3.170E-13	3.149E-13	3.141E-13	3.143E-13	3.153E-13	3.163E-13	3.173E-13	0.000E+00
pd121	0.000E+00	1.207E-10	1.218E-10	1.207E-10	1.199E-10	1.196E-10	1.197E-10	1.201E-10	1.205E-10	1.209E-10	0.000E+00
ag121	0.000E+00	1.051E-09	1.098E-09	1.118E-09	1.134E-09	1.150E-09	1.165E-09	1.181E-09	1.190E-09	1.199E-09	0.000E+00
cd121	0.000E+00	4.597E-08	5.054E-08	5.341E-08	5.573E-08	5.771E-08	5.944E-08	6.098E-08	6.178E-08	6.251E-08	0.000E+00
in121	0.000E+00	4.772E-09	6.041E-09	6.981E-09	7.742E-09	8.376E-09	8.913E-09	9.372E-09	9.597E-09	9.804E-09	0.000E+00
in121m	0.000E+00	8.018E-07	8.833E-07	9.349E-07	9.765E-07	1.012E-06	1.043E-06	1.071E-06	1.085E-06	1.098E-06	0.000E+00
sn121	0.000E+00	3.495E-04	3.880E-04	4.129E-04	4.330E-04	4.501E-04	4.651E-04	4.782E-04	4.850E-04	4.912E-04	8.490E-08
sn121m	0.000E+00	1.300E-04	3.072E-04	5.204E-04	7.624E-04	1.028E-03	1.313E-03	1.615E-03	1.781E-03	1.953E-03	1.949E-03
sb121	0.000E+00	1.991E-02	4.260E-02	6.690E-02	9.247E-02	1.191E-01	1.465E-01	1.747E-01	1.898E-01	2.055E-01	2.060E-01
rh122	0.000E+00	1.517E-14	1.529E-14	1.515E-14	1.505E-14	1.501E-14	1.502E-14	1.506E-14	1.511E-14	1.515E-14	0.000E+00
pd122	0.000E+00	8.826E-11	8.892E-11	8.804E-11	8.739E-11	8.709E-11	8.706E-11	8.726E-11	8.751E-11	8.775E-11	0.000E+00
ag122	0.000E+00	3.322E-10	3.464E-10	3.521E-10	3.568E-10	3.613E-10	3.658E-10	3.703E-10	3.730E-10	3.755E-10	0.000E+00
cd122	0.000E+00	1.908E-08	2.109E-08	2.237E-08	2.339E-08	2.426E-08	2.500E-08	2.566E-08	2.600E-08	2.630E-08	0.000E+00
in122	0.000E+00	5.838E-09	6.525E-09	6.975E-09	7.335E-09	7.639E-09	7.900E-09	8.128E-09	8.244E-09	8.350E-09	0.000E+00
in122m	0.000E+00	2.594E-09	3.358E-09	3.928E-09	4.390E-09	4.774E-09	5.098E-09	5.374E-09	5.509E-09	5.633E-09	0.000E+00
sn122	0.000E+00	2.329E-02	5.013E-02	7.945E-02	1.107E-01	1.437E-01	1.780E-01	2.135E-01	2.328E-01	2.527E-01	2.527E-01
sb122	0.000E+00	4.705E-06	1.018E-05	1.588E-05	2.185E-05	2.810E-05	3.462E-05	4.141E-05	4.515E-05	4.901E-05	1.297E-11
sb122m	0.000E+00	5.120E-10	1.106E-09	1.725E-09	2.372E-09	3.049E-09	3.756E-09	4.492E-09	4.897E-09	5.315E-09	0.000E+00
te122	0.000E+00	5.552E-05	2.397E-04	5.620E-04	1.030E-03	1.649E-03	2.428E-03	3.372E-03	3.941E-03	4.572E-03	4.620E-03
rh123	0.000E+00	1.613E-15	1.627E-15	1.614E-15	1.605E-15	1.602E-15	1.603E-15	1.608E-15	1.614E-15	1.619E-15	0.000E+00
pd123	0.000E+00	3.232E-12	3.258E-12	3.228E-12	3.207E-12	3.200E-12	3.203E-12	3.215E-12	3.226E-12	3.237E-12	0.000E+00
ag123	0.000E+00	1.125E-10	1.153E-10	1.158E-10	1.163E-10	1.170E-10	1.180E-10	1.192E-10	1.200E-10	1.207E-10	0.000E+00
cd123	0.000E+00	2.219E-08	2.404E-08	2.515E-08	2.606E-08	2.685E-08	2.756E-08	2.821E-08	2.856E-08	2.888E-08	0.000E+00
in123	0.000E+00	1.634E-08	1.847E-08	1.990E-08	2.106E-08	2.205E-08	2.291E-08	2.367E-08	2.406E-08	2.442E-08	0.000E+00
in123m	0.000E+00	3.647E-08	4.094E-08	4.392E-08	4.634E-08	4.841E-08	5.022E-08	5.181E-08	5.264E-08	5.339E-08	0.000E+00
sn123	0.000E+00	1.734E-03	2.888E-03	3.643E-03	4.141E-03	4.478E-03	4.709E-03	4.871E-03	4.937E-03	4.993E-03	3.638E-03
sn123m	0.000E+00	9.285E-06	1.032E-05	1.098E-05	1.152E-05	1.198E-05	1.237E-05	1.272E-05	1.289E-05	1.306E-05	0.000E+00
sb123	0.000E+00	2.227E-02	4.804E-02	7.610E-02	1.059E-01	1.370E-01	1.693E-01	2.025E-01	2.204E-01	2.388E-01	2.402E-01

te123	0.000E+00	3.204E-08	2.768E-07	9.579E-07	2.291E-06	4.481E-06	7.720E-06	1.219E-05	1.511E-05	1.852E-05	1.981E-05
te123m	0.000E+00	1.399E-08	1.057E-07	3.276E-07	7.136E-07	1.289E-06	2.074E-06	3.088E-06	3.723E-06	4.445E-06	3.158E-06
pd124	0.000E+00	3.122E-12	3.138E-12	3.100E-12	3.072E-12	3.056E-12	3.050E-12	3.051E-12	3.057E-12	3.063E-12	0.000E+00
ag124	0.000E+00	5.970E-11	6.103E-11	6.105E-11	6.105E-11	6.113E-11	6.130E-11	6.155E-11	6.175E-11	6.193E-11	0.000E+00
cd124	0.000E+00	3.761E-09	4.043E-09	4.201E-09	4.324E-09	4.426E-09	4.514E-09	4.591E-09	4.631E-09	4.667E-09	0.000E+00
in124	0.000E+00	2.059E-08	2.320E-08	2.493E-08	2.630E-08	2.744E-08	2.840E-08	2.923E-08	2.965E-08	3.002E-08	0.000E+00
sn124	0.000E+00	3.824E-02	8.280E-02	1.318E-01	1.843E-01	2.396E-01	2.974E-01	3.573E-01	3.898E-01	4.233E-01	4.233E-01
sb124	0.000E+00	4.170E-05	1.184E-04	2.108E-04	3.120E-04	4.195E-04	5.325E-04	6.505E-04	7.150E-04	7.821E-04	3.965E-04
sb124m	0.000E+00	1.272E-10	1.977E-10	2.583E-10	3.131E-10	3.640E-10	4.120E-10	4.581E-10	4.822E-10	5.062E-10	0.000E+00
te124	0.000E+00	2.088E-05	1.136E-04	3.056E-04	6.104E-04	1.037E-03	1.591E-03	2.279E-03	2.701E-03	3.171E-03	3.557E-03
pd125	0.000E+00	2.422E-13	2.441E-13	2.416E-13	2.396E-13	2.384E-13	2.378E-13	2.376E-13	2.379E-13	2.381E-13	0.000E+00
ag125	0.000E+00	3.787E-11	3.855E-11	3.841E-11	3.823E-11	3.809E-11	3.798E-11	3.789E-11	3.788E-11	3.784E-11	0.000E+00
cd125	0.000E+00	4.148E-09	4.460E-09	4.630E-09	4.757E-09	4.859E-09	4.940E-09	5.005E-09	5.038E-09	5.065E-09	0.000E+00
in125	0.000E+00	8.220E-09	9.410E-09	1.022E-08	1.085E-08	1.138E-08	1.182E-08	1.219E-08	1.238E-08	1.254E-08	0.000E+00
in125m	0.000E+00	2.996E-08	3.521E-08	3.889E-08	4.183E-08	4.427E-08	4.632E-08	4.806E-08	4.892E-08	4.969E-08	0.000E+00
sn125	0.000E+00	1.843E-03	2.069E-03	2.218E-03	2.339E-03	2.441E-03	2.531E-03	2.610E-03	2.611E-03	2.647E-03	3.806E-05
sn125m	0.000E+00	3.351E-06	3.917E-06	4.312E-06	4.630E-06	4.895E-06	5.119E-06	5.310E-06	5.405E-06	5.492E-06	0.000E+00
sb125	0.000E+00	4.136E-02	8.942E-02	1.400E-01	1.917E-01	2.438E-01	2.955E-01	3.465E-01	3.731E-01	3.998E-01	3.863E-01
te125	0.000E+00	1.182E-03	5.255E-03	1.265E-02	2.355E-02	3.803E-02	5.611E-02	7.775E-02	9.061E-02	1.047E-01	1.206E-01

case 1 fission products page 18
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
te125m	0.000E+00	2.267E-04	7.246E-04	1.339E-03	2.005E-03	2.692E-03	3.385E-03	4.074E-03	4.431E-03	4.793E-03	5.027E-03
pd126	0.000E+00	8.221E-14	8.280E-14	8.200E-14	8.143E-14	8.117E-14	8.118E-14	8.138E-14	8.163E-14	8.186E-14	0.000E+00
ag126	0.000E+00	6.672E-12	6.759E-12	6.721E-12	6.696E-12	6.693E-12	6.709E-12	6.742E-12	6.771E-12	6.799E-12	0.000E+00
cd126	0.000E+00	1.630E-09	1.722E-09	1.768E-09	1.804E-09	1.836E-09	1.865E-09	1.893E-09	1.909E-09	1.923E-09	0.000E+00
in126	0.000E+00	1.044E-08	1.242E-08	1.383E-08	1.497E-08	1.592E-08	1.673E-08	1.742E-08	1.776E-08	1.808E-08	0.000E+00
sn126	0.000E+00	6.471E-02	1.489E-01	2.478E-01	3.586E-01	4.792E-01	6.080E-01	7.438E-01	8.182E-01	8.957E-01	8.957E-01
sb126	0.000E+00	5.182E-05	8.221E-05	1.068E-04	1.276E-04	1.456E-04	1.613E-04	1.754E-04	1.824E-04	1.890E-04	7.019E-06
sb126m	0.000E+00	8.226E-08	1.237E-07	1.566E-07	1.840E-07	2.075E-07	2.280E-07	2.459E-07	2.548E-07	2.631E-07	3.235E-10
te126	0.000E+00	4.557E-04	1.316E-03	2.497E-03	3.950E-03	5.641E-03	7.541E-03	9.632E-03	1.081E-02	1.206E-02	1.224E-02
xe126	0.000E+00	7.215E-12	1.450E-11	2.225E-11	3.107E-11	4.162E-11	5.463E-11	7.086E-11	8.106E-11	9.275E-11	9.275E-11
ag127	0.000E+00	4.589E-12	4.620E-12	4.575E-12	4.548E-12	4.544E-12	4.558E-12	4.589E-12	4.614E-12	4.639E-12	0.000E+00
cd127	0.000E+00	1.510E-09	1.555E-09	1.567E-09	1.577E-09	1.591E-09	1.608E-09	1.627E-09	1.639E-09	1.651E-09	0.000E+00

in127	0.000E+00	9.306E-09	1.033E-08	1.099E-08	1.153E-08	1.200E-08	1.242E-08	1.279E-08	1.298E-08	1.316E-08	0.000E+00
in127m	0.000E+00	3.042E-08	3.376E-08	3.593E-08	3.770E-08	3.923E-08	4.058E-08	4.180E-08	4.243E-08	4.302E-08	0.000E+00
sn127	0.000E+00	9.296E-05	1.121E-04	1.259E-04	1.370E-04	1.463E-04	1.543E-04	1.611E-04	1.645E-04	1.675E-04	0.000E+00
sn127m	0.000E+00	4.834E-06	5.519E-06	5.987E-06	6.367E-06	6.690E-06	6.971E-06	7.219E-06	7.345E-06	7.462E-06	0.000E+00
sb127	0.000E+00	1.111E-02	1.300E-02	1.433E-02	1.540E-02	1.630E-02	1.708E-02	1.775E-02	1.809E-02	1.840E-02	4.522E-07
te127	0.000E+00	1.007E-03	1.226E-03	1.381E-03	1.504E-03	1.605E-03	1.690E-03	1.763E-03	1.799E-03	1.832E-03	2.115E-04
te127m	0.000E+00	2.258E-02	4.011E-02	5.283E-02	6.231E-02	6.964E-02	7.548E-02	8.026E-02	8.248E-02	8.455E-02	6.041E-02
i127	0.000E+00	1.487E-01	3.488E-01	5.800E-01	8.351E-01	1.109E+00	1.399E+00	1.702E+00	1.866E+00	2.037E+00	2.081E+00
xe127	0.000E+00	4.245E-11	2.811E-10	7.985E-10	1.640E-09	2.843E-09	4.444E-09	6.481E-09	7.750E-09	9.184E-09	2.986E-09
ag128	0.000E+00	1.235E-12	1.241E-12	1.226E-12	1.215E-12	1.209E-12	1.207E-12	1.209E-12	1.211E-12	1.214E-12	0.000E+00
cd128	0.000E+00	3.123E-09	3.114E-09	3.054E-09	3.005E-09	2.971E-09	2.947E-09	2.933E-09	2.931E-09	2.929E-09	0.000E+00
in128	0.000E+00	2.088E-08	2.113E-08	2.095E-08	2.077E-08	2.063E-08	2.053E-08	2.046E-08	2.045E-08	2.043E-08	0.000E+00
sn128	0.000E+00	2.905E-04	3.110E-04	3.219E-04	3.301E-04	3.369E-04	3.425E-04	3.473E-04	3.498E-04	3.520E-04	0.000E+00
sb128	0.000E+00	1.999E-04	2.330E-04	2.560E-04	2.742E-04	2.893E-04	3.018E-04	3.124E-04	3.176E-04	3.223E-04	0.000E+00
sb128m	0.000E+00	5.250E-05	5.657E-05	5.885E-05	6.060E-05	6.203E-05	6.322E-05	6.424E-05	6.477E-05	6.522E-05	0.000E+00
te128	0.000E+00	5.009E-01	1.051E+00	1.631E+00	2.235E+00	2.857E+00	3.494E+00	4.145E+00	4.494E+00	4.853E+00	4.854E+00
i128	0.000E+00	2.018E-07	4.770E-07	7.867E-07	1.126E-06	1.493E-06	1.884E-06	2.298E-06	2.528E-06	2.767E-06	0.000E+00
xe128	0.000E+00	3.584E-04	1.634E-03	3.994E-03	7.564E-03	1.245E-02	1.876E-02	2.657E-02	3.134E-02	3.667E-02	3.667E-02
cd129	0.000E+00	4.252E-10	4.256E-10	4.188E-10	4.135E-10	4.100E-10	4.081E-10	4.073E-10	4.076E-10	4.079E-10	0.000E+00
in129	0.000E+00	1.578E-08	1.594E-08	1.579E-08	1.565E-08	1.554E-08	1.547E-08	1.542E-08	1.541E-08	1.541E-08	0.000E+00
sn129	0.000E+00	9.314E-06	9.943E-06	1.028E-05	1.054E-05	1.076E-05	1.095E-05	1.113E-05	1.122E-05	1.130E-05	0.000E+00
sn129m	0.000E+00	3.509E-05	3.627E-05	3.652E-05	3.661E-05	3.665E-05	3.665E-05	3.662E-05	3.663E-05	3.660E-05	0.000E+00
sb129	0.000E+00	2.930E-03	3.150E-03	3.272E-03	3.364E-03	3.440E-03	3.503E-03	3.556E-03	3.585E-03	3.609E-03	0.000E+00
te129	0.000E+00	7.133E-04	7.785E-04	8.117E-04	8.361E-04	8.560E-04	8.725E-04	8.866E-04	8.938E-04	9.001E-04	3.440E-05
te129m	0.000E+00	8.461E-02	1.031E-01	1.101E-01	1.145E-01	1.180E-01	1.208E-01	1.232E-01	1.243E-01	1.253E-01	3.731E-02
i129	0.000E+00	9.858E-01	2.133E+00	3.345E+00	4.599E+00	5.885E+00	7.197E+00	8.530E+00	9.243E+00	9.973E+00	1.007E+01
xe129	0.000E+00	8.158E-08	7.004E-07	2.515E-06	6.267E-06	1.278E-05	2.296E-05	3.778E-05	4.781E-05	5.979E-05	6.137E-05
xe129m	0.000E+00	1.536E-08	7.078E-08	1.718E-07	3.240E-07	5.326E-07	8.032E-07	1.141E-06	1.300E-06	1.528E-06	1.536E-08
cd130	0.000E+00	2.659E-10	2.646E-10	2.590E-10	2.544E-10	2.511E-10	2.488E-10	2.472E-10	2.469E-10	2.465E-10	0.000E+00
in130	0.000E+00	7.766E-09	7.631E-09	7.371E-09	7.142E-09	6.951E-09	6.791E-09	6.655E-09	6.598E-09	6.539E-09	0.000E+00
sn130	0.000E+00	5.868E-05	5.954E-05	5.909E-05	5.858E-05	5.813E-05	5.774E-05	5.740E-05	5.729E-05	5.715E-05	0.000E+00
sb130	0.000E+00	1.347E-04	1.488E-04	1.575E-04	1.641E-04	1.695E-04	1.739E-04	1.775E-04	1.792E-04	1.808E-04	0.000E+00
sb130m	0.000E+00	1.280E-04	1.310E-04	1.308E-04	1.304E-04	1.299E-04	1.295E-04	1.291E-04	1.290E-04	1.288E-04	0.000E+00
te130	0.000E+00	2.416E+00	4.950E+00	7.531E+00	1.014E+01	1.278E+01	1.543E+01	1.809E+01	1.951E+01	2.095E+01	2.095E+01
i130	0.000E+00	2.671E-05	5.511E-05	8.348E-05	1.121E-04	1.413E-04	1.711E-04	2.015E-04	2.181E-04	2.350E-04	0.000E+00
i130m	0.000E+00	1.542E-07	3.265E-07	5.019E-07	6.815E-07	8.659E-07	1.055E-06	1.250E-06	1.357E-06	1.466E-06	0.000E+00
xe130	0.000E+00	2.011E-03	7.975E-03	1.804E-02	3.228E-02	5.076E-02	7.356E-02	1.008E-01	1.170E-01	1.349E-01	1.352E-01
cd131	0.000E+00	8.582E-12	8.599E-12	8.476E-12	8.381E-12	8.323E-12	8.294E-12	8.288E-12	8.300E-12	8.310E-12	0.000E+00

case 1 fission products page 19
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
in131	0.000E+00	2.590E-09	2.555E-09	2.479E-09	2.416E-09	2.365E-09	2.326E-09	2.296E-09	2.285E-09	2.275E-09	0.000E+00
sn131	0.000E+00	8.833E-06	8.889E-06	8.769E-06	8.658E-06	8.570E-06	8.503E-06	8.453E-06	8.439E-06	8.423E-06	0.000E+00
sb131	0.000E+00	8.321E-04	8.496E-04	8.474E-04	8.434E-04	8.396E-04	8.362E-04	8.330E-04	8.322E-04	8.308E-04	0.000E+00
te131	0.000E+00	9.136E-04	9.432E-04	9.492E-04	9.518E-04	9.534E-04	9.545E-04	9.552E-04	9.562E-04	9.565E-04	2.899E-19
te131m	0.000E+00	1.043E-02	1.172E-02	1.255E-02	1.321E-02	1.374E-02	1.419E-02	1.457E-02	1.477E-02	1.493E-02	9.272E-17
i131	0.000E+00	4.762E-01	4.967E-01	5.039E-01	5.085E-01	5.121E-01	5.149E-01	5.172E-01	5.155E-01	5.165E-01	3.313E-03
xe131	0.000E+00	3.495E+00	7.527E+00	1.152E+01	1.544E+01	1.928E+01	2.302E+01	2.666E+01	2.854E+01	3.043E+01	3.097E+01
xe131m	0.000E+00	6.765E-03	7.218E-03	7.418E-03	7.576E-03	7.716E-03	7.843E-03	7.961E-03	8.866E-03	8.963E-03	7.521E-04
cd132	0.000E+00	1.327E-12	1.333E-12	1.317E-12	1.304E-12	1.297E-12	1.293E-12	1.293E-12	1.294E-12	1.296E-12	0.000E+00
in132	0.000E+00	4.753E-10	4.698E-10	4.568E-10	4.456E-10	4.367E-10	4.297E-10	4.242E-10	4.221E-10	4.199E-10	0.000E+00
sn132	0.000E+00	6.937E-06	7.033E-06	6.984E-06	6.935E-06	6.900E-06	6.877E-06	6.863E-06	6.866E-06	6.865E-06	0.000E+00
sb132	0.000E+00	7.879E-05	8.264E-05	8.420E-05	8.529E-05	8.617E-05	8.690E-05	8.752E-05	8.789E-05	8.817E-05	0.000E+00
sb132m	0.000E+00	6.235E-05	6.284E-05	6.202E-05	6.121E-05	6.051E-05	5.992E-05	5.942E-05	5.923E-05	5.901E-05	0.000E+00
te132	0.000E+00	2.885E-01	2.989E-01	3.016E-01	3.031E-01	3.042E-01	3.050E-01	3.056E-01	3.061E-01	3.064E-01	1.084E-06
i132	0.000E+00	8.480E-03	8.804E-03	8.900E-03	8.956E-03	8.998E-03	9.030E-03	9.055E-03	9.076E-03	9.087E-03	3.263E-08
xe132	0.000E+00	5.845E+00	1.238E+01	1.915E+01	2.612E+01	3.325E+01	4.055E+01	4.801E+01	5.201E+01	5.614E+01	5.645E+01
cs132	0.000E+00	4.972E-07	1.055E-06	1.594E-06	2.124E-06	2.652E-06	3.180E-06	3.710E-06	3.945E-06	4.234E-06	7.683E-09
ba132	0.000E+00	4.584E-08	2.001E-07	4.632E-07	8.333E-07	1.310E-06	1.892E-06	2.581E-06	2.987E-06	3.431E-06	3.510E-06
in133	0.000E+00	7.471E-12	7.507E-12	7.419E-12	7.356E-12	7.324E-12	7.317E-12	7.331E-12	7.351E-12	7.371E-12	0.000E+00
sn133	0.000E+00	7.617E-08	7.531E-08	7.328E-08	7.159E-08	7.029E-08	6.933E-08	6.863E-08	6.841E-08	6.819E-08	0.000E+00
sb133	0.000E+00	8.636E-05	8.598E-05	8.399E-05	8.218E-05	8.066E-05	7.939E-05	7.833E-05	7.790E-05	7.745E-05	0.000E+00
te133	0.000E+00	6.772E-04	6.867E-04	6.810E-04	6.746E-04	6.689E-04	6.640E-04	6.596E-04	6.581E-04	6.561E-04	0.000E+00
te133m	0.000E+00	2.451E-03	2.495E-03	2.481E-03	2.462E-03	2.445E-03	2.429E-03	2.415E-03	2.410E-03	2.403E-03	0.000E+00
i133	0.000E+00	1.175E-01	1.205E-01	1.206E-01	1.204E-01	1.202E-01	1.199E-01	1.197E-01	1.196E-01	1.195E-01	3.943E-22
i133m	0.000E+00	8.638E-07	9.245E-07	9.566E-07	9.806E-07	1.000E-06	1.016E-06	1.030E-06	1.037E-06	1.043E-06	0.000E+00
xe133	0.000E+00	7.102E-01	7.287E-01	7.297E-01	7.287E-01	7.274E-01	7.261E-01	7.248E-01	7.256E-01	7.249E-01	3.650E-04
xe133m	0.000E+00	8.752E-03	9.076E-03	9.165E-03	9.216E-03	9.254E-03	9.283E-03	9.305E-03	9.324E-03	9.334E-03	1.177E-10
cs133	0.000E+00	8.440E+00	1.787E+01	2.727E+01	3.657E+01	4.576E+01	5.485E+01	6.382E+01	6.853E+01	7.329E+01	7.414E+01
ba133	0.000E+00	1.521E-10	4.679E-10	9.115E-10	1.456E-09	2.080E-09	2.769E-09	3.510E-09	3.920E-09	4.348E-09	4.302E-09
in134	0.000E+00	8.918E-13	8.980E-13	8.892E-13	8.831E-13	8.805E-13	8.808E-13	8.834E-13	8.863E-13	8.890E-13	0.000E+00
sn134	0.000E+00	8.279E-09	8.267E-09	8.124E-09	8.014E-09	7.945E-09	7.909E-09	7.899E-09	7.910E-09	7.921E-09	0.000E+00

sb134 0.000E+00 9.723E-08 9.550E-08 9.223E-08 8.936E-08 8.697E-08 8.498E-08 8.330E-08 8.260E-08 8.188E-08 0.000E+00
sb134m 0.000E+00 7.603E-07 7.560E-07 7.386E-07 7.239E-07 7.126E-07 7.042E-07 6.982E-07 6.965E-07 6.947E-07 0.000E+00
te134 0.000E+00 4.017E-03 4.029E-03 3.958E-03 3.890E-03 3.829E-03 3.777E-03 3.730E-03 3.710E-03 3.689E-03 0.000E+00
i134 0.000E+00 5.730E-03 5.844E-03 5.823E-03 5.790E-03 5.759E-03 5.729E-03 5.703E-03 5.694E-03 5.681E-03 0.000E+00
i134m 0.000E+00 2.011E-05 2.307E-05 2.508E-05 2.668E-05 2.800E-05 2.911E-05 3.006E-05 3.053E-05 3.096E-05 0.000E+00
xe134 0.000E+00 1.094E+01 2.218E+01 3.342E+01 4.465E+01 5.584E+01 6.699E+01 7.811E+01 8.399E+01 8.997E+01 8.998E+01
xe134m 0.000E+00 5.071E-09 5.978E-09 6.612E-09 7.113E-09 7.523E-09 7.863E-09 8.146E-09 8.285E-09 8.408E-09 0.000E+00
cs134 0.000E+00 4.646E-02 1.905E-01 4.213E-01 7.287E-01 1.104E+00 1.541E+00 2.032E+00 2.313E+00 2.612E+00 2.474E+00
cs134m 0.000E+00 1.283E-05 2.749E-05 4.170E-05 5.572E-05 6.970E-05 8.370E-05 9.778E-05 1.054E-04 1.130E-04 0.000E+00
ba134 0.000E+00 1.437E-03 1.169E-02 3.927E-02 9.164E-02 1.754E-01 2.966E-01 4.603E-01 5.660E-01 6.880E-01 8.261E-01
sn135 0.000E+00 2.785E-10 2.792E-10 2.753E-10 2.724E-10 2.708E-10 2.702E-10 2.704E-10 2.710E-10 2.716E-10 0.000E+00
sb135 0.000E+00 7.874E-08 7.812E-08 7.622E-08 7.463E-08 7.342E-08 7.254E-08 7.192E-08 7.175E-08 7.157E-08 0.000E+00
te135 0.000E+00 1.527E-05 1.540E-05 1.522E-05 1.505E-05 1.490E-05 1.479E-05 1.470E-05 1.467E-05 1.464E-05 0.000E+00
i135 0.000E+00 3.558E-02 3.648E-02 3.650E-02 3.644E-02 3.637E-02 3.631E-02 3.626E-02 3.627E-02 3.625E-02 0.000E+00
xe135 0.000E+00 2.360E-02 2.424E-02 2.450E-02 2.465E-02 2.473E-02 2.476E-02 2.476E-02 2.476E-02 2.474E-02 0.000E+00
xe135m 0.000E+00 2.600E-04 2.738E-04 2.800E-04 2.844E-04 2.880E-04 2.910E-04 2.936E-04 2.950E-04 2.962E-04 0.000E+00
cs135 0.000E+00 4.211E+00 8.576E+00 1.300E+01 1.746E+01 2.193E+01 2.641E+01 3.090E+01 3.328E+01 3.569E+01 3.576E+01
cs135m 0.000E+00 2.030E-07 8.416E-07 1.850E-06 3.185E-06 4.821E-06 6.735E-06 8.913E-06 1.018E-05 1.153E-05 0.000E+00
ba135 0.000E+00 2.716E-06 1.248E-05 4.185E-05 1.112E-04 2.479E-04 4.859E-04 8.650E-04 1.139E-03 1.479E-03 1.483E-03

case 1 fission products page 20
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
ba135m	0.000E+00	3.911E-09	3.219E-08	1.074E-07	2.496E-07	4.772E-07	8.077E-07	1.258E-06	1.552E-06	1.892E-06	2.641E-21
sn136	0.000E+00	4.131E-11	4.155E-11	4.110E-11	4.077E-11	4.060E-11	4.056E-11	4.063E-11	4.074E-11	4.084E-11	0.000E+00
sb136	0.000E+00	5.709E-09	5.658E-09	5.522E-09	5.412E-09	5.335E-09	5.283E-09	5.252E-09	5.248E-09	5.243E-09	0.000E+00
te136	0.000E+00	7.112E-06	7.022E-06	6.815E-06	6.634E-06	6.486E-06	6.367E-06	6.271E-06	6.232E-06	6.194E-06	0.000E+00
i136	0.000E+00	6.563E-05	6.571E-05	6.450E-05	6.337E-05	6.241E-05	6.161E-05	6.093E-05	6.066E-05	6.038E-05	0.000E+00
i136m	0.000E+00	1.638E-05	1.674E-05	1.670E-05	1.663E-05	1.655E-05	1.648E-05	1.642E-05	1.640E-05	1.637E-05	0.000E+00
xe136	0.000E+00	1.409E+01	2.871E+01	4.342E+01	5.817E+01	7.294E+01	8.773E+01	1.025E+02	1.104E+02	1.184E+02	1.184E+02
cs136	0.000E+00	4.158E-03	7.588E-03	1.070E-02	1.363E-02	1.643E-02	1.916E-02	2.184E-02	2.327E-02	2.470E-02	1.104E-03
ba136	0.000E+00	1.222E-02	4.351E-02	9.190E-02	1.562E-01	2.357E-01	3.298E-01	4.382E-01	5.013E-01	5.697E-01	5.933E-01
ba136m	0.000E+00	1.263E-10	2.305E-10	3.251E-10	4.140E-10	4.993E-10	5.822E-10	6.636E-10	7.069E-10	7.503E-10	3.354E-11
sb137	0.000E+00	5.553E-09	5.321E-09	5.013E-09	4.736E-09	4.491E-09	4.271E-09	4.071E-09	3.975E-09	3.878E-09	0.000E+00
te137	0.000E+00	4.641E-07	4.588E-07	4.461E-07	4.352E-07	4.266E-07	4.199E-07	4.148E-07	4.129E-07	4.110E-07	0.000E+00

i137	0.000E+00	1.964E-05	1.982E-05	1.959E-05	1.936E-05	1.916E-05	1.900E-05	1.888E-05	1.883E-05	1.878E-05	0.000E+00
xe137	0.000E+00	3.379E-04	3.457E-04	3.455E-04	3.445E-04	3.435E-04	3.426E-04	3.418E-04	3.418E-04	3.414E-04	0.000E+00
cs137	0.000E+00	8.966E+00	1.817E+01	2.737E+01	3.654E+01	4.566E+01	5.473E+01	6.375E+01	6.851E+01	7.334E+01	7.307E+01
ba137	0.000E+00	2.982E-02	1.177E-01	2.643E-01	4.693E-01	7.324E-01	1.053E+00	1.431E+00	1.655E+00	1.899E+00	2.172E+00
ba137m	0.000E+00	1.403E-06	2.818E-06	4.231E-06	5.637E-06	7.035E-06	8.425E-06	9.806E-06	1.053E-05	1.127E-05	1.116E-05
sb138	0.000E+00	1.504E-11	1.509E-11	1.489E-11	1.475E-11	1.468E-11	1.467E-11	1.471E-11	1.475E-11	1.480E-11	0.000E+00
te138	0.000E+00	4.156E-08	4.118E-08	4.018E-08	3.938E-08	3.881E-08	3.845E-08	3.824E-08	3.821E-08	3.819E-08	0.000E+00
i138	0.000E+00	2.635E-06	2.655E-06	2.622E-06	2.590E-06	2.565E-06	2.545E-06	2.529E-06	2.525E-06	2.520E-06	0.000E+00
xe138	0.000E+00	1.275E-03	1.290E-03	1.276E-03	1.261E-03	1.248E-03	1.237E-03	1.226E-03	1.222E-03	1.218E-03	0.000E+00
cs138	0.000E+00	3.060E-03	3.111E-03	3.092E-03	3.068E-03	3.045E-03	3.025E-03	3.007E-03	3.001E-03	2.993E-03	0.000E+00
cs138m	0.000E+00	7.184E-06	8.075E-06	8.656E-06	9.114E-06	9.492E-06	9.809E-06	1.008E-05	1.021E-05	1.033E-05	0.000E+00
ba138	0.000E+00	9.503E+00	1.921E+01	2.889E+01	3.851E+01	4.809E+01	5.761E+01	6.708E+01	7.208E+01	7.717E+01	7.717E+01
la138	0.000E+00	4.755E-05	9.914E-05	1.530E-04	2.085E-04	2.653E-04	3.230E-04	3.813E-04	4.124E-04	4.442E-04	4.442E-04
sb139	0.000E+00	1.424E-12	1.434E-12	1.419E-12	1.409E-12	1.404E-12	1.403E-12	1.406E-12	1.410E-12	1.414E-12	0.000E+00
te139	0.000E+00	2.624E-09	2.614E-09	2.563E-09	2.522E-09	2.495E-09	2.478E-09	2.469E-09	2.470E-09	2.470E-09	0.000E+00
i139	0.000E+00	5.625E-07	5.527E-07	5.335E-07	5.163E-07	5.016E-07	4.889E-07	4.778E-07	4.729E-07	4.679E-07	0.000E+00
xe139	0.000E+00	4.878E-05	4.869E-05	4.765E-05	4.665E-05	4.579E-05	4.503E-05	4.436E-05	4.407E-05	4.377E-05	0.000E+00
cs139	0.000E+00	8.419E-04	8.541E-04	8.472E-04	8.392E-04	8.319E-04	8.252E-04	8.192E-04	8.169E-04	8.141E-04	0.000E+00
ba139	0.000E+00	7.785E-03	7.915E-03	7.864E-03	7.801E-03	7.742E-03	7.689E-03	7.640E-03	7.622E-03	7.599E-03	0.000E+00
la139	0.000E+00	9.128E+00	1.844E+01	2.771E+01	3.690E+01	4.603E+01	5.510E+01	6.411E+01	6.886E+01	7.368E+01	7.369E+01
ce139	0.000E+00	5.480E-08	1.523E-07	2.689E-07	3.909E-07	5.117E-07	6.281E-07	7.391E-07	7.957E-07	8.517E-07	6.327E-07
pr139	0.000E+00	2.458E-12	6.578E-12	1.081E-11	1.501E-11	1.921E-11	2.343E-11	2.769E-11	2.999E-11	3.232E-11	0.000E+00
te140	0.000E+00	6.280E-10	6.238E-10	6.096E-10	5.977E-10	5.887E-10	5.821E-10	5.772E-10	5.757E-10	5.742E-10	0.000E+00
i140	0.000E+00	4.957E-08	4.870E-08	4.709E-08	4.573E-08	4.465E-08	4.382E-08	4.318E-08	4.295E-08	4.272E-08	0.000E+00
xe140	0.000E+00	1.248E-05	1.232E-05	1.195E-05	1.161E-05	1.132E-05	1.107E-05	1.085E-05	1.075E-05	1.065E-05	0.000E+00
cs140	0.000E+00	8.902E-05	8.990E-05	8.885E-05	8.774E-05	8.676E-05	8.589E-05	8.513E-05	8.483E-05	8.448E-05	0.000E+00
ba140	0.000E+00	1.679E+00	1.716E+00	1.707E+00	1.694E+00	1.682E+00	1.671E+00	1.662E+00	1.658E+00	1.654E+00	6.699E-02
la140	0.000E+00	2.214E-01	2.266E-01	2.256E-01	2.242E-01	2.228E-01	2.216E-01	2.206E-01	2.220E-01	2.214E-01	1.015E-02
ce140	0.000E+00	7.466E+00	1.699E+01	2.653E+01	3.602E+01	4.547E+01	5.487E+01	6.422E+01	6.922E+01	7.431E+01	7.611E+01
pr140	0.000E+00	1.103E-10	2.953E-10	4.850E-10	6.738E-10	8.624E-10	1.052E-09	1.243E-09	1.346E-09	1.451E-09	0.000E+00
te141	0.000E+00	2.003E-12	2.017E-12	1.996E-12	1.982E-12	1.975E-12	1.974E-12	1.978E-12	1.984E-12	1.989E-12	0.000E+00
i141	0.000E+00	3.009E-09	3.011E-09	2.962E-09	2.921E-09	2.894E-09	2.876E-09	2.867E-09	2.868E-09	2.868E-09	0.000E+00
xe141	0.000E+00	6.020E-07	5.937E-07	5.752E-07	5.589E-07	5.451E-07	5.336E-07	5.239E-07	5.197E-07	5.155E-07	0.000E+00
cs141	0.000E+00	2.719E-05	2.741E-05	2.704E-05	2.667E-05	2.633E-05	2.604E-05	2.578E-05	2.567E-05	2.555E-05	0.000E+00
ba141	0.000E+00	1.552E-03	1.578E-03	1.568E-03	1.556E-03	1.544E-03	1.533E-03	1.523E-03	1.519E-03	1.514E-03	0.000E+00
la141	0.000E+00	2.006E-02	2.042E-02	2.031E-02	2.016E-02	2.001E-02	1.988E-02	1.975E-02	1.971E-02	1.964E-02	0.000E+00
ce141	0.000E+00	3.495E+00	3.982E+00	4.027E+00	4.010E+00	3.987E+00	3.963E+00	3.940E+00	3.928E+00	3.917E+00	1.119E+00
pr141	0.000E+00	4.944E+00	1.309E+01	2.164E+01	3.019E+01	3.868E+01	4.712E+01	5.550E+01	5.991E+01	6.439E+01	6.721E+01

case 1 fission products page 21
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
nd141	0.000E+00	5.929E-12	1.347E-11	2.056E-11	2.733E-11	3.388E-11	4.025E-11	4.648E-11	4.978E-11	5.307E-11	0.000E+00
te142	0.000E+00	1.684E-12	1.685E-12	1.661E-12	1.646E-12	1.643E-12	1.648E-12	1.661E-12	1.672E-12	1.683E-12	0.000E+00
i142	0.000E+00	3.663E-10	3.575E-10	3.451E-10	3.363E-10	3.311E-10	3.290E-10	3.295E-10	3.309E-10	3.326E-10	0.000E+00
xe142	0.000E+00	1.631E-07	1.609E-07	1.561E-07	1.519E-07	1.484E-07	1.456E-07	1.433E-07	1.424E-07	1.414E-07	0.000E+00
cs142	0.000E+00	1.141E-06	1.137E-06	1.112E-06	1.088E-06	1.068E-06	1.051E-06	1.036E-06	1.030E-06	1.023E-06	0.000E+00
ba142	0.000E+00	8.930E-04	9.032E-04	8.935E-04	8.829E-04	8.733E-04	8.645E-04	8.564E-04	8.532E-04	8.494E-04	0.000E+00
la142	0.000E+00	7.823E-03	7.935E-03	7.868E-03	7.790E-03	7.718E-03	7.651E-03	7.590E-03	7.565E-03	7.536E-03	0.000E+00
ce142	0.000E+00	8.543E+00	1.725E+01	2.590E+01	3.449E+01	4.300E+01	5.144E+01	5.982E+01	6.424E+01	6.872E+01	6.873E+01
pr142	0.000E+00	8.316E-05	2.226E-04	3.657E-04	5.080E-04	6.502E-04	7.930E-04	9.370E-04	1.015E-03	1.094E-03	0.000E+00
pr142m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
nd142	0.000E+00	2.758E-03	1.598E-02	4.152E-02	7.949E-02	1.299E-01	1.927E-01	2.679E-01	3.129E-01	3.624E-01	3.635E-01
i143	0.000E+00	7.977E-12	8.005E-12	7.901E-12	7.823E-12	7.777E-12	7.758E-12	7.761E-12	7.775E-12	7.789E-12	0.000E+00
xe143	0.000E+00	1.848E-08	1.821E-08	1.767E-08	1.721E-08	1.686E-08	1.659E-08	1.640E-08	1.633E-08	1.626E-08	0.000E+00
cs143	0.000E+00	6.636E-07	6.538E-07	6.327E-07	6.137E-07	5.975E-07	5.836E-07	5.716E-07	5.663E-07	5.609E-07	0.000E+00
ba143	0.000E+00	1.859E-05	1.863E-05	1.829E-05	1.796E-05	1.766E-05	1.740E-05	1.716E-05	1.706E-05	1.695E-05	0.000E+00
la143	0.000E+00	1.217E-03	1.226E-03	1.209E-03	1.191E-03	1.175E-03	1.161E-03	1.147E-03	1.142E-03	1.135E-03	0.000E+00
ce143	0.000E+00	1.713E-01	1.726E-01	1.703E-01	1.678E-01	1.656E-01	1.635E-01	1.617E-01	1.609E-01	1.600E-01	1.951E-14
pr143	0.000E+00	1.643E+00	1.669E+00	1.648E+00	1.625E+00	1.604E+00	1.585E+00	1.567E+00	1.544E+00	1.535E+00	8.411E-02
nd143	0.000E+00	6.730E+00	1.511E+01	2.323E+01	3.101E+01	3.849E+01	4.567E+01	5.256E+01	5.611E+01	5.964E+01	6.125E+01
i144	0.000E+00	1.133E-13	1.143E-13	1.133E-13	1.125E-13	1.122E-13	1.123E-13	1.126E-13	1.129E-13	1.132E-13	0.000E+00
xe144	0.000E+00	4.149E-09	4.122E-09	4.031E-09	3.957E-09	3.904E-09	3.868E-09	3.847E-09	3.843E-09	3.839E-09	0.000E+00
cs144	0.000E+00	1.033E-07	1.022E-07	9.929E-08	9.677E-08	9.471E-08	9.304E-08	9.169E-08	9.116E-08	9.062E-08	0.000E+00
ba144	0.000E+00	1.237E-05	1.226E-05	1.191E-05	1.159E-05	1.132E-05	1.107E-05	1.085E-05	1.076E-05	1.066E-05	0.000E+00
la144	0.000E+00	5.401E-05	5.413E-05	5.313E-05	5.215E-05	5.127E-05	5.049E-05	4.978E-05	4.947E-05	4.913E-05	0.000E+00
ce144	0.000E+00	7.130E+00	1.276E+01	1.707E+01	2.033E+01	2.278E+01	2.461E+01	2.596E+01	2.651E+01	2.699E+01	2.338E+01
pr144	0.000E+00	3.038E-04	5.412E-04	7.226E-04	8.599E-04	9.631E-04	1.040E-03	1.097E-03	1.120E-03	1.140E-03	9.848E-04
pr144m	0.000E+00	1.763E-06	3.149E-06	4.209E-06	5.011E-06	5.614E-06	6.064E-06	6.395E-06	6.532E-06	6.648E-06	5.743E-06
nd144	0.000E+00	9.971E-01	3.768E+00	7.965E+00	1.329E+01	1.951E+01	2.644E+01	3.395E+01	3.813E+01	4.250E+01	4.611E+01
i145	0.000E+00	4.716E-15	4.761E-15	4.724E-15	4.698E-15	4.687E-15	4.690E-15	4.702E-15	4.715E-15	4.728E-15	0.000E+00
xe145	0.000E+00	2.950E-10	2.979E-10	2.957E-10	2.945E-10	2.944E-10	2.954E-10	2.971E-10	2.985E-10	2.998E-10	0.000E+00
cs145	0.000E+00	1.332E-08	1.325E-08	1.296E-08	1.272E-08	1.254E-08	1.242E-08	1.234E-08	1.232E-08	1.230E-08	0.000E+00

ba145	0.000E+00	2.056E-06	2.032E-06	1.973E-06	1.919E-06	1.873E-06	1.835E-06	1.801E-06	1.787E-06	1.773E-06	0.000E+00
la145	0.000E+00	2.238E-05	2.246E-05	2.207E-05	2.170E-05	2.136E-05	2.107E-05	2.080E-05	2.069E-05	2.057E-05	0.000E+00
ce145	0.000E+00	1.768E-04	1.785E-04	1.762E-04	1.739E-04	1.717E-04	1.698E-04	1.681E-04	1.673E-04	1.665E-04	0.000E+00
pr145	0.000E+00	2.110E-02	2.130E-02	2.103E-02	2.075E-02	2.050E-02	2.027E-02	2.006E-02	1.998E-02	1.988E-02	0.000E+00
nd145	0.000E+00	5.815E+00	1.167E+01	1.740E+01	2.301E+01	2.851E+01	3.389E+01	3.918E+01	4.193E+01	4.471E+01	4.473E+01
pm145	0.000E+00	8.065E-09	5.235E-08	1.766E-07	4.436E-07	9.275E-07	1.708E-06	2.866E-06	3.661E-06	4.614E-06	5.573E-06
sm145	0.000E+00	2.063E-08	1.875E-07	6.239E-07	1.407E-06	2.580E-06	4.164E-06	6.162E-06	7.387E-06	8.749E-06	7.758E-06
xe146	0.000E+00	1.733E-11	1.745E-11	1.728E-11	1.715E-11	1.709E-11	1.708E-11	1.711E-11	1.716E-11	1.720E-11	0.000E+00
cs146	0.000E+00	2.014E-09	1.972E-09	1.900E-09	1.838E-09	1.787E-09	1.744E-09	1.708E-09	1.693E-09	1.678E-09	0.000E+00
ba146	0.000E+00	5.949E-07	5.808E-07	5.578E-07	5.374E-07	5.202E-07	5.055E-07	4.928E-07	4.873E-07	4.816E-07	0.000E+00
la146	0.000E+00	3.897E-06	3.874E-06	3.779E-06	3.690E-06	3.614E-06	3.548E-06	3.490E-06	3.466E-06	3.440E-06	0.000E+00
ce146	0.000E+00	6.163E-04	6.240E-04	6.180E-04	6.114E-04	6.055E-04	6.002E-04	5.955E-04	5.937E-04	5.916E-04	0.000E+00
pr146	0.000E+00	1.106E-03	1.120E-03	1.110E-03	1.098E-03	1.088E-03	1.079E-03	1.071E-03	1.068E-03	1.064E-03	0.000E+00
nd146	0.000E+00	4.584E+00	9.301E+00	1.404E+01	1.879E+01	2.356E+01	2.835E+01	3.315E+01	3.571E+01	3.832E+01	3.832E+01
pm146	0.000E+00	2.849E-06	1.275E-05	2.869E-05	4.958E-05	7.457E-05	1.029E-04	1.340E-04	1.515E-04	1.698E-04	1.664E-04
sm146	0.000E+00	2.514E-07	2.398E-06	8.377E-06	1.982E-05	3.813E-05	6.447E-05	9.989E-05	1.226E-04	1.488E-04	1.500E-04
xe147	0.000E+00	1.911E-14	1.930E-14	1.915E-14	1.904E-14	1.900E-14	1.901E-14	1.906E-14	1.912E-14	1.917E-14	0.000E+00
cs147	0.000E+00	5.339E-11	5.363E-11	5.299E-11	5.253E-11	5.229E-11	5.224E-11	5.233E-11	5.247E-11	5.260E-11	0.000E+00
ba147	0.000E+00	2.575E-08	2.548E-08	2.482E-08	2.427E-08	2.386E-08	2.357E-08	2.337E-08	2.332E-08	2.327E-08	0.000E+00

case 1 fission products page 22
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
la147	0.000E+00	1.114E-06	1.110E-06	1.086E-06	1.064E-06	1.046E-06	1.032E-06	1.021E-06	1.017E-06	1.012E-06	0.000E+00
ce147	0.000E+00	3.184E-05	3.230E-05	3.205E-05	3.176E-05	3.151E-05	3.128E-05	3.109E-05	3.102E-05	3.094E-05	0.000E+00
pr147	0.000E+00	4.766E-04	4.851E-04	4.826E-04	4.794E-04	4.764E-04	4.738E-04	4.715E-04	4.708E-04	4.698E-04	0.000E+00
nd147	0.000E+00	5.508E-01	5.624E-01	5.601E-01	5.569E-01	5.538E-01	5.512E-01	5.488E-01	5.481E-01	5.470E-01	1.321E-02
pm147	0.000E+00	2.753E+00	5.699E+00	8.273E+00	1.050E+01	1.243E+01	1.410E+01	1.554E+01	1.621E+01	1.685E+01	1.666E+01
sm147	0.000E+00	8.757E-02	3.895E-01	8.807E-01	1.530E+00	2.312E+00	3.200E+00	4.177E+00	4.723E+00	5.297E+00	6.018E+00
cs148	0.000E+00	3.659E-12	3.681E-12	3.641E-12	3.614E-12	3.601E-12	3.601E-12	3.610E-12	3.622E-12	3.633E-12	0.000E+00
ba148	0.000E+00	4.096E-09	4.081E-09	4.002E-09	3.940E-09	3.899E-09	3.876E-09	3.866E-09	3.868E-09	3.871E-09	0.000E+00
la148	0.000E+00	8.214E-08	8.168E-08	7.981E-08	7.821E-08	7.699E-08	7.607E-08	7.541E-08	7.521E-08	7.501E-08	0.000E+00
ce148	0.000E+00	2.249E-05	2.276E-05	2.254E-05	2.231E-05	2.211E-05	2.195E-05	2.182E-05	2.177E-05	2.172E-05	0.000E+00
pr148	0.000E+00	5.996E-05	6.126E-05	6.114E-05	6.092E-05	6.071E-05	6.055E-05	6.041E-05	6.040E-05	6.035E-05	0.000E+00
nd148	0.000E+00	2.634E+00	5.338E+00	8.042E+00	1.074E+01	1.343E+01	1.612E+01	1.879E+01	2.021E+01	2.165E+01	2.165E+01

pm148	0.000E+00	6.759E-03	1.421E-02	2.056E-02	2.602E-02	3.079E-02	3.497E-02	3.866E-02	4.054E-02	4.224E-02	2.672E-04
pm148m	0.000E+00	1.257E-02	3.002E-02	4.525E-02	5.843E-02	6.987E-02	7.981E-02	8.845E-02	9.257E-02	9.646E-02	3.583E-02
sm148	0.000E+00	4.430E-02	2.180E-01	5.166E-01	9.288E-01	1.445E+00	2.059E+00	2.763E+00	3.170E+00	3.609E+00	3.712E+00
cs149	0.000E+00	3.527E-14	3.560E-14	3.533E-14	3.514E-14	3.507E-14	3.511E-14	3.522E-14	3.533E-14	3.544E-14	0.000E+00
ba149	0.000E+00	4.962E-10	4.972E-10	4.902E-10	4.851E-10	4.823E-10	4.815E-10	4.822E-10	4.834E-10	4.847E-10	0.000E+00
la149	0.000E+00	5.181E-08	5.144E-08	5.026E-08	4.931E-08	4.864E-08	4.820E-08	4.795E-08	4.793E-08	4.791E-08	0.000E+00
ce149	0.000E+00	1.089E-06	1.096E-06	1.080E-06	1.066E-06	1.055E-06	1.046E-06	1.040E-06	1.038E-06	1.036E-06	0.000E+00
pr149	0.000E+00	3.879E-05	3.994E-05	4.013E-05	4.022E-05	4.030E-05	4.040E-05	4.050E-05	4.060E-05	4.066E-05	0.000E+00
nd149	0.000E+00	1.824E-03	1.886E-03	1.902E-03	1.912E-03	1.922E-03	1.931E-03	1.941E-03	1.947E-03	1.953E-03	0.000E+00
pm149	0.000E+00	5.768E-02	6.202E-02	6.457E-02	6.666E-02	6.850E-02	7.016E-02	7.167E-02	7.261E-02	7.335E-02	7.037E-10
sm149	0.000E+00	2.540E-01	2.712E-01	2.850E-01	2.961E-01	3.052E-01	3.126E-01	3.187E-01	3.151E-01	3.176E-01	3.930E-01
eu149	0.000E+00	3.110E-13	1.292E-12	2.619E-12	3.989E-12	5.244E-12	6.333E-12	7.258E-12	7.689E-12	8.092E-12	5.214E-12
cs150	0.000E+00	2.301E-15	2.323E-15	2.305E-15	2.293E-15	2.290E-15	2.293E-15	2.300E-15	2.308E-15	2.316E-15	0.000E+00
ba150	0.000E+00	6.011E-11	6.053E-11	5.994E-11	5.955E-11	5.941E-11	5.948E-11	5.971E-11	5.994E-11	6.017E-11	0.000E+00
la150	0.000E+00	1.985E-09	1.983E-09	1.951E-09	1.929E-09	1.918E-09	1.917E-09	1.924E-09	1.932E-09	1.940E-09	0.000E+00
ce150	0.000E+00	3.493E-07	3.520E-07	3.481E-07	3.450E-07	3.431E-07	3.425E-07	3.427E-07	3.435E-07	3.442E-07	0.000E+00
pr150	0.000E+00	1.028E-06	1.065E-06	1.077E-06	1.086E-06	1.095E-06	1.104E-06	1.114E-06	1.120E-06	1.125E-06	0.000E+00
nd150	0.000E+00	1.106E+00	2.274E+00	3.472E+00	4.693E+00	5.933E+00	7.191E+00	8.465E+00	9.146E+00	9.845E+00	9.845E+00
pm150	0.000E+00	1.190E-05	1.309E-05	1.367E-05	1.415E-05	1.460E-05	1.504E-05	1.546E-05	1.574E-05	1.596E-05	0.000E+00
sm150	0.000E+00	1.448E+00	3.307E+00	5.235E+00	7.213E+00	9.228E+00	1.127E+01	1.334E+01	1.445E+01	1.558E+01	1.558E+01
eu150	0.000E+00	2.356E-10	1.455E-09	3.822E-09	7.193E-09	1.138E-08	1.621E-08	2.157E-08	2.458E-08	2.777E-08	2.769E-08
ba151	0.000E+00	2.076E-13	2.096E-13	2.080E-13	2.069E-13	2.066E-13	2.069E-13	2.077E-13	2.085E-13	2.092E-13	0.000E+00
la151	0.000E+00	3.785E-10	3.800E-10	3.756E-10	3.730E-10	3.725E-10	3.737E-10	3.763E-10	3.785E-10	3.808E-10	0.000E+00
ce151	0.000E+00	2.400E-08	2.416E-08	2.391E-08	2.375E-08	2.371E-08	2.377E-08	2.392E-08	2.406E-08	2.419E-08	0.000E+00
pr151	0.000E+00	1.571E-06	1.631E-06	1.653E-06	1.671E-06	1.691E-06	1.712E-06	1.734E-06	1.748E-06	1.761E-06	0.000E+00
nd151	0.000E+00	9.282E-05	9.912E-05	1.026E-04	1.054E-04	1.079E-04	1.103E-04	1.125E-04	1.137E-04	1.148E-04	0.000E+00
pm151	0.000E+00	1.278E-02	1.367E-02	1.417E-02	1.457E-02	1.493E-02	1.527E-02	1.558E-02	1.575E-02	1.590E-02	1.548E-17
sm151	0.000E+00	5.351E-01	8.808E-01	1.111E+00	1.276E+00	1.404E+00	1.510E+00	1.602E+00	1.647E+00	1.691E+00	1.705E+00
eu151	0.000E+00	4.839E-04	1.356E-03	2.199E-03	2.903E-03	3.465E-03	3.912E-03	4.271E-03	4.434E-03	4.586E-03	6.708E-03
ba152	0.000E+00	8.522E-16	8.354E-16	8.268E-16	8.447E-16	8.885E-16	9.552E-16	1.042E-15	1.095E-15	1.153E-15	0.000E+00
la152	0.000E+00	1.645E-12	1.619E-12	1.589E-12	1.590E-12	1.621E-12	1.680E-12	1.762E-12	1.815E-12	1.872E-12	0.000E+00
ce152	0.000E+00	1.938E-08	1.934E-08	1.907E-08	1.895E-08	1.903E-08	1.928E-08	1.966E-08	1.993E-08	2.022E-08	0.000E+00
pr152	0.000E+00	1.703E-07	1.777E-07	1.810E-07	1.841E-07	1.875E-07	1.912E-07	1.953E-07	1.978E-07	2.002E-07	0.000E+00
nd152	0.000E+00	5.381E-05	5.808E-05	6.063E-05	6.274E-05	6.464E-05	6.641E-05	6.807E-05	6.897E-05	6.983E-05	0.000E+00
pm152	0.000E+00	1.984E-05	2.148E-05	2.247E-05	2.329E-05	2.402E-05	2.470E-05	2.533E-05	2.568E-05	2.600E-05	0.000E+00
pm152m	0.000E+00	9.043E-07	1.090E-06	1.223E-06	1.331E-06	1.421E-06	1.499E-06	1.566E-06	1.599E-06	1.630E-06	0.000E+00
sm152	0.000E+00	6.399E-01	1.552E+00	2.596E+00	3.703E+00	4.836E+00	5.974E+00	7.105E+00	7.699E+00	8.299E+00	8.299E+00
eu152	0.000E+00	7.886E-05	4.596E-04	1.137E-03	2.011E-03	2.986E-03	3.991E-03	4.980E-03	5.487E-03	5.989E-03	5.939E-03

case 1 fission products page 23
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d
eu152m	0.000E+00	6.875E-07	1.948E-06	3.140E-06	4.130E-06	4.926E-06	5.569E-06	6.102E-06	6.363E-06	6.601E-06	0.000E+00
gd152	0.000E+00	3.245E-05	2.007E-04	5.275E-04	9.932E-04	1.571E-03	2.237E-03	2.974E-03	3.389E-03	3.826E-03	3.845E-03
la153	0.000E+00	1.355E-12	1.367E-12	1.357E-12	1.351E-12	1.351E-12	1.356E-12	1.364E-12	1.371E-12	1.378E-12	0.000E+00
ce153	0.000E+00	1.527E-09	1.537E-09	1.524E-09	1.518E-09	1.520E-09	1.529E-09	1.545E-09	1.557E-09	1.568E-09	0.000E+00
pr153	0.000E+00	5.044E-08	5.164E-08	5.188E-08	5.226E-08	5.286E-08	5.367E-08	5.466E-08	5.529E-08	5.593E-08	0.000E+00
nd153	0.000E+00	3.084E-06	3.292E-06	3.411E-06	3.514E-06	3.611E-06	3.705E-06	3.799E-06	3.851E-06	3.901E-06	0.000E+00
pm153	0.000E+00	1.685E-05	1.829E-05	1.918E-05	1.993E-05	2.062E-05	2.126E-05	2.187E-05	2.220E-05	2.252E-05	0.000E+00
sm153	0.000E+00	1.009E-02	1.291E-02	1.569E-02	1.853E-02	2.139E-02	2.428E-02	2.716E-02	2.872E-02	3.029E-02	1.865E-11
eu153	0.000E+00	3.046E-01	6.895E-01	1.148E+00	1.678E+00	2.279E+00	2.947E+00	3.677E+00	4.088E+00	4.524E+00	4.554E+00
gd153	0.000E+00	1.045E-07	1.291E-06	5.004E-06	1.226E-05	2.358E-05	3.908E-05	5.869E-05	7.068E-05	8.398E-05	7.090E-05
la154	0.000E+00	1.616E-14	1.632E-14	1.622E-14	1.616E-14	1.618E-14	1.625E-14	1.636E-14	1.645E-14	1.654E-14	0.000E+00
ce154	0.000E+00	2.070E-10	2.090E-10	2.078E-10	2.076E-10	2.086E-10	2.106E-10	2.134E-10	2.153E-10	2.172E-10	0.000E+00
pr154	0.000E+00	1.983E-09	2.047E-09	2.077E-09	2.116E-09	2.167E-09	2.229E-09	2.301E-09	2.344E-09	2.389E-09	0.000E+00
nd154	0.000E+00	7.592E-07	8.308E-07	8.785E-07	9.212E-07	9.622E-07	1.002E-06	1.042E-06	1.064E-06	1.086E-06	0.000E+00
pm154	0.000E+00	2.304E-06	2.580E-06	2.772E-06	2.939E-06	3.094E-06	3.240E-06	3.380E-06	3.456E-06	3.529E-06	0.000E+00
pm154m	0.000E+00	5.385E-07	6.811E-07	7.882E-07	8.766E-07	9.523E-07	1.018E-06	1.077E-06	1.106E-06	1.134E-06	0.000E+00
sm154	0.000E+00	1.472E-01	3.197E-01	5.105E-01	7.167E-01	9.365E-01	1.169E+00	1.413E+00	1.546E+00	1.686E+00	1.686E+00
eu154	0.000E+00	8.006E-03	3.246E-02	7.289E-02	1.291E-01	2.012E-01	2.888E-01	3.920E-01	4.528E-01	5.191E-01	5.123E-01
gd154	0.000E+00	5.914E-05	4.751E-04	1.601E-03	3.780E-03	7.350E-03	1.264E-02	1.998E-02	2.481E-02	3.046E-02	3.718E-02
la155	0.000E+00	8.460E-17	8.547E-17	8.487E-17	8.448E-17	8.438E-17	8.452E-17	8.484E-17	8.514E-17	8.543E-17	0.000E+00
ce155	0.000E+00	4.742E-12	4.793E-12	4.767E-12	4.761E-12	4.778E-12	4.816E-12	4.869E-12	4.907E-12	4.945E-12	0.000E+00
pr155	0.000E+00	4.663E-10	4.773E-10	4.813E-10	4.882E-10	4.985E-10	5.119E-10	5.280E-10	5.379E-10	5.481E-10	0.000E+00
nd155	0.000E+00	1.149E-07	1.246E-07	1.311E-07	1.374E-07	1.439E-07	1.505E-07	1.574E-07	1.613E-07	1.652E-07	0.000E+00
pm155	0.000E+00	5.738E-07	6.675E-07	7.367E-07	7.968E-07	8.520E-07	9.038E-07	9.531E-07	9.792E-07	1.005E-06	0.000E+00
sm155	0.000E+00	1.783E-05	2.124E-05	2.380E-05	2.601E-05	2.802E-05	2.988E-05	3.163E-05	3.255E-05	3.344E-05	0.000E+00
eu155	0.000E+00	4.215E-02	6.530E-02	8.390E-02	1.025E-01	1.227E-01	1.450E-01	1.698E-01	1.839E-01	1.990E-01	1.943E-01
gd155m	0.000E+00	1.184E-15	3.312E-15	5.538E-15	7.812E-15	1.022E-14	1.285E-14	1.577E-14	1.748E-14	1.932E-14	0.000E+00
gd155	0.000E+00	7.991E-04	2.159E-03	3.549E-03	4.917E-03	6.309E-03	7.779E-03	9.370E-03	1.027E-02	1.124E-02	1.594E-02
ce156	0.000E+00	4.179E-13	4.227E-13	4.207E-13	4.203E-13	4.220E-13	4.254E-13	4.303E-13	4.336E-13	4.370E-13	0.000E+00
pr156	0.000E+00	2.092E-11	2.144E-11	2.169E-11	2.211E-11	2.273E-11	2.353E-11	2.447E-11	2.504E-11	2.563E-11	0.000E+00
nd156	0.000E+00	3.856E-08	4.189E-08	4.437E-08	4.693E-08	4.971E-08	5.271E-08	5.592E-08	5.773E-08	5.959E-08	0.000E+00

pm156	0.000E+00	6.341E-08	7.693E-08	8.746E-08	9.686E-08	1.057E-07	1.141E-07	1.222E-07	1.265E-07	1.308E-07	0.000E+00
sm156	0.000E+00	2.262E-04	2.900E-04	3.397E-04	3.827E-04	4.214E-04	4.571E-04	4.905E-04	5.078E-04	5.246E-04	0.000E+00
eu156	0.000E+00	1.747E-02	2.712E-02	3.417E-02	4.075E-02	4.755E-02	5.486E-02	6.280E-02	6.729E-02	7.210E-02	4.915E-03
gd156	0.000E+00	4.586E-02	1.504E-01	2.923E-01	4.654E-01	6.696E-01	9.065E-01	1.179E+00	1.338E+00	1.512E+00	1.580E+00
ce157	0.000E+00	7.279E-15	7.361E-15	7.323E-15	7.312E-15	7.333E-15	7.382E-15	7.454E-15	7.505E-15	7.557E-15	0.000E+00
pr157	0.000E+00	3.374E-12	3.435E-12	3.453E-12	3.499E-12	3.574E-12	3.675E-12	3.798E-12	3.874E-12	3.953E-12	0.000E+00
nd157	0.000E+00	1.205E-09	1.278E-09	1.335E-09	1.402E-09	1.483E-09	1.577E-09	1.682E-09	1.742E-09	1.805E-09	0.000E+00
pm157	0.000E+00	1.177E-07	1.426E-07	1.629E-07	1.818E-07	2.005E-07	2.192E-07	2.379E-07	2.481E-07	2.583E-07	0.000E+00
sm157	0.000E+00	1.724E-06	2.286E-06	2.736E-06	3.132E-06	3.495E-06	3.836E-06	4.161E-06	4.331E-06	4.497E-06	0.000E+00
eu157	0.000E+00	2.124E-04	2.865E-04	3.451E-04	3.968E-04	4.445E-04	4.899E-04	5.337E-04	5.570E-04	5.801E-04	0.000E+00
gd157	0.000E+00	7.828E-03	1.184E-02	1.499E-02	1.775E-02	2.029E-02	2.268E-02	2.497E-02	2.613E-02	2.731E-02	2.790E-02
pr158	0.000E+00	8.088E-14	8.214E-14	8.236E-14	8.318E-14	8.468E-14	8.676E-14	8.933E-14	9.094E-14	9.261E-14	0.000E+00
nd158	0.000E+00	2.354E-10	2.444E-10	2.510E-10	2.604E-10	2.729E-10	2.881E-10	3.058E-10	3.162E-10	3.270E-10	0.000E+00
pm158	0.000E+00	1.841E-09	2.181E-09	2.469E-09	2.758E-09	3.059E-09	3.375E-09	3.706E-09	3.889E-09	4.076E-09	0.000E+00
sm158	0.000E+00	5.511E-07	7.426E-07	8.986E-07	1.038E-06	1.169E-06	1.294E-06	1.414E-06	1.478E-06	1.541E-06	0.000E+00
eu158	0.000E+00	5.051E-06	6.942E-06	8.476E-06	9.836E-06	1.109E-05	1.228E-05	1.341E-05	1.400E-05	1.459E-05	0.000E+00
gd158	0.000E+00	2.166E-02	6.304E-02	1.176E-01	1.833E-01	2.591E-01	3.444E-01	4.388E-01	4.926E-01	5.498E-01	5.498E-01
pr159	0.000E+00	3.752E-15	3.803E-15	3.802E-15	3.823E-15	3.871E-15	3.941E-15	4.030E-15	4.087E-15	4.145E-15	0.000E+00
nd159	0.000E+00	5.266E-12	5.417E-12	5.519E-12	5.684E-12	5.919E-12	6.214E-12	6.562E-12	6.770E-12	6.988E-12	0.000E+00

case 1 fission products page 24
power= 2.43mw, burnup= 1959.mwd, flux= 1.78E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	100.0 d	200.0 d	300.0 d	400.0 d	500.0 d	600.0 d	700.0 d	753.0 d	807.0 d	866.0 d	
pm159	0.000E+00	3.136E-10	3.615E-10	4.047E-10	4.517E-10	5.041E-10	5.617E-10	6.241E-10	6.593E-10	6.957E-10	0.000E+00
sm159	0.000E+00	9.653E-08	1.317E-07	1.611E-07	1.884E-07	2.147E-07	2.406E-07	2.663E-07	2.801E-07	2.939E-07	0.000E+00
eu159	0.000E+00	8.617E-07	1.237E-06	1.547E-06	1.825E-06	2.084E-06	2.331E-06	2.570E-06	2.695E-06	2.820E-06	0.000E+00
gd159	0.000E+00	5.437E-05	7.895E-05	9.953E-05	1.182E-04	1.358E-04	1.528E-04	1.694E-04	1.782E-04	1.870E-04	0.000E+00
tb159	0.000E+00	3.670E-03	9.627E-03	1.745E-02	2.690E-02	3.783E-02	5.014E-02	6.377E-02	7.151E-02	7.974E-02	7.993E-02
nd160	0.000E+00	4.346E-13	4.435E-13	4.475E-13	4.554E-13	4.677E-13	4.838E-13	5.031E-13	5.149E-13	5.272E-13	0.000E+00
pm160	0.000E+00	9.099E-12	1.019E-11	1.120E-11	1.235E-11	1.368E-11	1.518E-11	1.683E-11	1.777E-11	1.874E-11	0.000E+00
sm160	0.000E+00	1.264E-08	1.704E-08	2.078E-08	2.431E-08	2.777E-08	3.123E-08	3.470E-08	3.657E-08	3.846E-08	0.000E+00
eu160	0.000E+00	1.329E-08	1.971E-08	2.501E-08	2.974E-08	3.412E-08	3.826E-08	4.223E-08	4.431E-08	4.637E-08	0.000E+00
gd160	0.000E+00	1.460E-03	4.009E-03	7.461E-03	1.170E-02	1.665E-02	2.225E-02	2.848E-02	3.202E-02	3.579E-02	3.579E-02
tb160	0.000E+00	1.962E-05	7.744E-05	1.677E-04	2.857E-04	4.287E-04	5.954E-04	7.848E-04	8.944E-04	1.012E-03	5.751E-04
dy160	0.000E+00	6.251E-06	4.873E-05	1.585E-04	3.601E-04	6.731E-04	1.114E-03	1.698E-03	2.070E-03	2.495E-03	2.933E-03

nd161	0.000E+00	7.207E-15	7.325E-15	7.350E-15	7.427E-15	7.564E-15	7.752E-15	7.983E-15	8.127E-15	8.276E-15	0.000E+00
pm161	0.000E+00	1.352E-12	1.447E-12	1.533E-12	1.644E-12	1.782E-12	1.944E-12	2.128E-12	2.234E-12	2.345E-12	0.000E+00
sm161	0.000E+00	1.771E-10	2.282E-10	2.732E-10	3.181E-10	3.644E-10	4.127E-10	4.628E-10	4.904E-10	5.185E-10	0.000E+00
eu161	0.000E+00	4.393E-09	6.735E-09	8.688E-09	1.044E-08	1.208E-08	1.364E-08	1.514E-08	1.593E-08	1.672E-08	0.000E+00
gd161	0.000E+00	3.115E-08	4.985E-08	6.526E-08	7.878E-08	9.108E-08	1.025E-07	1.133E-07	1.189E-07	1.244E-07	0.000E+00
tb161	0.000E+00	8.527E-05	1.370E-04	1.798E-04	2.177E-04	2.524E-04	2.848E-04	3.157E-04	3.290E-04	3.448E-04	9.203E-07
dy161	0.000E+00	5.114E-04	1.551E-03	2.974E-03	4.699E-03	6.669E-03	8.847E-03	1.120E-02	1.251E-02	1.388E-02	1.422E-02
pm162	0.000E+00	4.011E-14	4.169E-14	4.282E-14	4.437E-14	4.640E-14	4.885E-14	5.167E-14	5.333E-14	5.506E-14	0.000E+00
sm162	0.000E+00	3.910E-11	4.611E-11	5.209E-11	5.813E-11	6.445E-11	7.111E-11	7.808E-11	8.195E-11	8.590E-11	0.000E+00
eu162	0.000E+00	4.529E-09	6.911E-09	8.877E-09	1.062E-08	1.222E-08	1.372E-08	1.515E-08	1.590E-08	1.663E-08	0.000E+00
gd162	0.000E+00	3.034E-08	5.081E-08	6.740E-08	8.158E-08	9.408E-08	1.053E-07	1.156E-07	1.208E-07	1.259E-07	0.000E+00
tb162	0.000E+00	2.852E-08	4.785E-08	6.351E-08	7.688E-08	8.866E-08	9.926E-08	1.089E-07	1.138E-07	1.186E-07	0.000E+00
tb162m	0.000E+00	8.442E-09	1.573E-08	2.152E-08	2.628E-08	3.028E-08	3.369E-08	3.664E-08	3.807E-08	3.941E-08	0.000E+00
dy162	0.000E+00	2.453E-04	7.932E-04	1.604E-03	2.648E-03	3.903E-03	5.351E-03	6.978E-03	7.903E-03	8.892E-03	8.892E-03
sm163	0.000E+00	8.247E-13	9.305E-13	1.022E-12	1.120E-12	1.228E-12	1.346E-12	1.473E-12	1.545E-12	1.619E-12	0.000E+00
eu163	0.000E+00	4.078E-11	6.172E-11	7.919E-11	9.489E-11	1.095E-10	1.235E-10	1.370E-10	1.442E-10	1.512E-10	0.000E+00
gd163	0.000E+00	1.908E-09	3.262E-09	4.360E-09	5.298E-09	6.123E-09	6.866E-09	7.543E-09	7.887E-09	8.218E-09	0.000E+00
tb163	0.000E+00	2.761E-08	4.771E-08	6.397E-08	7.778E-08	8.987E-08	1.007E-07	1.104E-07	1.154E-07	1.201E-07	0.000E+00
tb163m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy163	0.000E+00	9.250E-05	3.211E-04	6.816E-04	1.173E-03	1.795E-03	2.552E-03	3.446E-03	3.975E-03	4.556E-03	4.556E-03
sm164	0.000E+00	7.786E-14	8.320E-14	8.746E-14	9.241E-14	9.824E-14	1.049E-13	1.122E-13	1.165E-13	1.209E-13	0.000E+00
eu164	0.000E+00	1.051E-12	1.509E-12	1.893E-12	2.245E-12	2.580E-12	2.905E-12	3.225E-12	3.395E-12	3.564E-12	0.000E+00
gd164	0.000E+00	8.005E-09	1.366E-08	1.824E-08	2.216E-08	2.560E-08	2.871E-08	3.154E-08	3.298E-08	3.437E-08	0.000E+00
tb164	0.000E+00	1.535E-09	2.680E-09	3.605E-09	4.386E-09	5.066E-09	5.669E-09	6.212E-09	6.486E-09	6.747E-09	0.000E+00
dy164	0.000E+00	3.104E-05	1.038E-04	2.112E-04	3.491E-04	5.154E-04	7.093E-04	9.312E-04	1.060E-03	1.200E-03	1.200E-03
sm165	0.000E+00	1.466E-15	1.519E-15	1.551E-15	1.594E-15	1.650E-15	1.718E-15	1.796E-15	1.842E-15	1.890E-15	0.000E+00
eu165	0.000E+00	1.335E-13	1.691E-13	1.990E-13	2.274E-13	2.554E-13	2.835E-13	3.120E-13	3.274E-13	3.429E-13	0.000E+00
gd165	0.000E+00	6.212E-11	1.002E-10	1.310E-10	1.576E-10	1.813E-10	2.028E-10	2.226E-10	2.328E-10	2.426E-10	0.000E+00
tb165	0.000E+00	3.879E-10	6.666E-10	8.906E-10	1.079E-09	1.243E-09	1.387E-09	1.517E-09	1.581E-09	1.643E-09	0.000E+00
dy165	0.000E+00	3.576E-08	7.472E-08	1.180E-07	1.660E-07	2.193E-07	2.784E-07	3.439E-07	3.818E-07	4.223E-07	0.000E+00
dy165m	0.000E+00	2.545E-10	5.250E-10	8.231E-10	1.153E-09	1.518E-09	1.922E-09	2.369E-09	2.628E-09	2.904E-09	0.000E+00
ho165	0.000E+00	1.433E-05	5.368E-05	1.212E-04	2.197E-04	3.521E-04	5.215E-04	7.314E-04	8.603E-04	1.005E-03	1.005E-03
dy166	0.000E+00	1.455E-07	2.695E-07	3.685E-07	4.504E-07	5.198E-07	5.797E-07	6.320E-07	6.583E-07	6.825E-07	4.083E-12
ho166	0.000E+00	5.399E-08	1.114E-07	1.719E-07	2.394E-07	3.167E-07	4.065E-07	5.113E-07	5.744E-07	6.437E-07	1.997E-12
ho166m	0.000E+00	2.498E-08	1.009E-07	2.304E-07	4.187E-07	6.741E-07	1.007E-06	1.431E-06	1.697E-06	2.002E-06	2.002E-06
er166	0.000E+00	1.653E-06	6.726E-06	1.537E-05	2.789E-05	4.481E-05	6.679E-05	9.466E-05	1.121E-04	1.321E-04	1.334E-04
er167	0.000E+00	4.055E-09	2.945E-08	9.286E-08	2.090E-07	3.928E-07	6.599E-07	1.028E-06	1.271E-06	1.557E-06	1.557E-06
er167m	0.000E+00	3.632E-17	6.784E-17	9.282E-17	1.133E-16	1.304E-16	1.449E-16	1.573E-16	1.633E-16	1.689E-16	0.000E+00

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case 1                                                    fission products      page  25
power=  2.43mw, burnup=  1959.mwd, flux= 1.78E+13n/cm**2-sec

                        nuclide concentrations, grams
                        basis = fuel assembly (.1902 mtu)
      charge  100.0 d  200.0 d  300.0 d  400.0 d  500.0 d  600.0 d  700.0 d  753.0 d  807.0 d  866.0 d
 er168  0.000E+00 1.427E-09 7.921E-09 2.568E-08 6.437E-08 1.370E-07 2.603E-07 4.548E-07 5.953E-07 7.708E-07 7.708E-07
 er169  0.000E+00 6.966E-10 1.305E-09 1.791E-09 2.192E-09 2.530E-09 2.821E-09 3.074E-09 3.110E-09 3.224E-09 4.159E-11
 er170  0.000E+00 2.957E-09 1.082E-08 2.271E-08 3.793E-08 5.600E-08 7.654E-08 9.927E-08 1.121E-07 1.257E-07 1.257E-07
 er171  0.000E+00 3.303E-11 5.995E-11 8.146E-11 9.933E-11 1.145E-10 1.277E-10 1.393E-10 1.450E-10 1.504E-10 0.000E+00
 er172  0.000E+00 1.365E-10 2.407E-10 3.247E-10 3.956E-10 4.573E-10 5.119E-10 5.610E-10 5.860E-10 6.096E-10 1.380E-18
totals  0.000E+00 2.422E+02 4.915E+02 7.417E+02 9.919E+02 1.242E+03 1.492E+03 1.741E+03 1.873E+03 2.007E+03 2.007E+03

 flux          1.775E+13 1.795E+13 1.783E+13 1.775E+13 1.773E+13 1.776E+13 1.782E+13 1.787E+13 1.793E+13 0.000E+00

library information...

    cross-section data taken from position number  2 of library on unit 33.

    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    ********************************************************************************
    *                                                                              *
    *        prelim lwr origen-s binary working library--id = 1143                 *
    *      made from modified card-image origen-s libraries of scale 4.2           *
```

```
*    data from the light element, actinide, and fission product libraries    *
*      decay data, including gamma and total energy, are from endf/b-vi      *
*                                                                            *
*    neutron flux spectrum factors and cross sections were produced from     *
*   the "presas2" case updating all nuclides on the scale "burnup" library   *
*                                                                            *
*              fission product yields are from endf/b-v                      *
*                                                                            *
*          photon libraries use an 18-energy-group structure                 *
*         the photon data are from the master photon data base,              *
*          produced to include bremsstrahlung from uo2 matrix                *
*                                                                            *
*     see information above this box (if present) for later updates          *
*                                                                            *
******************************************************************************
*                                                                            *

******************************************************************************

      .other identification and sizes of library.

       data set name:  C:\scale5\tmpdir\ft33f001

     8/15/ 94    date library was produced

         1697   total number of nuclides in library
          689   number of light-element nuclides
          129   number of actinide nuclides
          879   number of fission product nuclides

         8025   number of nonzero off-diagonal matrix elements

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case 2 light elements page 26
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
h 1	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.098E+03	3.097E+03	3.097E+03	3.097E+03
h 2	2.940E+00	3.083E+00	3.228E+00	3.373E+00	3.519E+00	3.666E+00	3.815E+00	3.964E+00	4.114E+00	4.417E+00	4.417E+00
h 3	1.110E-06	1.245E-06	1.387E-06	1.535E-06	1.690E-06	1.851E-06	2.019E-06	2.195E-06	2.378E-06	2.769E-06	2.756E-06
h 4	0.000E+00	2.312E-25	2.599E-25	2.894E-25	3.206E-25	3.534E-25	3.880E-25	4.246E-25	4.630E-25	5.447E-25	0.000E+00
he 3	3.418E-08	3.031E-08	2.792E-08	2.669E-08	2.635E-08	2.669E-08	2.758E-08	2.888E-08	3.051E-08	3.455E-08	4.773E-08
he 4	1.306E+00	1.339E+00	1.371E+00	1.402E+00	1.433E+00	1.463E+00	1.493E+00	1.523E+00	1.553E+00	1.612E+00	1.612E+00
he 6	0.000E+00	9.907E-16	1.004E-15	1.014E-15	1.023E-15	1.032E-15	1.040E-15	1.048E-15	1.056E-15	1.068E-15	0.000E+00
li 6	1.117E-07	1.199E-07	1.278E-07	1.355E-07	1.429E-07	1.500E-07	1.568E-07	1.634E-07	1.697E-07	1.815E-07	1.815E-07
li 7	1.646E+00	1.655E+00	1.662E+00	1.668E+00	1.672E+00	1.675E+00	1.678E+00	1.680E+00	1.681E+00	1.683E+00	1.683E+00
li 8	0.000E+00	1.643E-12	1.666E-12	1.682E-12	1.696E-12	1.711E-12	1.724E-12	1.738E-12	1.751E-12	1.771E-12	0.000E+00
be 8	0.000E+00	3.922E-18	3.975E-18	4.013E-18	4.049E-18	4.083E-18	4.115E-18	4.147E-18	4.178E-18	4.226E-18	0.000E+00
be 9	1.505E-06	1.520E-06	1.533E-06	1.545E-06	1.555E-06	1.565E-06	1.574E-06	1.583E-06	1.591E-06	1.607E-06	1.607E-06
be 10	1.605E-05	1.664E-05	1.725E-05	1.788E-05	1.855E-05	1.926E-05	2.000E-05	2.079E-05	2.161E-05	2.340E-05	2.340E-05
be 11	0.000E+00	6.937E-15	7.002E-15	7.047E-15	7.092E-15	7.138E-15	7.185E-15	7.232E-15	7.280E-15	7.357E-15	0.000E+00
b 10	5.675E-02	4.346E-02	3.319E-02	2.531E-02	1.927E-02	1.464E-02	1.111E-02	8.409E-03	6.355E-03	3.608E-03	3.608E-03
b 11	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01
b 12	0.000E+00	4.215E-14	4.254E-14	4.281E-14	4.308E-14	4.336E-14	4.364E-14	4.393E-14	4.422E-14	4.469E-14	0.000E+00
c 12	5.134E-05	5.517E-05	5.903E-05	6.291E-05	6.682E-05	7.075E-05	7.471E-05	7.870E-05	8.271E-05	9.082E-05	9.082E-05
c 13	1.177E+00	1.266E+00	1.355E+00	1.445E+00	1.536E+00	1.627E+00	1.719E+00	1.811E+00	1.904E+00	2.092E+00	2.092E+00
c 14	2.929E-03	3.146E-03	3.366E-03	3.586E-03	3.809E-03	4.032E-03	4.258E-03	4.484E-03	4.712E-03	5.173E-03	5.173E-03
c 15	0.000E+00	4.043E-11	4.081E-11	4.106E-11	4.132E-11	4.159E-11	4.186E-11	4.214E-11	4.242E-11	4.286E-11	0.000E+00
n 13	0.000E+00	3.442E-20	3.713E-20	3.993E-20	4.293E-20	4.614E-20	4.956E-20	5.319E-20	5.705E-20	6.526E-20	0.000E+00
n 14	4.483E-07	4.791E-07	5.120E-07	5.471E-07	5.845E-07	6.242E-07	6.661E-07	7.103E-07	7.568E-07	8.567E-07	9.099E-07
n 15	1.110E-03	1.194E-03	1.279E-03	1.364E-03	1.450E-03	1.536E-03	1.623E-03	1.710E-03	1.798E-03	1.976E-03	1.976E-03
n 16	0.000E+00	1.088E-09	1.098E-09	1.105E-09	1.112E-09	1.119E-09	1.127E-09	1.134E-09	1.142E-09	1.154E-09	0.000E+00
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04
o 17	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.038E+01	2.039E+01	2.039E+01	2.039E+01
o 18	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02
o 19	0.000E+00	5.171E-11	5.219E-11	5.252E-11	5.286E-11	5.320E-11	5.355E-11	5.390E-11	5.425E-11	5.482E-11	0.000E+00
f 19	4.863E-05	5.215E-05	5.571E-05	5.928E-05	6.288E-05	6.651E-05	7.015E-05	7.382E-05	7.752E-05	8.498E-05	8.498E-05
f 20	0.000E+00	2.477E-16	2.670E-16	2.860E-16	3.053E-16	3.249E-16	3.450E-16	3.654E-16	3.862E-16	4.279E-16	0.000E+00

ti 46	1.025E-16	1.178E-16	1.443E-16	1.815E-16	2.295E-16	2.892E-16	3.619E-16	4.493E-16	5.536E-16	8.242E-16	9.662E-16
ti 47	3.293E-05	3.529E-05	3.768E-05	4.008E-05	4.249E-05	4.491E-05	4.735E-05	4.980E-05	5.226E-05	5.723E-05	5.723E-05
ti 48	3.513E-08	4.042E-08	4.619E-08	5.238E-08	5.898E-08	6.602E-08	7.351E-08	8.144E-08	8.984E-08	1.081E-07	1.082E-07
ti 49	7.502E-05	8.045E-05	8.592E-05	9.142E-05	9.696E-05	1.025E-04	1.081E-04	1.138E-04	1.195E-04	1.310E-04	1.310E-04
ti 50	3.543E-04	3.798E-04	4.056E-04	4.315E-04	4.576E-04	4.838E-04	5.101E-04	5.367E-04	5.634E-04	6.172E-04	6.172E-04
ti 51	0.000E+00	2.889E-11	2.972E-11	3.056E-11	3.146E-11	3.240E-11	3.336E-11	3.435E-11	3.535E-11	3.731E-11	0.000E+00
v 49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
v 50	1.324E-03	1.415E-03	1.507E-03	1.599E-03	1.691E-03	1.784E-03	1.876E-03	1.968E-03	2.060E-03	2.245E-03	2.245E-03
v 51	2.260E-01	2.324E-01	2.444E-01	2.591E-01	2.751E-01	2.917E-01	3.086E-01	3.258E-01	3.431E-01	3.781E-01	3.905E-01
v 52	0.000E+00	1.757E-08	1.824E-08	1.898E-08	1.979E-08	2.063E-08	2.150E-08	2.240E-08	2.331E-08	2.511E-08	0.000E+00
v 53	0.000E+00	4.715E-11	4.757E-11	4.784E-11	4.811E-11	4.840E-11	4.868E-11	4.897E-11	4.927E-11	4.972E-11	0.000E+00
v 54	0.000E+00	2.651E-13	2.686E-13	2.714E-13	2.742E-13	2.770E-13	2.799E-13	2.829E-13	2.859E-13	2.912E-13	0.000E+00
cr 50	1.858E+01	1.856E+01	1.854E+01	1.853E+01	1.851E+01	1.849E+01	1.848E+01	1.846E+01	1.844E+01	1.841E+01	1.841E+01
cr 51	2.593E-03	1.300E-02	1.794E-02	2.030E-02	2.146E-02	2.207E-02	2.242E-02	2.265E-02	2.283E-02	2.311E-02	1.064E-02
cr 52	3.764E+02	3.764E+02	3.764E+02	3.764E+02	3.763E+02	3.763E+02	3.763E+02	3.763E+02	3.763E+02	3.762E+02	3.762E+02
cr 53	4.318E+01	4.316E+01	4.313E+01	4.311E+01	4.308E+01	4.306E+01	4.303E+01	4.300E+01	4.298E+01	4.292E+01	4.292E+01
cr 54	1.163E+01	1.168E+01	1.172E+01	1.177E+01	1.181E+01	1.186E+01	1.191E+01	1.195E+01	1.200E+01	1.210E+01	1.210E+01
cr 55	0.000E+00	2.845E-08	2.883E-08	2.912E-08	2.941E-08	2.972E-08	3.002E-08	3.034E-08	3.066E-08	3.122E-08	0.000E+00
mn 54	5.237E-03	5.790E-03	6.314E-03	6.810E-03	7.278E-03	7.721E-03	8.141E-03	8.539E-03	8.916E-03	9.617E-03	8.977E-03

case 2 light elements page 27
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
mn 55	2.862E+01	2.859E+01	2.856E+01	2.854E+01	2.851E+01	2.848E+01	2.845E+01	2.842E+01	2.839E+01	2.834E+01	2.834E+01
mn 56	0.000E+00	1.580E-04	1.593E-04	1.602E-04	1.610E-04	1.619E-04	1.628E-04	1.637E-04	1.646E-04	1.660E-04	0.000E+00
mn 57	0.000E+00	1.146E-10	1.163E-10	1.177E-10	1.192E-10	1.207E-10	1.221E-10	1.237E-10	1.252E-10	1.280E-10	0.000E+00
mn 58	0.000E+00	2.776E-13	2.807E-13	2.830E-13	2.854E-13	2.878E-13	2.903E-13	2.928E-13	2.954E-13	2.998E-13	0.000E+00
fe 54	6.721E+01	6.720E+01	6.719E+01	6.718E+01	6.717E+01	6.716E+01	6.715E+01	6.714E+01	6.713E+01	6.711E+01	6.711E+01
fe 55	8.799E-02	9.491E-02	1.018E-01	1.085E-01	1.152E-01	1.218E-01	1.283E-01	1.348E-01	1.411E-01	1.536E-01	1.504E-01
fe 56	1.101E+03	1.101E+03	1.101E+03	1.101E+03	1.100E+03	1.100E+03	1.100E+03	1.100E+03	1.100E+03	1.100E+03	1.100E+03
fe 57	2.853E+01	2.870E+01	2.887E+01	2.903E+01	2.920E+01	2.937E+01	2.954E+01	2.972E+01	2.989E+01	3.024E+01	3.024E+01
fe 58	3.724E+00	3.730E+00	3.737E+00	3.744E+00	3.751E+00	3.759E+00	3.766E+00	3.774E+00	3.782E+00	3.799E+00	3.802E+00
fe 59	1.341E-04	3.307E-04	4.555E-04	5.350E-04	5.865E-04	6.206E-04	6.440E-04	6.607E-04	6.734E-04	6.921E-04	4.270E-04
co 58m	0.000E+00	1.861E-09	1.871E-09	1.877E-09	1.882E-09	1.888E-09	1.894E-09	1.900E-09	1.907E-09	1.914E-09	0.000E+00
co 58	4.751E-03	8.084E-03	1.001E-02	1.112E-02	1.176E-02	1.214E-02	1.238E-02	1.252E-02	1.263E-02	1.276E-02	9.422E-03

co 59	4.810E+00	4.796E+00	4.782E+00	4.769E+00	4.756E+00	4.743E+00	4.731E+00	4.718E+00	4.706E+00	4.680E+00	4.681E+00	
co 60	1.928E-01	2.069E-01	2.210E-01	2.350E-01	2.488E-01	2.626E-01	2.763E-01	2.899E-01	3.035E-01	3.303E-01	3.266E-01	
co 60m	0.000E+00	3.023E-06	3.043E-06	3.054E-06	3.065E-06	3.077E-06	3.088E-06	3.100E-06	3.113E-06	3.128E-06	0.000E+00	
co 61	0.000E+00	1.444E-07	1.553E-07	1.658E-07	1.763E-07	1.869E-07	1.976E-07	2.084E-07	2.193E-07	2.406E-07	0.000E+00	
co 62	0.000E+00	1.731E-11	1.746E-11	1.755E-11	1.765E-11	1.775E-11	1.786E-11	1.796E-11	1.807E-11	1.823E-11	0.000E+00	
ni 58	3.021E+02	3.020E+02	3.020E+02	3.019E+02	3.018E+02	3.017E+02	3.016E+02	3.015E+02	3.014E+02	3.012E+02	3.012E+02	
ni 59	1.011E+00	1.081E+00	1.152E+00	1.222E+00	1.292E+00	1.362E+00	1.432E+00	1.502E+00	1.572E+00	1.710E+00	1.710E+00	
ni 60	1.198E+02	1.198E+02	1.198E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	
ni 61	5.533E+00	5.552E+00	5.571E+00	5.590E+00	5.609E+00	5.629E+00	5.648E+00	5.668E+00	5.687E+00	5.727E+00	5.727E+00	
ni 62	1.688E+01	1.686E+01	1.685E+01	1.684E+01	1.683E+01	1.681E+01	1.680E+01	1.679E+01	1.677E+01	1.675E+01	1.675E+01	
ni 63	1.819E-01	1.952E-01	2.086E-01	2.221E-01	2.356E-01	2.492E-01	2.628E-01	2.765E-01	2.903E-01	3.180E-01	3.178E-01	
ni 64	4.456E+00	4.456E+00	4.456E+00	4.456E+00	4.455E+00	4.455E+00	4.455E+00	4.455E+00	4.455E+00	4.454E+00	4.454E+00	
ni 65	0.000E+00	2.102E-06	2.122E-06	2.135E-06	2.149E-06	2.162E-06	2.176E-06	2.191E-06	2.205E-06	2.228E-06	0.000E+00	
ni 66	1.279E-18	3.074E-10	3.133E-10	3.172E-10	3.212E-10	3.254E-10	3.296E-10	3.340E-10	3.384E-10	3.455E-10	2.737E-14	
cu 62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
cu 63	1.603E-03	1.712E-03	1.828E-03	1.952E-03	2.084E-03	2.224E-03	2.372E-03	2.528E-03	2.691E-03	3.042E-03	3.229E-03	
cu 64	0.000E+00	1.417E-08	1.527E-08	1.642E-08	1.764E-08	1.894E-08	2.033E-08	2.181E-08	2.337E-08	2.669E-08	6.183E-26	
cu 65	5.745E-03	6.166E-03	6.594E-03	7.024E-03	7.457E-03	7.893E-03	8.331E-03	8.772E-03	9.216E-03	1.011E-02	1.012E-02	
cu 66	1.993E-21	1.659E-10	1.791E-10	1.919E-10	2.050E-10	2.184E-10	2.320E-10	2.458E-10	2.600E-10	2.882E-10	4.267E-17	
cu 67	3.727E-21	1.188E-13	1.294E-13	1.396E-13	1.501E-13	1.609E-13	1.720E-13	1.835E-13	1.953E-13	2.188E-13	5.222E-17	
zn 63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
zn 64	7.857E-07	9.845E-07	1.204E-06	1.440E-06	1.693E-06	1.966E-06	2.258E-06	2.572E-06	2.908E-06	3.655E-06	3.665E-06	
zn 65	1.108E-10	1.631E-10	2.265E-10	3.011E-10	3.875E-10	4.862E-10	5.979E-10	7.233E-10	8.631E-10	1.190E-09	1.089E-09	
zn 66	6.294E-06	7.253E-06	8.291E-06	9.405E-06	1.060E-05	1.187E-05	1.322E-05	1.465E-05	1.617E-05	1.947E-05	1.947E-05	
zn 67	1.680E-09	2.079E-09	2.540E-09	3.068E-09	3.669E-09	4.348E-09	5.113E-09	5.967E-09	6.918E-09	9.137E-09	9.137E-09	
zn 68	4.917E-12	6.510E-12	8.487E-12	1.090E-11	1.382E-11	1.732E-11	2.148E-11	2.638E-11	3.212E-11	4.652E-11	4.652E-11	
zn 69	0.000E+00	1.649E-18	2.170E-18	2.806E-18	3.580E-18	4.515E-18	5.635E-18	6.966E-18	8.537E-18	1.249E-17	4.779E-35	
zn 69m	0.000E+00	1.625E-18	2.138E-18	2.763E-18	3.526E-18	4.447E-18	5.550E-18	6.861E-18	8.409E-18	1.231E-17	6.528E-34	
zn 70	8.851E-21	1.343E-20	1.993E-20	2.894E-20	4.123E-20	5.772E-20	7.955E-20	1.081E-19	1.450E-19	2.523E-19	2.523E-19	
zn 71	0.000E+00	3.901E-30	5.842E-30	8.537E-30	1.224E-29	1.724E-29	2.392E-29	3.272E-29	4.419E-29	7.767E-29	0.000E+00	
zn 71m	0.000E+00	3.967E-29	5.942E-29	8.683E-29	1.245E-28	1.754E-28	2.433E-28	3.328E-28	4.495E-28	7.900E-28	0.000E+00	
sr 84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 87	4.945E-04	5.296E-04	5.650E-04	6.005E-04	6.362E-04	6.720E-04	7.079E-04	7.440E-04	7.802E-04	8.532E-04	8.532E-04	
sr 87m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 88	4.588E-02	4.920E-02	5.255E-02	5.592E-02	5.931E-02	6.272E-02	6.616E-02	6.961E-02	7.309E-02	8.013E-02	8.013E-02	

case 2 light elements page 28
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
sr 89	1.413E-04	2.996E-04	4.056E-04	4.766E-04	5.246E-04	5.576E-04	5.806E-04	5.972E-04	6.096E-04	6.269E-04	4.098E-04
sr 90	6.490E-07	7.360E-07	8.334E-07	9.398E-07	1.054E-06	1.177E-06	1.307E-06	1.444E-06	1.588E-06	1.900E-06	1.896E-06
sr 91	0.000E+00	2.898E-07	2.926E-07	2.944E-07	2.963E-07	2.982E-07	3.001E-07	3.021E-07	3.041E-07	3.073E-07	0.000E+00
sr 93	0.000E+00	4.262E-11	4.302E-11	4.328E-11	4.355E-11	4.383E-11	4.411E-11	4.439E-11	4.468E-11	4.514E-11	0.000E+00
y 89	3.352E-03	3.446E-03	3.596E-03	3.781E-03	3.992E-03	4.219E-03	4.458E-03	4.705E-03	4.958E-03	5.477E-03	5.694E-03
y 89m	4.831E-14	1.024E-13	1.387E-13	1.630E-13	1.794E-13	1.907E-13	1.985E-13	2.042E-13	2.084E-13	2.144E-13	1.401E-13
y 90	3.084E-10	1.180E-03	1.192E-03	1.199E-03	1.207E-03	1.215E-03	1.223E-03	1.231E-03	1.239E-03	1.251E-03	4.022E-07
y 90m	0.000E+00	1.289E-12	1.358E-12	1.437E-12	1.526E-12	1.624E-12	1.727E-12	1.834E-12	1.946E-12	2.172E-12	0.000E+00
y 91	4.653E-04	8.652E-04	1.149E-03	1.349E-03	1.492E-03	1.595E-03	1.671E-03	1.727E-03	1.769E-03	1.830E-03	1.267E-03
y 92	0.000E+00	3.937E-06	3.974E-06	4.000E-06	4.026E-06	4.052E-06	4.079E-06	4.106E-06	4.134E-06	4.178E-06	0.000E+00
y 93	0.000E+00	2.275E-09	2.297E-09	2.311E-09	2.325E-09	2.340E-09	2.355E-09	2.370E-09	2.386E-09	2.410E-09	0.000E+00
y 94	0.000E+00	2.097E-08	2.117E-08	2.130E-08	2.144E-08	2.158E-08	2.172E-08	2.186E-08	2.200E-08	2.223E-08	0.000E+00
y 96	0.000E+00	7.757E-13	7.829E-13	7.877E-13	7.927E-13	7.977E-13	8.028E-13	8.080E-13	8.132E-13	8.216E-13	0.000E+00
zr 89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zr 90	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.983E+04	4.982E+04	4.982E+04
zr 91	1.095E+04	1.094E+04	1.094E+04	1.094E+04	1.094E+04	1.094E+04	1.094E+04	1.094E+04	1.094E+04	1.093E+04	1.093E+04
zr 92	1.694E+04	1.694E+04	1.694E+04	1.694E+04	1.694E+04	1.694E+04	1.694E+04	1.694E+04	1.695E+04	1.695E+04	1.695E+04
zr 93	7.783E+00	8.346E+00	8.914E+00	9.486E+00	1.006E+01	1.064E+01	1.122E+01	1.180E+01	1.239E+01	1.358E+01	1.358E+01
zr 94	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.759E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04
zr 95	1.689E-01	2.929E-01	3.836E-01	4.497E-01	4.983E-01	5.343E-01	5.613E-01	5.819E-01	5.978E-01	6.207E-01	4.437E-01
zr 96	2.886E+03	2.886E+03	2.886E+03	2.885E+03	2.885E+03	2.885E+03	2.884E+03	2.884E+03	2.884E+03	2.883E+03	2.883E+03
zr 97	0.000E+00	1.070E-02	1.080E-02	1.086E-02	1.093E-02	1.100E-02	1.107E-02	1.114E-02	1.122E-02	1.133E-02	6.335E-16
nb 91	6.919E-17	9.503E-17	1.239E-16	1.559E-16	1.912E-16	2.303E-16	2.732E-16	3.203E-16	3.720E-16	4.903E-16	4.902E-16
nb 92	1.329E-13	1.826E-13	2.380E-13	2.994E-13	3.674E-13	4.423E-13	5.248E-13	6.154E-13	7.147E-13	9.419E-13	9.419E-13
nb 93	1.488E-07	1.648E-07	1.819E-07	2.002E-07	2.197E-07	2.405E-07	2.626E-07	2.862E-07	3.114E-07	3.664E-07	3.971E-07
nb 93m	4.323E-06	4.613E-06	4.923E-06	5.254E-06	5.605E-06	5.977E-06	6.370E-06	6.783E-06	7.217E-06	8.148E-06	8.639E-06
nb 94	1.069E-10	1.467E-10	1.911E-10	2.402E-10	2.945E-10	3.543E-10	4.199E-10	4.920E-10	5.708E-10	7.510E-10	7.510E-10
nb 95	1.378E-01	1.347E-01	1.591E-01	1.913E-01	2.228E-01	2.502E-01	2.728E-01	2.909E-01	3.052E-01	3.255E-01	3.060E-01
nb 95m	1.120E-04	1.716E-04	2.315E-04	2.752E-04	3.073E-04	3.310E-04	3.488E-04	3.623E-04	3.727E-04	4.001E-04	2.943E-04
nb 96	1.266E-24	3.348E-06	3.980E-06	4.816E-06	5.646E-06	6.385E-06	7.010E-06	7.527E-06	7.951E-06	8.510E-06	2.179E-15
nb 97	0.000E+00	7.607E-04	7.677E-04	7.725E-04	7.773E-04	7.823E-04	7.873E-04	7.924E-04	7.975E-04	8.057E-04	4.854E-17

nb 97m	0.000E+00	1.000E-05	1.009E-05	1.016E-05	1.022E-05	1.029E-05	1.035E-05	1.042E-05	1.049E-05	1.059E-05	5.929E-19
nb 98	0.000E+00	3.936E-17	4.531E-17	5.162E-17	5.842E-17	6.573E-17	7.358E-17	8.198E-17	9.095E-17	1.104E-16	0.000E+00
nb100	0.000E+00	9.210E-26	1.272E-25	1.678E-25	2.145E-25	2.681E-25	3.293E-25	3.987E-25	4.771E-25	6.624E-25	0.000E+00
mo 92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 94	2.206E-15	2.568E-15	3.050E-15	3.666E-15	4.430E-15	5.356E-15	6.462E-15	7.765E-15	9.283E-15	1.305E-14	1.523E-14
mo 95	2.446E+00	2.520E+00	2.602E+00	2.702E+00	2.820E+00	2.957E+00	3.108E+00	3.270E+00	3.442E+00	3.807E+00	4.003E+00
mo 96	3.522E-02	4.170E-02	4.844E-02	5.547E-02	6.285E-02	7.063E-02	7.886E-02	8.757E-02	9.680E-02	1.169E-01	1.169E-01
mo 97	4.486E+00	4.795E+00	5.118E+00	5.443E+00	5.770E+00	6.099E+00	6.430E+00	6.763E+00	7.097E+00	7.773E+00	7.786E+00
mo 98	1.314E-02	1.511E-02	1.723E-02	1.951E-02	2.194E-02	2.452E-02	2.728E-02	3.019E-02	3.327E-02	3.995E-02	3.995E-02
mo 99	4.649E-14	2.926E-07	3.369E-07	3.838E-07	4.344E-07	4.888E-07	5.471E-07	6.096E-07	6.763E-07	8.203E-07	3.293E-10
mo100	3.897E-10	5.396E-10	7.385E-10	9.676E-10	1.229E-09	1.527E-09	1.863E-09	2.241E-09	2.664E-09	3.660E-09	3.660E-09
mo101	0.000E+00	2.375E-17	3.281E-17	4.326E-17	5.532E-17	6.915E-17	8.492E-17	1.028E-16	1.230E-16	1.708E-16	0.000E+00
cd106	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.485E-43	2.971E-43	7.427E-43	1.485E-42	4.753E-42	4.753E-42
cd107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd108	8.685E-39	2.343E-38	4.488E-38	8.030E-38	1.443E-37	2.647E-37	4.923E-37	9.154E-37	1.683E-36	5.363E-36	5.363E-36
cd109	1.069E-42	3.360E-42	8.248E-42	1.695E-41	3.223E-41	6.018E-41	1.121E-40	2.094E-40	3.903E-40	1.311E-39	1.252E-39
cd110	2.977E-35	7.049E-35	1.610E-34	3.580E-34	7.805E-34	1.670E-33	3.496E-33	7.139E-33	1.419E-32	5.148E-32	5.172E-32

case 2 light elements page 29
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
cd111	5.451E-07	5.839E-07	6.229E-07	6.622E-07	7.016E-07	7.411E-07	7.809E-07	8.208E-07	8.609E-07	9.416E-07	9.416E-07
cd111m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.309E-39	0.000E+00
cd112	4.699E-06	5.031E-06	5.365E-06	5.701E-06	6.037E-06	6.374E-06	6.713E-06	7.053E-06	7.393E-06	8.079E-06	8.079E-06
cd113	4.647E-08	4.502E-08	4.489E-08	4.491E-08	4.494E-08	4.497E-08	4.500E-08	4.504E-08	4.507E-08	4.514E-08	4.514E-08
cd113m	3.865E-09	4.450E-09	5.079E-09	5.751E-09	6.468E-09	7.229E-09	8.035E-09	8.887E-09	9.786E-09	1.173E-08	1.168E-08
cd114	1.135E-04	1.218E-04	1.344E-04	1.501E-04	1.682E-04	1.882E-04	2.099E-04	2.332E-04	2.580E-04	3.122E-04	3.333E-04
cd115	3.341E-17	6.648E-09	7.230E-09	7.925E-09	8.728E-09	9.624E-09	1.060E-08	1.166E-08	1.280E-08	1.527E-08	9.896E-13
cd115m	1.792E-09	5.450E-09	8.154E-09	1.039E-08	1.246E-08	1.450E-08	1.661E-08	1.883E-08	2.119E-08	2.640E-08	1.631E-08
cd116	3.371E-06	3.616E-06	3.862E-06	4.111E-06	4.360E-06	4.612E-06	4.865E-06	5.119E-06	5.376E-06	5.894E-06	5.894E-06
cd117	0.000E+00	1.044E-09	1.054E-09	1.061E-09	1.068E-09	1.075E-09	1.082E-09	1.089E-09	1.096E-09	1.108E-09	0.000E+00
cd117m	0.000E+00	5.619E-13	6.059E-13	6.488E-13	6.927E-13	7.373E-13	7.828E-13	8.293E-13	8.766E-13	9.712E-13	0.000E+00
cd119	0.000E+00	5.423E-13	5.474E-13	5.508E-13	5.543E-13	5.579E-13	5.615E-13	5.652E-13	5.689E-13	5.749E-13	0.000E+00

cd121	0.000E+00	1.401E-14	1.414E-14	1.423E-14	1.432E-14	1.441E-14	1.450E-14	1.459E-14	1.469E-14	1.484E-14	0.000E+00
in113	1.222E-01	1.262E-01	1.312E-01	1.370E-01	1.434E-01	1.505E-01	1.580E-01	1.659E-01	1.741E-01	1.913E-01	2.001E-01
in113m	1.215E-05	1.566E-05	1.863E-05	2.113E-05	2.325E-05	2.504E-05	2.656E-05	2.786E-05	2.897E-05	3.077E-05	2.553E-05
in114	2.625E-09	1.423E-08	1.739E-08	1.986E-08	2.193E-08	2.379E-08	2.554E-08	2.726E-08	2.897E-08	3.245E-08	1.303E-08
in114m	1.632E-04	4.070E-04	5.799E-04	7.078E-04	8.085E-04	8.932E-04	9.691E-04	1.041E-03	1.110E-03	1.251E-03	8.103E-04
in115	3.255E-06	3.388E-06	3.513E-06	3.631E-06	3.741E-06	3.845E-06	3.942E-06	4.034E-06	4.119E-06	4.275E-06	4.285E-06
in116	0.000E+00	1.881E-11	1.900E-11	1.913E-11	1.926E-11	1.940E-11	1.953E-11	1.967E-11	1.980E-11	2.002E-11	0.000E+00
in116m	0.000E+00	3.161E-10	3.309E-10	3.442E-10	3.569E-10	3.692E-10	3.810E-10	3.924E-10	4.034E-10	4.230E-10	0.000E+00
in117	0.000E+00	3.452E-09	3.484E-09	3.506E-09	3.529E-09	3.552E-09	3.575E-09	3.599E-09	3.623E-09	3.661E-09	0.000E+00
in117m	0.000E+00	7.411E-10	7.482E-10	7.529E-10	7.578E-10	7.627E-10	7.678E-10	7.729E-10	7.780E-10	7.863E-10	0.000E+00
in118	0.000E+00	2.201E-12	2.222E-12	2.236E-12	2.250E-12	2.265E-12	2.280E-12	2.295E-12	2.310E-12	2.334E-12	0.000E+00
in119	0.000E+00	4.540E-11	4.583E-11	4.612E-11	4.641E-11	4.672E-11	4.703E-11	4.734E-11	4.766E-11	4.818E-11	0.000E+00
in119m	0.000E+00	3.266E-12	3.297E-12	3.317E-12	3.338E-12	3.360E-12	3.382E-12	3.404E-12	3.426E-12	3.462E-12	0.000E+00
in120	0.000E+00	1.419E-21	1.446E-21	1.464E-21	1.483E-21	1.502E-21	1.522E-21	1.542E-21	1.563E-21	1.596E-21	0.000E+00
in120m	0.000E+00	3.192E-20	3.253E-20	3.294E-20	3.336E-20	3.380E-20	3.424E-20	3.470E-20	3.516E-20	3.592E-20	0.000E+00
in121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sn112	1.494E+01	1.493E+01	1.492E+01	1.491E+01	1.490E+01	1.489E+01	1.488E+01	1.487E+01	1.486E+01	1.484E+01	1.484E+01
sn113	2.022E-02	2.607E-02	3.102E-02	3.519E-02	3.871E-02	4.169E-02	4.422E-02	4.639E-02	4.824E-02	5.124E-02	4.251E-02
sn113m	0.000E+00	2.220E-06	2.240E-06	2.252E-06	2.265E-06	2.278E-06	2.291E-06	2.304E-06	2.318E-06	2.339E-06	0.000E+00
sn114	1.026E+01	1.026E+01	1.026E+01	1.026E+01	1.026E+01	1.026E+01	1.026E+01	1.026E+01	1.025E+01	1.025E+01	1.025E+01
sn115	5.645E+00	5.629E+00	5.612E+00	5.595E+00	5.578E+00	5.561E+00	5.544E+00	5.527E+00	5.509E+00	5.475E+00	5.475E+00
sn116	2.292E+02	2.291E+02	2.291E+02	2.291E+02	2.290E+02	2.290E+02	2.290E+02	2.289E+02	2.289E+02	2.288E+02	2.288E+02
sn117	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02
sn117m	1.142E-03	3.465E-02	4.201E-02	4.377E-02	4.436E-02	4.470E-02	4.500E-02	4.529E-02	4.559E-02	4.611E-02	9.497E-03
sn118	3.864E+02	3.864E+02	3.864E+02	3.864E+02	3.864E+02	3.864E+02	3.864E+02	3.864E+02	3.865E+02	3.865E+02	3.865E+02
sn119	1.381E+02	1.381E+02	1.381E+02	1.381E+02	1.381E+02	1.381E+02	1.381E+02	1.382E+02	1.382E+02	1.382E+02	1.383E+02
sn119m	4.111E-01	4.559E-01	4.983E-01	5.382E-01	5.758E-01	6.112E-01	6.446E-01	6.763E-01	7.062E-01	7.615E-01	7.077E-01
sn120	5.238E+02	5.238E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02	5.239E+02
sn121	8.553E-08	1.065E-03	1.075E-03	1.082E-03	1.089E-03	1.096E-03	1.103E-03	1.110E-03	1.118E-03	1.130E-03	1.486E-07
sn121m	1.964E-03	2.105E-03	2.247E-03	2.390E-03	2.534E-03	2.679E-03	2.824E-03	2.971E-03	3.118E-03	3.415E-03	3.411E-03
sn122	7.556E+01	7.556E+01	7.556E+01	7.556E+01	7.555E+01	7.555E+01	7.555E+01	7.555E+01	7.554E+01	7.554E+01	7.554E+01
sn123	5.085E-03	6.337E-03	7.418E-03	8.348E-03	9.150E-03	9.844E-03	1.045E-02	1.097E-02	1.143E-02	1.219E-02	1.032E-02
sn123m	0.000E+00	1.591E-08	1.606E-08	1.616E-08	1.627E-08	1.637E-08	1.648E-08	1.659E-08	1.669E-08	1.687E-08	0.000E+00
sn124	9.334E+01	9.333E+01	9.332E+01	9.330E+01	9.329E+01	9.327E+01	9.326E+01	9.325E+01	9.323E+01	9.320E+01	9.320E+01
sn125	1.432E-06	1.674E-04	1.874E-04	1.906E-04	1.920E-04	1.933E-04	1.945E-04	1.958E-04	1.970E-04	1.992E-04	2.144E-05
sn125m	0.000E+00	4.186E-06	4.225E-06	4.251E-06	4.277E-06	4.304E-06	4.332E-06	4.359E-06	4.388E-06	4.432E-06	0.000E+00
sb121	2.724E-01	2.904E-01	3.096E-01	3.288E-01	3.481E-01	3.674E-01	3.868E-01	4.062E-01	4.257E-01	4.649E-01	4.660E-01
sb122	1.715E-11	1.305E-04	1.404E-04	1.501E-04	1.599E-04	1.699E-04	1.800E-04	1.903E-04	2.008E-04	2.215E-04	7.750E-08

case 2 light elements page 30
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
sb122m	0.000E+00	1.243E-09	1.337E-09	1.429E-09	1.522E-09	1.617E-09	1.714E-09	1.812E-09	1.911E-09	2.109E-09	0.000E+00
sb123	2.535E-02	2.624E-02	2.732E-02	2.856E-02	2.994E-02	3.144E-02	3.304E-02	3.473E-02	3.649E-02	4.021E-02	4.208E-02
sb124	3.686E-05	7.776E-05	1.090E-04	1.337E-04	1.541E-04	1.718E-04	1.879E-04	2.030E-04	2.178E-04	2.474E-04	1.731E-04
sb124m	0.000E+00	7.948E-12	8.353E-12	8.788E-12	9.271E-12	9.798E-12	1.036E-11	1.097E-11	1.160E-11	1.292E-11	0.000E+00
sb125	1.409E-01	1.514E-01	1.620E-01	1.724E-01	1.827E-01	1.928E-01	2.029E-01	2.128E-01	2.225E-01	2.418E-01	2.368E-01
sb126	4.105E-07	1.765E-05	2.220E-05	2.441E-05	2.620E-05	2.791E-05	2.961E-05	3.132E-05	3.303E-05	3.639E-05	6.430E-06
sb126m	0.000E+00	2.056E-08	2.220E-08	2.378E-08	2.536E-08	2.695E-08	2.853E-08	3.012E-08	3.172E-08	3.482E-08	0.000E+00
te120	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te122	6.549E-03	7.385E-03	8.412E-03	9.511E-03	1.068E-02	1.193E-02	1.325E-02	1.465E-02	1.612E-02	1.931E-02	1.953E-02
te123	2.869E-05	3.259E-05	3.741E-05	4.313E-05	4.975E-05	5.726E-05	6.565E-05	7.493E-05	8.511E-05	1.082E-04	1.151E-04
te123m	5.395E-06	8.281E-06	1.127E-05	1.438E-05	1.765E-05	2.110E-05	2.475E-05	2.862E-05	3.273E-05	4.174E-05	3.488E-05
te124	3.005E-04	3.246E-04	3.619E-04	4.096E-04	4.660E-04	5.299E-04	6.007E-04	6.782E-04	7.621E-04	9.501E-04	1.024E-03
te125	4.894E-02	5.199E-02	5.523E-02	5.867E-02	6.231E-02	6.615E-02	7.020E-02	7.446E-02	7.892E-02	8.845E-02	9.351E-02
te125m	1.861E-03	1.891E-03	1.955E-03	2.043E-03	2.146E-03	2.259E-03	2.379E-03	2.503E-03	2.630E-03	2.885E-03	2.983E-03
te126	5.997E-04	6.741E-04	7.684E-04	8.722E-04	9.837E-04	1.103E-03	1.229E-03	1.364E-03	1.506E-03	1.815E-03	1.845E-03
te127	8.915E-11	2.972E-09	3.453E-09	3.972E-09	4.533E-09	5.136E-09	5.783E-09	6.475E-09	7.216E-09	8.823E-09	6.112E-10
te127m	2.547E-08	4.072E-08	5.616E-08	7.215E-08	8.888E-08	1.065E-07	1.252E-07	1.451E-07	1.662E-07	2.126E-07	1.746E-07
te128	6.589E-10	8.590E-10	1.115E-09	1.433E-09	1.820E-09	2.286E-09	2.839E-09	3.490E-09	4.251E-09	6.149E-09	6.150E-09
te129	6.030E-19	1.333E-16	1.758E-16	2.280E-16	2.919E-16	3.693E-16	4.620E-16	5.720E-16	7.015E-16	1.026E-15	1.935E-17
te129m	6.540E-16	3.188E-15	5.426E-15	7.731E-15	1.034E-14	1.341E-14	1.706E-14	2.142E-14	2.658E-14	3.979E-14	2.099E-14
te130	1.030E-18	1.377E-18	2.145E-18	3.320E-18	4.943E-18	7.088E-18	9.860E-18	1.338E-17	1.781E-17	3.011E-17	3.011E-17
te131	9.179E-43	2.290E-26	3.600E-26	5.608E-26	8.401E-26	1.213E-25	1.698E-25	2.320E-25	3.108E-25	5.308E-25	2.982E-34
te131m	2.886E-40	1.202E-25	1.890E-25	2.944E-25	4.411E-25	6.366E-25	8.913E-25	1.218E-24	1.631E-24	2.786E-24	9.538E-32
sm144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sm145	2.299E-21	2.796E-21	3.285E-21	3.763E-21	4.230E-21	4.687E-21	5.133E-21	5.570E-21	5.998E-21	6.827E-21	6.409E-21
sm146	4.701E-20	5.450E-20	6.226E-20	7.027E-20	7.852E-20	8.700E-20	9.571E-20	1.047E-19	1.138E-19	1.328E-19	1.328E-19
sm147	1.365E-15	1.404E-15	1.440E-15	1.475E-15	1.508E-15	1.539E-15	1.570E-15	1.599E-15	1.627E-15	1.681E-15	1.731E-15
sm148	1.025E-12	1.052E-12	1.075E-12	1.096E-12	1.114E-12	1.130E-12	1.144E-12	1.156E-12	1.167E-12	1.184E-12	1.184E-12
sm149	1.341E-08	1.166E-08	1.025E-08	8.997E-09	7.894E-09	6.921E-09	6.062E-09	5.306E-09	4.641E-09	3.544E-09	3.556E-09

sm150	1.973E-06	2.024E-06	2.069E-06	2.107E-06	2.141E-06	2.169E-06	2.194E-06	2.215E-06	2.232E-06	2.259E-06	2.259E-06	
sm151	8.443E-08	8.080E-08	7.837E-08	7.709E-08	7.664E-08	7.672E-08	7.709E-08	7.761E-08	7.818E-08	7.927E-08	7.950E-08	
sm152	1.995E-06	2.097E-06	2.194E-06	2.287E-06	2.376E-06	2.462E-06	2.544E-06	2.623E-06	2.698E-06	2.840E-06	2.846E-06	
sm153	2.128E-17	6.822E-08	6.925E-08	7.002E-08	7.078E-08	7.153E-08	7.227E-08	7.302E-08	7.375E-08	7.500E-08	1.085E-12	
sm154	2.374E-06	2.573E-06	2.784E-06	3.005E-06	3.234E-06	3.471E-06	3.714E-06	3.963E-06	4.216E-06	4.733E-06	4.883E-06	
sm155	0.000E+00	1.058E-10	1.070E-10	1.079E-10	1.087E-10	1.096E-10	1.106E-10	1.115E-10	1.124E-10	1.141E-10	0.000E+00	
eu151	1.352E-09	1.353E-09	1.352E-09	1.349E-09	1.347E-09	1.344E-09	1.341E-09	1.337E-09	1.332E-09	1.319E-09	1.371E-09	
eu152	8.366E-07	9.502E-07	1.052E-06	1.142E-06	1.223E-06	1.294E-06	1.357E-06	1.412E-06	1.460E-06	1.536E-06	1.529E-06	
eu152m	0.000E+00	4.016E-09	4.050E-09	4.070E-09	4.088E-09	4.104E-09	4.115E-09	4.123E-09	4.126E-09	4.104E-09	0.000E+00	
eu153	5.498E-01	5.492E-01	5.486E-01	5.479E-01	5.469E-01	5.454E-01	5.435E-01	5.409E-01	5.377E-01	5.293E-01	5.436E-01	
eu154	6.618E-02	7.435E-02	8.138E-02	8.740E-02	9.254E-02	9.690E-02	1.006E-01	1.037E-01	1.062E-01	1.099E-01	1.091E-01	
eu155	1.132E-02	1.323E-02	1.499E-02	1.656E-02	1.793E-02	1.912E-02	2.013E-02	2.100E-02	2.172E-02	2.281E-02	2.253E-02	
eu156	2.027E-04	4.702E-03	6.494E-03	7.573E-03	8.416E-03	9.139E-03	9.771E-03	1.033E-02	1.081E-02	1.158E-02	2.814E-03	
gd152	1.806E-01	1.589E-01	1.396E-01	1.225E-01	1.075E-01	9.417E-02	8.245E-02	7.213E-02	6.304E-02	4.803E-02	4.803E-02	
gd153	2.079E-01	2.114E-01	2.122E-01	2.108E-01	2.076E-01	2.030E-01	1.972E-01	1.906E-01	1.834E-01	1.677E-01	1.534E-01	
gd154	1.036E+01	1.028E+01	1.021E+01	1.013E+01	1.005E+01	9.973E+00	9.896E+00	9.818E+00	9.741E+00	9.587E+00	9.588E+00	
gd155m	0.000E+00	2.638E-12	2.234E-12	2.134E-12	2.113E-12	2.112E-12	2.116E-12	2.121E-12	2.126E-12	2.131E-12	0.000E+00	
gd155	9.272E-01	2.771E-01	1.119E-01	7.026E-02	5.963E-02	5.670E-02	5.567E-02	5.510E-02	5.464E-02	5.378E-02	5.406E-02	
gd156	1.993E+02	1.997E+02	1.996E+02	1.995E+02	1.993E+02	1.990E+02	1.988E+02	1.986E+02	1.984E+02	1.979E+02	1.979E+02	

case 2 light elements page 31
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
gd157	2.244E-01	5.276E-02	5.228E-02	5.224E-02	5.218E-02	5.213E-02	5.207E-02	5.201E-02	5.195E-02	5.184E-02	5.184E-02
gd158	2.372E+02	2.375E+02	2.376E+02	2.377E+02	2.377E+02	2.378E+02	2.379E+02	2.380E+02	2.381E+02	2.383E+02	2.383E+02
gd159	0.000E+00	7.981E-03	8.065E-03	8.125E-03	8.187E-03	8.249E-03	8.312E-03	8.377E-03	8.442E-03	8.550E-03	7.337E-15
gd160	1.203E+02	1.203E+02	1.203E+02	1.202E+02	1.202E+02	1.202E+02	1.202E+02	1.201E+02	1.201E+02	1.201E+02	1.201E+02
gd161	0.000E+00	2.793E-06	2.819E-06	2.836E-06	2.854E-06	2.872E-06	2.890E-06	2.908E-06	2.927E-06	2.956E-06	0.000E+00
gd162	0.000E+00	1.031E-09	1.050E-09	1.063E-09	1.076E-09	1.090E-09	1.104E-09	1.118E-09	1.133E-09	1.156E-09	0.000E+00
tb157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tb159	2.624E+00	2.810E+00	3.005E+00	3.199E+00	3.393E+00	3.587E+00	3.780E+00	3.974E+00	4.167E+00	4.552E+00	4.560E+00
tb160	2.005E-02	3.540E-02	4.810E-02	5.885E-02	6.822E-02	7.662E-02	8.434E-02	9.159E-02	9.853E-02	1.118E-01	8.309E-02
tb161	1.033E-05	7.629E-03	8.222E-03	8.442E-03	8.627E-03	8.800E-03	8.964E-03	9.123E-03	9.280E-03	9.565E-03	4.251E-04
tb162	0.000E+00	9.520E-10	9.698E-10	9.819E-10	9.943E-10	1.007E-09	1.020E-09	1.033E-09	1.047E-09	1.068E-09	0.000E+00
dy156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

dy157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy158	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy159	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy160	1.216E-01	1.259E-01	1.341E-01	1.453E-01	1.590E-01	1.748E-01	1.924E-01	2.115E-01	2.320E-01	2.766E-01	3.054E-01
dy161	2.415E-01	2.515E-01	2.688E-01	2.866E-01	3.045E-01	3.226E-01	3.409E-01	3.594E-01	3.782E-01	4.165E-01	4.256E-01
dy162	6.084E-02	6.861E-02	7.675E-02	8.532E-02	9.433E-02	1.038E-01	1.136E-01	1.239E-01	1.346E-01	1.571E-01	1.571E-01
dy163	1.316E-02	1.584E-02	1.883E-02	2.215E-02	2.582E-02	2.984E-02	3.423E-02	3.901E-02	4.418E-02	5.578E-02	5.578E-02
dy164	1.194E-03	1.513E-03	1.890E-03	2.328E-03	2.831E-03	3.404E-03	4.053E-03	4.782E-03	5.596E-03	7.499E-03	7.499E-03
dy165	0.000E+00	7.487E-07	9.440E-07	1.170E-06	1.432E-06	1.734E-06	2.078E-06	2.468E-06	2.908E-06	3.939E-06	0.000E+00
dy165m	0.000E+00	4.300E-09	5.421E-09	6.717E-09	8.221E-09	9.950E-09	1.192E-08	1.416E-08	1.668E-08	2.259E-08	0.000E+00
dy166	1.173E-13	8.830E-08	1.128E-07	1.410E-07	1.740E-07	2.123E-07	2.566E-07	3.072E-07	3.647E-07	5.139E-07	9.258E-10
ho163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ho165	3.700E-04	5.104E-04	6.888E-04	9.105E-04	1.182E-03	1.512E-03	1.908E-03	2.378E-03	2.931E-03	4.331E-03	4.335E-03
ho166	5.733E-14	4.214E-07	5.716E-07	7.573E-07	9.864E-07	1.266E-06	1.603E-06	2.006E-06	2.484E-06	3.698E-06	4.527E-10
ho166m	5.400E-07	7.984E-07	1.154E-06	1.632E-06	2.261E-06	3.077E-06	4.120E-06	5.436E-06	7.077E-06	1.158E-05	1.158E-05
er162	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er164	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er166	1.403E-05	2.043E-05	2.972E-05	4.213E-05	5.841E-05	7.944E-05	1.062E-04	1.399E-04	1.818E-04	2.961E-04	3.004E-04
er167	9.371E-08	1.465E-07	2.237E-07	3.334E-07	4.853E-07	6.913E-07	9.658E-07	1.326E-06	1.791E-06	3.136E-06	3.136E-06
er167m	0.000E+00	4.358E-14	6.398E-14	9.127E-14	1.273E-13	1.743E-13	2.346E-13	3.110E-13	4.068E-13	6.697E-13	0.000E+00
er168	2.249E-08	3.792E-08	6.194E-08	9.838E-08	1.523E-07	2.304E-07	3.412E-07	4.955E-07	7.068E-07	1.372E-06	1.372E-06
er169	6.447E-14	1.368E-11	2.418E-11	3.918E-11	6.164E-11	9.465E-11	1.422E-10	2.094E-10	3.027E-10	6.016E-10	6.118E-11
er170	1.810E-15	2.325E-15	3.386E-15	5.355E-15	8.841E-15	1.480E-14	2.471E-14	4.074E-14	6.613E-14	1.654E-13	2.334E-13
er171	0.000E+00	2.714E-20	3.990E-20	6.350E-20	1.055E-19	1.778E-19	2.987E-19	4.958E-19	8.100E-19	2.047E-18	0.000E+00
er172	9.248E-33	3.184E-23	4.724E-23	7.567E-23	1.265E-22	2.146E-22	3.629E-22	6.063E-22	9.971E-22	2.546E-21	7.302E-26
totals	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05

flux	3.412E+13	3.444E+13	3.465E+13	3.488E+13	3.510E+13	3.533E+13	3.556E+13	3.580E+13	3.617E+13	0.000E+00

case 2 actinides page 32
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
he 4	3.748E-03	4.217E-03	4.878E-03	5.722E-03	6.743E-03	7.937E-03	9.302E-03	1.084E-02	1.255E-02	1.651E-02	1.859E-02
th226	3.026E-18	3.314E-17	4.900E-17	6.017E-17	7.020E-17	8.039E-17	9.120E-17	1.028E-16	1.153E-16	1.429E-16	5.090E-17
th227	2.015E-12	2.194E-12	2.386E-12	2.596E-12	2.826E-12	3.075E-12	3.343E-12	3.630E-12	3.937E-12	4.605E-12	4.969E-12
th228	5.021E-08	5.491E-08	6.038E-08	6.669E-08	7.392E-08	8.211E-08	9.134E-08	1.017E-07	1.131E-07	1.397E-07	1.553E-07
th229	1.686E-09	2.012E-09	2.369E-09	2.761E-09	3.193E-09	3.669E-09	4.196E-09	4.779E-09	5.426E-09	6.940E-09	7.015E-09
th230	2.089E-04	2.111E-04	2.131E-04	2.148E-04	2.164E-04	2.178E-04	2.190E-04	2.200E-04	2.208E-04	2.221E-04	2.292E-04
th231	1.212E-08	3.102E-07	3.154E-07	3.194E-07	3.233E-07	3.269E-07	3.304E-07	3.337E-07	3.368E-07	3.414E-07	8.472E-09
th232	1.411E-05	1.493E-05	1.580E-05	1.670E-05	1.764E-05	1.862E-05	1.962E-05	2.067E-05	2.174E-05	2.397E-05	2.517E-05
th233	0.000E+00	2.049E-11	2.189E-11	2.328E-11	2.475E-11	2.629E-11	2.789E-11	2.957E-11	3.130E-11	3.488E-11	0.000E+00
th234	2.670E-06	2.669E-06	2.668E-06	2.667E-06	2.665E-06	2.664E-06	2.662E-06	2.661E-06	2.659E-06	2.656E-06	2.655E-06
pa231	4.526E-05	5.007E-05	5.517E-05	6.023E-05	6.525E-05	7.022E-05	7.514E-05	8.001E-05	8.481E-05	9.424E-05	9.475E-05
pa232	8.699E-22	6.714E-08	7.466E-08	8.203E-08	8.943E-08	9.686E-08	1.043E-07	1.118E-07	1.193E-07	1.340E-07	1.010E-14
pa233	6.001E-07	6.257E-07	6.658E-07	7.160E-07	7.716E-07	8.306E-07	8.917E-07	9.546E-07	1.019E-06	1.151E-06	1.191E-06
pa234m	9.003E-11	9.021E-11	9.018E-11	9.015E-11	9.012E-11	9.009E-11	9.006E-11	9.003E-11	9.000E-11	8.994E-11	8.951E-11
pa234	4.021E-11	1.061E-10	1.109E-10	1.167E-10	1.232E-10	1.301E-10	1.373E-10	1.448E-10	1.526E-10	1.681E-10	3.998E-11
pa235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
u230	2.982E-15	3.268E-14	4.832E-14	5.934E-14	6.923E-14	7.927E-14	8.993E-14	1.014E-13	1.137E-13	1.409E-13	5.015E-14
u231	2.587E-17	9.456E-13	1.092E-12	1.245E-12	1.414E-12	1.597E-12	1.796E-12	2.010E-12	2.241E-12	2.802E-12	1.684E-14
u232	7.513E-06	8.561E-06	9.789E-06	1.114E-05	1.260E-05	1.419E-05	1.589E-05	1.771E-05	1.965E-05	2.389E-05	2.456E-05
u233	1.546E-04	1.616E-04	1.682E-04	1.743E-04	1.801E-04	1.855E-04	1.905E-04	1.952E-04	1.996E-04	2.075E-04	2.084E-04
u234	3.486E+01	3.440E+01	3.395E+01	3.349E+01	3.304E+01	3.259E+01	3.215E+01	3.171E+01	3.128E+01	3.041E+01	3.042E+01
u235	2.980E+03	2.878E+03	2.779E+03	2.683E+03	2.590E+03	2.499E+03	2.411E+03	2.325E+03	2.242E+03	2.084E+03	2.084E+03
u236	3.402E+02	3.575E+02	3.742E+02	3.903E+02	4.058E+02	4.207E+02	4.350E+02	4.488E+02	4.620E+02	4.869E+02	4.869E+02
u237	8.486E-04	6.296E-01	6.854E-01	7.140E-01	7.410E-01	7.675E-01	7.935E-01	8.191E-01	8.442E-01	8.906E-01	3.692E-02
u238	1.839E+05	1.838E+05	1.837E+05	1.836E+05	1.835E+05	1.834E+05	1.833E+05	1.831E+05	1.830E+05	1.828E+05	1.828E+05
u239	0.000E+00	7.379E-02	7.444E-02	7.486E-02	7.529E-02	7.573E-02	7.618E-02	7.664E-02	7.710E-02	7.781E-02	0.000E+00
u240	3.395E-26	4.467E-26	6.469E-26	1.007E-25	1.632E-25	2.684E-25	4.402E-25	7.138E-25	1.139E-24	2.755E-24	3.937E-24
u241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
np235	1.165E-07	1.442E-07	1.735E-07	2.047E-07	2.378E-07	2.728E-07	3.097E-07	3.486E-07	3.895E-07	4.773E-07	4.521E-07
np236m	8.610E-27	1.609E-07	1.764E-07	1.922E-07	2.087E-07	2.257E-07	2.432E-07	2.613E-07	2.799E-07	3.176E-07	3.531E-17
np236	6.730E-06	7.962E-06	9.303E-06	1.077E-05	1.236E-05	1.408E-05	1.595E-05	1.795E-05	2.010E-05	2.485E-05	2.485E-05

np237	1.797E+01	1.898E+01	2.062E+01	2.233E+01	2.408E+01	2.588E+01	2.771E+01	2.958E+01	3.147E+01	3.535E+01	3.620E+01
np238	5.115E-09	4.211E-02	4.617E-02	5.032E-02	5.462E-02	5.907E-02	6.366E-02	6.839E-02	7.326E-02	8.312E-02	3.260E-06
np239	5.961E-07	1.065E+01	1.074E+01	1.080E+01	1.087E+01	1.093E+01	1.099E+01	1.106E+01	1.113E+01	1.123E+01	1.237E-03
np240m	2.897E-28	3.812E-28	5.521E-28	8.593E-28	1.393E-27	2.290E-27	3.757E-27	6.092E-27	9.723E-27	2.351E-26	3.360E-26
np240	2.980E-30	2.992E-04	3.047E-04	3.084E-04	3.121E-04	3.160E-04	3.199E-04	3.239E-04	3.280E-04	3.345E-04	3.457E-28
np241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
pu236	7.522E-06	8.938E-06	1.054E-05	1.227E-05	1.412E-05	1.612E-05	1.825E-05	2.052E-05	2.293E-05	2.819E-05	2.777E-05
pu237	8.502E-07	2.500E-06	3.810E-06	4.933E-06	5.968E-06	6.978E-06	8.003E-06	9.069E-06	1.019E-05	1.265E-05	7.864E-06
pu238	2.307E+00	2.638E+00	3.044E+00	3.491E+00	3.978E+00	4.505E+00	5.073E+00	5.681E+00	6.330E+00	7.753E+00	7.942E+00
pu239	6.833E+02	6.952E+02	7.157E+02	7.342E+02	7.508E+02	7.658E+02	7.792E+02	7.913E+02	8.021E+02	8.204E+02	8.317E+02
pu240	1.397E+02	1.547E+02	1.695E+02	1.840E+02	1.982E+02	2.119E+02	2.252E+02	2.380E+02	2.503E+02	2.735E+02	2.735E+02
pu241	6.543E+01	6.990E+01	7.510E+01	8.092E+01	8.727E+01	9.408E+01	1.013E+02	1.088E+02	1.165E+02	1.326E+02	1.320E+02
pu242	7.514E+00	9.224E+00	1.105E+01	1.300E+01	1.509E+01	1.734E+01	1.975E+01	2.234E+01	2.510E+01	3.119E+01	3.120E+01
pu243	3.627E-18	1.918E-03	2.319E-03	2.745E-03	3.207E-03	3.709E-03	4.252E-03	4.841E-03	5.476E-03	6.876E-03	2.998E-16
pu244	1.719E-15	2.262E-15	3.276E-15	5.098E-15	8.263E-15	1.359E-14	2.229E-14	3.614E-14	5.769E-14	1.395E-13	1.993E-13
pu245	0.000E+00	3.223E-21	4.711E-21	7.378E-21	1.203E-20	1.992E-20	3.288E-20	5.368E-20	8.623E-20	2.107E-19	9.853E-41
pu246	9.057E-25	1.678E-23	2.800E-23	4.571E-23	7.680E-23	1.304E-22	2.201E-22	3.664E-22	5.993E-22	1.518E-21	6.432E-22
am239	0.000E+00	1.143E-10	1.211E-10	1.283E-10	1.362E-10	1.450E-10	1.546E-10	1.651E-10	1.764E-10	2.012E-10	2.919E-29
am240	8.342E-17	5.281E-08	5.599E-08	5.932E-08	6.299E-08	6.704E-08	7.148E-08	7.633E-08	8.158E-08	9.296E-08	3.691E-12

case 2 actinides page 33
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
am241	2.297E+00	2.408E+00	2.529E+00	2.662E+00	2.809E+00	2.970E+00	3.146E+00	3.338E+00	3.544E+00	3.999E+00	4.541E+00
am242m	2.765E-02	3.692E-02	4.350E-02	4.853E-02	5.276E-02	5.663E-02	6.042E-02	6.430E-02	6.837E-02	7.725E-02	7.722E-02
am242	3.567E-07	4.356E-03	4.617E-03	4.891E-03	5.193E-03	5.527E-03	5.893E-03	6.292E-03	6.725E-03	7.666E-03	9.962E-07
am243	5.040E-01	6.659E-01	8.641E-01	1.098E+00	1.370E+00	1.683E+00	2.039E+00	2.442E+00	2.893E+00	3.957E+00	3.964E+00
am244m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
am244	0.000E+00	4.026E-04	5.273E-04	6.744E-04	8.469E-04	1.047E-03	1.277E-03	1.539E-03	1.835E-03	2.536E-03	0.000E+00
am245	4.231E-20	9.610E-20	1.942E-19	3.683E-19	6.678E-19	1.167E-18	1.977E-18	3.257E-18	5.233E-18	1.264E-17	1.180E-17
am246	2.263E-27	4.193E-26	6.997E-26	1.142E-25	1.919E-25	3.258E-25	5.500E-25	9.156E-25	1.498E-24	3.793E-24	1.608E-24
cm241	1.031E-09	4.897E-09	9.006E-09	1.315E-08	1.726E-08	2.133E-08	2.536E-08	2.940E-08	3.349E-08	4.192E-08	2.177E-08
cm242	1.356E-01	2.199E-01	3.028E-01	3.817E-01	4.578E-01	5.321E-01	6.057E-01	6.795E-01	7.542E-01	9.093E-01	8.026E-01
cm243	1.439E-03	1.933E-03	2.681E-03	3.655E-03	4.828E-03	6.183E-03	7.704E-03	9.380E-03	1.121E-02	1.529E-02	1.526E-02
cm244	4.155E-02	5.839E-02	8.103E-02	1.102E-01	1.471E-01	1.929E-01	2.489E-01	3.167E-01	3.976E-01	6.061E-01	6.067E-01

cm245	5.463E-04	8.274E-04	1.216E-03	1.743E-03	2.442E-03	3.354E-03	4.523E-03	6.000E-03	7.838E-03	1.285E-02	1.285E-02	
cm246	1.998E-05	3.335E-05	5.344E-05	8.273E-05	1.244E-04	1.826E-04	2.621E-04	3.691E-04	5.107E-04	9.335E-04	9.335E-04	
cm247	1.043E-07	1.848E-07	3.166E-07	5.238E-07	8.394E-07	1.307E-06	1.986E-06	2.949E-06	4.293E-06	8.626E-06	8.626E-06	
cm248	2.498E-09	4.764E-09	8.743E-09	1.547E-08	2.646E-08	4.391E-08	7.087E-08	1.116E-07	1.717E-07	3.833E-07	3.833E-07	
cm249	2.551E-23	4.774E-14	8.843E-14	1.574E-13	2.711E-13	4.527E-13	7.354E-13	1.165E-12	1.805E-12	4.072E-12	1.533E-19	
cm250	2.067E-18	6.327E-18	1.444E-17	2.921E-17	5.519E-17	9.946E-17	1.728E-16	2.910E-16	4.773E-16	1.200E-15	1.200E-15	
cm251	0.000E+00	3.005E-25	6.923E-25	1.409E-24	2.680E-24	4.860E-24	8.497E-24	1.441E-23	2.379E-23	6.042E-23	0.000E+00	
totals	1.882E+05	1.880E+05	1.879E+05	1.877E+05	1.876E+05	1.874E+05	1.873E+05	1.872E+05	1.870E+05	1.867E+05	1.867E+05	

flux 3.412E+13 3.444E+13 3.465E+13 3.488E+13 3.510E+13 3.533E+13 3.556E+13 3.580E+13 3.617E+13 0.000E+00

case 2 fission products page 34
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
h 3	2.865E-03	3.080E-03	3.296E-03	3.511E-03	3.726E-03	3.940E-03	4.154E-03	4.368E-03	4.582E-03	5.007E-03	4.984E-03
li 6	1.906E-05	1.997E-05	2.084E-05	2.165E-05	2.242E-05	2.314E-05	2.382E-05	2.445E-05	2.504E-05	2.611E-05	2.611E-05
li 7	6.039E-07	6.472E-07	6.906E-07	7.339E-07	7.771E-07	8.203E-07	8.635E-07	9.065E-07	9.496E-07	1.036E-06	1.036E-06
be 9	1.164E-06	1.247E-06	1.331E-06	1.414E-06	1.497E-06	1.580E-06	1.664E-06	1.746E-06	1.829E-06	1.995E-06	1.995E-06
be 10	7.761E-06	8.317E-06	8.873E-06	9.430E-06	9.985E-06	1.054E-05	1.109E-05	1.165E-05	1.220E-05	1.330E-05	1.330E-05
ge 70	4.669E-10	5.176E-10	5.701E-10	6.242E-10	6.798E-10	7.369E-10	7.952E-10	8.548E-10	9.155E-10	1.040E-09	1.040E-09
ge 71	5.940E-15	3.396E-13	4.050E-13	4.270E-13	4.414E-13	4.539E-13	4.655E-13	4.763E-13	4.865E-13	5.037E-13	7.692E-14
ge 71m	0.000E+00	4.170E-21	4.333E-21	4.473E-21	4.604E-21	4.726E-21	4.840E-21	4.948E-21	5.049E-21	5.218E-21	0.000E+00
ge 72	2.476E-04	2.665E-04	2.883E-04	3.104E-04	3.328E-04	3.555E-04	3.785E-04	4.017E-04	4.251E-04	4.727E-04	4.755E-04
ge 73	8.351E-04	8.988E-04	9.635E-04	1.029E-03	1.094E-03	1.159E-03	1.225E-03	1.290E-03	1.356E-03	1.488E-03	1.488E-03
ge 73m	0.000E+00	1.768E-11	1.785E-11	1.795E-11	1.804E-11	1.812E-11	1.819E-11	1.825E-11	1.830E-11	1.833E-11	0.000E+00
ge 74	7.042E-04	7.583E-04	8.129E-04	8.678E-04	9.229E-04	9.783E-04	1.034E-03	1.090E-03	1.146E-03	1.258E-03	1.258E-03
ge 75	0.000E+00	1.369E-06	1.368E-06	1.363E-06	1.358E-06	1.352E-06	1.346E-06	1.339E-06	1.333E-06	1.315E-06	0.000E+00
ge 75m	0.000E+00	6.995E-10	7.006E-10	6.991E-10	6.973E-10	6.953E-10	6.930E-10	6.906E-10	6.880E-10	6.805E-10	0.000E+00
as 75	7.126E-03	7.623E-03	8.121E-03	8.616E-03	9.109E-03	9.599E-03	1.009E-02	1.057E-02	1.105E-02	1.200E-02	1.200E-02
ge 76	2.220E-02	2.370E-02	2.519E-02	2.666E-02	2.812E-02	2.957E-02	3.100E-02	3.242E-02	3.383E-02	3.661E-02	3.661E-02
as 76	1.717E-23	5.438E-07	5.843E-07	6.234E-07	6.628E-07	7.025E-07	7.425E-07	7.829E-07	8.235E-07	9.031E-07	2.793E-15
se 76	6.797E-05	7.730E-05	8.787E-05	9.914E-05	1.111E-04	1.238E-04	1.372E-04	1.513E-04	1.662E-04	1.980E-04	1.989E-04
ge 77	0.000E+00	2.502E-05	2.499E-05	2.488E-05	2.476E-05	2.463E-05	2.450E-05	2.436E-05	2.422E-05	2.386E-05	3.614E-25
ge 77m	0.000E+00	8.753E-08	8.722E-08	8.662E-08	8.601E-08	8.538E-08	8.475E-08	8.412E-08	8.348E-08	8.197E-08	0.000E+00
as 77	1.705E-15	2.692E-04	2.685E-04	2.668E-04	2.651E-04	2.634E-04	2.616E-04	2.598E-04	2.580E-04	2.536E-04	4.910E-10

se 77	5.074E-02	5.388E-02	5.729E-02	6.067E-02	6.403E-02	6.735E-02	7.063E-02	7.389E-02	7.711E-02	8.346E-02	8.374E-02
se 77m	6.811E-22	1.084E-10	1.083E-10	1.077E-10	1.072E-10	1.067E-10	1.061E-10	1.056E-10	1.051E-10	1.037E-10	1.961E-16
ge 78	0.000E+00	3.101E-05	3.112E-05	3.111E-05	3.110E-05	3.107E-05	3.103E-05	3.099E-05	3.094E-05	3.073E-05	0.000E+00
as 78	0.000E+00	3.235E-05	3.247E-05	3.247E-05	3.246E-05	3.244E-05	3.240E-05	3.236E-05	3.231E-05	3.210E-05	0.000E+00
se 78	1.504E-01	1.614E-01	1.725E-01	1.836E-01	1.948E-01	2.059E-01	2.170E-01	2.282E-01	2.393E-01	2.615E-01	2.616E-01
ge 79	0.000E+00	2.014E-07	2.014E-07	2.007E-07	1.999E-07	1.990E-07	1.982E-07	1.973E-07	1.964E-07	1.940E-07	0.000E+00
as 79	0.000E+00	6.169E-06	6.172E-06	6.153E-06	6.132E-06	6.111E-06	6.087E-06	6.063E-06	6.038E-06	5.969E-06	0.000E+00
se 79	2.968E-01	3.178E-01	3.388E-01	3.598E-01	3.807E-01	4.015E-01	4.223E-01	4.429E-01	4.635E-01	5.044E-01	5.044E-01
se 79m	0.000E+00	2.651E-06	2.652E-06	2.645E-06	2.636E-06	2.627E-06	2.617E-06	2.607E-06	2.596E-06	2.567E-06	0.000E+00
br 79	7.878E-06	8.403E-06	8.962E-06	9.557E-06	1.019E-05	1.085E-05	1.155E-05	1.228E-05	1.305E-05	1.469E-05	1.559E-05
br 79m	0.000E+00	1.605E-14	1.653E-14	1.692E-14	1.728E-14	1.762E-14	1.793E-14	1.822E-14	1.849E-14	1.893E-14	0.000E+00
kr 79	8.933E-27	2.573E-14	2.730E-14	2.878E-14	3.025E-14	3.172E-14	3.319E-14	3.466E-14	3.614E-14	3.899E-14	1.574E-20
ge 80	0.000E+00	8.056E-07	8.017E-07	7.951E-07	7.885E-07	7.819E-07	7.752E-07	7.685E-07	7.619E-07	7.465E-07	0.000E+00
as 80	0.000E+00	4.753E-07	4.740E-07	4.711E-07	4.681E-07	4.650E-07	4.619E-07	4.587E-07	4.555E-07	4.478E-07	0.000E+00
se 80	8.435E-01	9.017E-01	9.597E-01	1.017E+00	1.075E+00	1.132E+00	1.188E+00	1.245E+00	1.300E+00	1.411E+00	1.411E+00
br 80	0.000E+00	1.747E-10	1.813E-10	1.870E-10	1.926E-10	1.979E-10	2.030E-10	2.080E-10	2.128E-10	2.215E-10	0.000E+00
br 80m	0.000E+00	1.853E-09	1.919E-09	1.975E-09	2.028E-09	2.078E-09	2.125E-09	2.170E-09	2.212E-09	2.285E-09	0.000E+00
kr 80	2.439E-06	2.706E-06	2.986E-06	3.274E-06	3.570E-06	3.875E-06	4.187E-06	4.507E-06	4.834E-06	5.509E-06	5.511E-06
ge 81	0.000E+00	2.230E-07	2.217E-07	2.197E-07	2.177E-07	2.157E-07	2.138E-07	2.118E-07	2.099E-07	2.056E-07	0.000E+00
as 81	0.000E+00	1.514E-06	1.511E-06	1.502E-06	1.493E-06	1.485E-06	1.476E-06	1.466E-06	1.457E-06	1.435E-06	0.000E+00
se 81	0.000E+00	5.287E-05	5.277E-05	5.249E-05	5.221E-05	5.191E-05	5.161E-05	5.131E-05	5.100E-05	5.024E-05	0.000E+00
se 81m	0.000E+00	1.147E-05	1.149E-05	1.147E-05	1.145E-05	1.142E-05	1.139E-05	1.135E-05	1.131E-05	1.119E-05	0.000E+00
br 81	1.262E+00	1.349E+00	1.435E+00	1.521E+00	1.606E+00	1.691E+00	1.775E+00	1.859E+00	1.942E+00	2.106E+00	2.106E+00
kr 81	8.907E-08	1.008E-07	1.133E-07	1.268E-07	1.411E-07	1.564E-07	1.727E-07	1.899E-07	2.081E-07	2.478E-07	2.478E-07
kr 81m	0.000E+00	2.764E-14	3.043E-14	3.324E-14	3.617E-14	3.922E-14	4.238E-14	4.567E-14	4.907E-14	5.607E-14	0.000E+00
ge 82	0.000E+00	1.341E-07	1.328E-07	1.311E-07	1.295E-07	1.279E-07	1.264E-07	1.249E-07	1.235E-07	1.204E-07	0.000E+00
as 82	0.000E+00	9.022E-07	8.948E-07	8.847E-07	8.749E-07	8.652E-07	8.558E-07	8.466E-07	8.376E-07	8.179E-07	0.000E+00
as 82m	0.000E+00	2.456E-07	2.442E-07	2.420E-07	2.398E-07	2.376E-07	2.354E-07	2.332E-07	2.311E-07	2.262E-07	0.000E+00
se 82	2.078E+00	2.217E+00	2.355E+00	2.492E+00	2.627E+00	2.762E+00	2.895E+00	3.027E+00	3.158E+00	3.416E+00	3.416E+00

case 2 fission products page 35
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
br 82	6.115E-17	1.431E-04	1.523E-04	1.610E-04	1.697E-04	1.783E-04	1.870E-04	1.956E-04	2.042E-04	2.208E-04	1.003E-10
br 82m	0.000E+00	3.183E-07	3.407E-07	3.621E-07	3.836E-07	4.052E-07	4.268E-07	4.486E-07	4.704E-07	5.129E-07	0.000E+00

kr 82	1.488E-02	1.672E-02	1.882E-02	2.104E-02	2.338E-02	2.583E-02	2.840E-02	3.108E-02	3.388E-02	3.982E-02	4.004E-02	
ge 83	0.000E+00	2.434E-08	2.416E-08	2.391E-08	2.367E-08	2.345E-08	2.323E-08	2.303E-08	2.284E-08	2.241E-08	0.000E+00	
as 83	0.000E+00	1.029E-06	1.019E-06	1.007E-06	9.946E-07	9.827E-07	9.711E-07	9.597E-07	9.487E-07	9.248E-07	0.000E+00	
se 83	0.000E+00	7.579E-05	7.541E-05	7.479E-05	7.417E-05	7.356E-05	7.295E-05	7.234E-05	7.174E-05	7.035E-05	0.000E+00	
se 83m	0.000E+00	4.302E-06	4.265E-06	4.216E-06	4.167E-06	4.120E-06	4.073E-06	4.028E-06	3.984E-06	3.888E-06	0.000E+00	
br 83	0.000E+00	1.051E-03	1.044E-03	1.033E-03	1.023E-03	1.013E-03	1.002E-03	9.924E-04	9.825E-04	9.606E-04	0.000E+00	
kr 83	3.142E+00	3.326E+00	3.509E+00	3.687E+00	3.861E+00	4.029E+00	4.194E+00	4.353E+00	4.509E+00	4.807E+00	4.809E+00	
kr 83m	0.000E+00	8.016E-04	7.959E-04	7.878E-04	7.798E-04	7.719E-04	7.642E-04	7.566E-04	7.491E-04	7.324E-04	0.000E+00	
ge 84	0.000E+00	1.006E-08	9.986E-09	9.889E-09	9.797E-09	9.710E-09	9.628E-09	9.550E-09	9.477E-09	9.316E-09	0.000E+00	
as 84	0.000E+00	3.118E-07	3.089E-07	3.052E-07	3.015E-07	2.981E-07	2.947E-07	2.915E-07	2.885E-07	2.818E-07	0.000E+00	
se 84	0.000E+00	4.346E-05	4.307E-05	4.255E-05	4.205E-05	4.155E-05	4.107E-05	4.060E-05	4.014E-05	3.913E-05	0.000E+00	
br 84	0.000E+00	4.433E-04	4.394E-04	4.342E-04	4.291E-04	4.241E-04	4.193E-04	4.145E-04	4.098E-04	3.996E-04	0.000E+00	
br 84m	0.000E+00	2.164E-06	2.157E-06	2.143E-06	2.129E-06	2.114E-06	2.098E-06	2.083E-06	2.067E-06	2.029E-06	0.000E+00	
kr 84	7.047E+00	7.527E+00	8.006E+00	8.482E+00	8.955E+00	9.426E+00	9.894E+00	1.036E+01	1.082E+01	1.174E+01	1.175E+01	
ge 85	0.000E+00	3.597E-10	3.576E-10	3.547E-10	3.519E-10	3.493E-10	3.469E-10	3.447E-10	3.426E-10	3.378E-10	0.000E+00	
as 85	0.000E+00	6.908E-08	6.821E-08	6.717E-08	6.616E-08	6.520E-08	6.428E-08	6.339E-08	6.253E-08	6.074E-08	0.000E+00	
se 85	0.000E+00	3.498E-06	3.460E-06	3.412E-06	3.365E-06	3.318E-06	3.273E-06	3.229E-06	3.186E-06	3.093E-06	0.000E+00	
se 85m	0.000E+00	1.848E-06	1.827E-06	1.802E-06	1.776E-06	1.752E-06	1.727E-06	1.704E-06	1.680E-06	1.630E-06	0.000E+00	
br 85	0.000E+00	4.577E-05	4.532E-05	4.474E-05	4.416E-05	4.359E-05	4.303E-05	4.248E-05	4.194E-05	4.077E-05	0.000E+00	
kr 85	1.522E+00	1.620E+00	1.717E+00	1.813E+00	1.906E+00	1.998E+00	2.088E+00	2.176E+00	2.263E+00	2.431E+00	2.419E+00	
kr 85m	0.000E+00	4.290E-03	4.248E-03	4.193E-03	4.139E-03	4.086E-03	4.034E-03	3.983E-03	3.933E-03	3.824E-03	0.000E+00	
rb 85	6.146E+00	6.540E+00	6.933E+00	7.322E+00	7.707E+00	8.087E+00	8.463E+00	8.834E+00	9.202E+00	9.925E+00	9.942E+00	
ge 86	0.000E+00	7.556E-11	7.519E-11	7.463E-11	7.411E-11	7.361E-11	7.316E-11	7.273E-11	7.233E-11	7.141E-11	0.000E+00	
as 86	0.000E+00	1.775E-08	1.750E-08	1.720E-08	1.690E-08	1.662E-08	1.635E-08	1.609E-08	1.583E-08	1.531E-08	0.000E+00	
se 86	0.000E+00	4.149E-06	4.095E-06	4.031E-06	3.968E-06	3.907E-06	3.847E-06	3.789E-06	3.732E-06	3.613E-06	0.000E+00	
br 86	0.000E+00	1.828E-05	1.807E-05	1.780E-05	1.754E-05	1.729E-05	1.704E-05	1.680E-05	1.656E-05	1.606E-05	0.000E+00	
br 86m	0.000E+00	3.341E-06	3.319E-06	3.287E-06	3.255E-06	3.223E-06	3.191E-06	3.160E-06	3.128E-06	3.058E-06	0.000E+00	
kr 86	1.235E+01	1.314E+01	1.392E+01	1.469E+01	1.546E+01	1.621E+01	1.695E+01	1.768E+01	1.840E+01	1.981E+01	1.981E+01	
rb 86	4.878E-05	6.187E-04	8.442E-04	9.576E-04	1.035E-03	1.102E-03	1.164E-03	1.226E-03	1.288E-03	1.410E-03	4.450E-04	
rb 86m	0.000E+00	2.721E-09	2.912E-09	3.094E-09	3.278E-09	3.462E-09	3.646E-09	3.831E-09	4.017E-09	4.378E-09	0.000E+00	
sr 86	6.926E-03	7.358E-03	8.207E-03	9.237E-03	1.037E-02	1.159E-02	1.287E-02	1.423E-02	1.566E-02	1.873E-02	1.969E-02	
ge 87	0.000E+00	4.382E-10	4.271E-10	4.150E-10	4.032E-10	3.917E-10	3.804E-10	3.694E-10	3.586E-10	3.369E-10	0.000E+00	
as 87	0.000E+00	3.710E-09	3.634E-09	3.550E-09	3.467E-09	3.387E-09	3.309E-09	3.232E-09	3.158E-09	3.007E-09	0.000E+00	
se 87	0.000E+00	9.051E-07	8.927E-07	8.778E-07	8.633E-07	8.492E-07	8.355E-07	8.222E-07	8.093E-07	7.822E-07	0.000E+00	
br 87	0.000E+00	2.432E-05	2.404E-05	2.369E-05	2.335E-05	2.302E-05	2.269E-05	2.238E-05	2.206E-05	2.140E-05	0.000E+00	
kr 87	0.000E+00	2.519E-03	2.492E-03	2.458E-03	2.425E-03	2.392E-03	2.359E-03	2.328E-03	2.297E-03	2.230E-03	0.000E+00	
rb 87	1.613E+01	1.716E+01	1.818E+01	1.919E+01	2.018E+01	2.116E+01	2.212E+01	2.308E+01	2.401E+01	2.586E+01	2.586E+01	
sr 87	4.517E-05	4.980E-05	5.464E-05	5.973E-05	6.510E-05	7.077E-05	7.675E-05	8.308E-05	8.976E-05	1.043E-04	1.043E-04	

sr 87m	0.000E+00	1.278E-08	1.402E-08	1.546E-08	1.706E-08	1.879E-08	2.063E-08	2.259E-08	2.467E-08	2.911E-08	0.000E+00
ge 88	0.000E+00	6.814E-13	6.699E-13	6.566E-13	6.436E-13	6.310E-13	6.188E-13	6.069E-13	5.954E-13	5.715E-13	0.000E+00
as 88	0.000E+00	7.718E-10	7.539E-10	7.340E-10	7.146E-10	6.958E-10	6.774E-10	6.594E-10	6.419E-10	6.063E-10	0.000E+00
se 88	0.000E+00	1.283E-07	1.268E-07	1.249E-07	1.231E-07	1.213E-07	1.196E-07	1.180E-07	1.164E-07	1.131E-07	0.000E+00
br 88	0.000E+00	7.165E-06	7.070E-06	6.955E-06	6.843E-06	6.734E-06	6.627E-06	6.523E-06	6.422E-06	6.209E-06	0.000E+00
kr 88	0.000E+00	7.952E-03	7.862E-03	7.749E-03	7.637E-03	7.528E-03	7.422E-03	7.317E-03	7.215E-03	6.996E-03	0.000E+00
rb 88	0.000E+00	8.499E-04	8.403E-04	8.283E-04	8.164E-04	8.049E-04	7.935E-04	7.824E-04	7.715E-04	7.482E-04	0.000E+00
sr 88	2.314E+01	2.461E+01	2.607E+01	2.751E+01	2.893E+01	3.033E+01	3.171E+01	3.307E+01	3.441E+01	3.703E+01	3.704E+01
as 89	0.000E+00	9.896E-12	9.892E-12	9.860E-12	9.831E-12	9.807E-12	9.786E-12	9.768E-12	9.752E-12	9.702E-12	0.000E+00
se 89	0.000E+00	1.246E-08	1.231E-08	1.212E-08	1.195E-08	1.178E-08	1.161E-08	1.145E-08	1.130E-08	1.098E-08	0.000E+00

case 2 fission products page 36
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
br 89	0.000E+00	1.313E-06	1.297E-06	1.278E-06	1.259E-06	1.240E-06	1.222E-06	1.205E-06	1.188E-06	1.152E-06	0.000E+00
kr 89	0.000E+00	1.886E-04	1.862E-04	1.833E-04	1.804E-04	1.776E-04	1.748E-04	1.721E-04	1.695E-04	1.639E-04	0.000E+00
rb 89	0.000E+00	9.667E-04	9.552E-04	9.409E-04	9.268E-04	9.130E-04	8.995E-04	8.863E-04	8.733E-04	8.457E-04	0.000E+00
sr 89	1.127E+00	2.353E+00	3.141E+00	3.634E+00	3.935E+00	4.110E+00	4.202E+00	4.241E+00	4.244E+00	4.192E+00	2.741E+00
y 89	3.004E+01	3.078E+01	3.195E+01	3.338E+01	3.497E+01	3.666E+01	3.840E+01	4.017E+01	4.195E+01	4.549E+01	4.694E+01
y 89m	3.852E-10	8.118E-10	1.081E-09	1.250E-09	1.353E-09	1.413E-09	1.444E-09	1.458E-09	1.459E-09	1.441E-09	9.373E-10
as 90	0.000E+00	6.937E-14	6.970E-14	6.984E-14	7.001E-14	7.019E-14	7.039E-14	7.061E-14	7.085E-14	7.117E-14	0.000E+00
se 90	0.000E+00	2.836E-09	2.807E-09	2.770E-09	2.736E-09	2.702E-09	2.670E-09	2.640E-09	2.610E-09	2.548E-09	0.000E+00
br 90	0.000E+00	3.112E-07	3.080E-07	3.040E-07	3.001E-07	2.962E-07	2.925E-07	2.889E-07	2.853E-07	2.778E-07	0.000E+00
kr 90	0.000E+00	3.489E-05	3.442E-05	3.385E-05	3.329E-05	3.274E-05	3.221E-05	3.169E-05	3.118E-05	3.012E-05	0.000E+00
rb 90	0.000E+00	1.521E-04	1.501E-04	1.477E-04	1.454E-04	1.431E-04	1.408E-04	1.386E-04	1.364E-04	1.319E-04	0.000E+00
rb 90m	0.000E+00	7.839E-05	7.772E-05	7.681E-05	7.591E-05	7.502E-05	7.413E-05	7.326E-05	7.240E-05	7.051E-05	0.000E+00
sr 90	3.681E+01	3.914E+01	4.144E+01	4.370E+01	4.592E+01	4.810E+01	5.025E+01	5.235E+01	5.442E+01	5.846E+01	5.834E+01
y 90	9.566E-03	1.048E-02	1.109E-02	1.169E-02	1.229E-02	1.287E-02	1.345E-02	1.402E-02	1.458E-02	1.566E-02	1.517E-02
y 90m	0.000E+00	1.476E-08	1.546E-08	1.626E-08	1.714E-08	1.809E-08	1.907E-08	2.008E-08	2.111E-08	2.313E-08	0.000E+00
zr 90	1.216E+00	1.296E+00	1.381E+00	1.471E+00	1.566E+00	1.665E+00	1.770E+00	1.878E+00	1.991E+00	2.231E+00	2.354E+00
zr 90m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
se 91	0.000E+00	1.728E-10	1.720E-10	1.707E-10	1.695E-10	1.684E-10	1.674E-10	1.665E-10	1.656E-10	1.635E-10	0.000E+00
br 91	0.000E+00	3.354E-08	3.304E-08	3.245E-08	3.189E-08	3.134E-08	3.082E-08	3.031E-08	2.982E-08	2.880E-08	0.000E+00
kr 91	0.000E+00	6.417E-06	6.327E-06	6.220E-06	6.116E-06	6.015E-06	5.917E-06	5.821E-06	5.728E-06	5.533E-06	0.000E+00
rb 91	0.000E+00	7.601E-05	7.518E-05	7.414E-05	7.311E-05	7.211E-05	7.113E-05	7.017E-05	6.923E-05	6.722E-05	0.000E+00

sr 91	0.000E+00	4.752E-02	4.705E-02	4.644E-02	4.584E-02	4.525E-02	4.468E-02	4.412E-02	4.356E-02	4.237E-02	0.000E+00
y 91	1.900E+00	3.434E+00	4.516E+00	5.241E+00	5.719E+00	6.024E+00	6.211E+00	6.316E+00	6.364E+00	6.355E+00	4.433E+00
y 91m	0.000E+00	2.399E-03	2.375E-03	2.345E-03	2.314E-03	2.285E-03	2.256E-03	2.227E-03	2.199E-03	2.139E-03	0.000E+00
zr 91	3.789E+01	3.887E+01	4.032E+01	4.210E+01	4.410E+01	4.623E+01	4.845E+01	5.073E+01	5.302E+01	5.764E+01	5.961E+01
nb 91	4.803E-11	5.265E-11	5.740E-11	6.225E-11	6.720E-11	7.224E-11	7.737E-11	8.257E-11	8.785E-11	9.861E-11	9.860E-11
se 92	0.000E+00	8.590E-12	8.589E-12	8.563E-12	8.541E-12	8.522E-12	8.505E-12	8.492E-12	8.480E-12	8.441E-12	0.000E+00
br 92	0.000E+00	3.396E-09	3.355E-09	3.306E-09	3.259E-09	3.213E-09	3.169E-09	3.127E-09	3.087E-09	3.001E-09	0.000E+00
kr 92	0.000E+00	7.375E-07	7.277E-07	7.160E-07	7.047E-07	6.937E-07	6.830E-07	6.727E-07	6.627E-07	6.417E-07	0.000E+00
rb 92	0.000E+00	5.184E-06	5.133E-06	5.066E-06	5.001E-06	4.937E-06	4.874E-06	4.813E-06	4.753E-06	4.625E-06	0.000E+00
sr 92	0.000E+00	1.424E-02	1.413E-02	1.397E-02	1.382E-02	1.367E-02	1.353E-02	1.339E-02	1.325E-02	1.294E-02	0.000E+00
y 92	0.000E+00	1.874E-02	1.859E-02	1.839E-02	1.819E-02	1.800E-02	1.780E-02	1.762E-02	1.743E-02	1.702E-02	0.000E+00
zr 92	4.159E+01	4.429E+01	4.700E+01	4.968E+01	5.234E+01	5.496E+01	5.756E+01	6.013E+01	6.267E+01	6.768E+01	6.771E+01
nb 92	5.962E-09	6.526E-09	7.104E-09	7.695E-09	8.296E-09	8.909E-09	9.531E-09	1.016E-08	1.080E-08	1.211E-08	1.211E-08
se 93	0.000E+00	3.498E-14	3.525E-14	3.542E-14	3.559E-14	3.578E-14	3.597E-14	3.617E-14	3.637E-14	3.669E-14	0.000E+00
br 93	0.000E+00	3.641E-10	3.700E-10	3.749E-10	3.798E-10	3.848E-10	3.898E-10	3.949E-10	4.000E-10	4.090E-10	0.000E+00
kr 93	0.000E+00	1.743E-07	1.722E-07	1.697E-07	1.672E-07	1.648E-07	1.626E-07	1.603E-07	1.582E-07	1.537E-07	0.000E+00
rb 93	0.000E+00	5.332E-06	5.295E-06	5.243E-06	5.192E-06	5.143E-06	5.094E-06	5.047E-06	5.001E-06	4.898E-06	0.000E+00
sr 93	0.000E+00	7.265E-04	7.224E-04	7.160E-04	7.097E-04	7.036E-04	6.975E-04	6.916E-04	6.857E-04	6.724E-04	0.000E+00
y 93	0.000E+00	4.022E-02	4.000E-02	3.966E-02	3.932E-02	3.898E-02	3.865E-02	3.833E-02	3.801E-02	3.728E-02	0.000E+00
zr 93	3.037E+01	3.235E+01	3.436E+01	3.635E+01	3.832E+01	4.027E+01	4.220E+01	4.411E+01	4.601E+01	4.975E+01	4.979E+01
nb 93	1.096E-06	1.205E-06	1.320E-06	1.441E-06	1.567E-06	1.699E-06	1.836E-06	1.980E-06	2.130E-06	2.450E-06	2.570E-06
nb 93m	1.731E-05	1.845E-05	1.966E-05	2.094E-05	2.229E-05	2.371E-05	2.520E-05	2.676E-05	2.838E-05	3.183E-05	3.362E-05
br 94	0.000E+00	1.299E-11	1.303E-11	1.304E-11	1.305E-11	1.307E-11	1.309E-11	1.312E-11	1.315E-11	1.320E-11	0.000E+00
kr 94	0.000E+00	1.287E-08	1.274E-08	1.257E-08	1.241E-08	1.226E-08	1.212E-08	1.198E-08	1.185E-08	1.158E-08	0.000E+00
rb 94	0.000E+00	1.302E-06	1.294E-06	1.282E-06	1.270E-06	1.260E-06	1.249E-06	1.239E-06	1.229E-06	1.207E-06	0.000E+00
sr 94	0.000E+00	1.221E-04	1.216E-04	1.206E-04	1.197E-04	1.188E-04	1.179E-04	1.170E-04	1.162E-04	1.142E-04	0.000E+00
y 94	0.000E+00	1.962E-03	1.954E-03	1.940E-03	1.926E-03	1.913E-03	1.899E-03	1.886E-03	1.873E-03	1.842E-03	0.000E+00
zr 94	4.803E+01	5.130E+01	5.456E+01	5.780E+01	6.103E+01	6.422E+01	6.740E+01	7.056E+01	7.370E+01	7.993E+01	7.993E+01
nb 94	2.351E-05	2.562E-05	2.778E-05	2.997E-05	3.219E-05	3.444E-05	3.672E-05	3.902E-05	4.134E-05	4.604E-05	4.604E-05

case 2 fission products page 37
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
nb 94m	0.000E+00	1.836E-10	1.878E-10	1.912E-10	1.942E-10	1.970E-10	1.997E-10	2.020E-10	2.043E-10	2.076E-10	0.000E+00
br 95	0.000E+00	1.373E-13	1.383E-13	1.389E-13	1.395E-13	1.402E-13	1.409E-13	1.417E-13	1.425E-13	1.438E-13	0.000E+00
kr 95	0.000E+00	3.915E-09	3.932E-09	3.939E-09	3.949E-09	3.960E-09	3.974E-09	3.989E-09	4.006E-09	4.033E-09	0.000E+00
rb 95	0.000E+00	8.954E-08	8.906E-08	8.833E-08	8.763E-08	8.697E-08	8.633E-08	8.573E-08	8.515E-08	8.382E-08	0.000E+00
sr 95	0.000E+00	3.684E-05	3.667E-05	3.638E-05	3.611E-05	3.583E-05	3.557E-05	3.531E-05	3.506E-05	3.447E-05	0.000E+00
y 95	0.000E+00	1.144E-03	1.141E-03	1.134E-03	1.128E-03	1.121E-03	1.114E-03	1.108E-03	1.101E-03	1.086E-03	0.000E+00
zr 95	2.887E+00	4.967E+00	6.453E+00	7.502E+00	8.239E+00	8.751E+00	9.103E+00	9.339E+00	9.493E+00	9.640E+00	6.892E+00
nb 95	2.362E+00	2.302E+00	2.701E+00	3.225E+00	3.726E+00	4.150E+00	4.485E+00	4.738E+00	4.923E+00	5.144E+00	4.801E+00
nb 95m	1.915E-03	2.919E-03	3.905E-03	4.603E-03	5.094E-03	5.436E-03	5.672E-03	5.831E-03	5.935E-03	6.223E-03	4.571E-03
mo 95	4.368E+01	4.495E+01	4.633E+01	4.801E+01	4.999E+01	5.226E+01	5.474E+01	5.739E+01	6.017E+01	6.596E+01	6.905E+01
br 96	0.000E+00	2.592E-14	2.609E-14	2.619E-14	2.629E-14	2.640E-14	2.653E-14	2.666E-14	2.679E-14	2.700E-14	0.000E+00
kr 96	0.000E+00	2.659E-10	2.661E-10	2.657E-10	2.654E-10	2.653E-10	2.652E-10	2.653E-10	2.655E-10	2.654E-10	0.000E+00
rb 96	0.000E+00	1.176E-08	1.168E-08	1.156E-08	1.146E-08	1.136E-08	1.127E-08	1.118E-08	1.110E-08	1.092E-08	0.000E+00
sr 96	0.000E+00	1.148E-06	1.143E-06	1.133E-06	1.125E-06	1.116E-06	1.108E-06	1.100E-06	1.093E-06	1.076E-06	0.000E+00
y 96	0.000E+00	1.035E-05	1.033E-05	1.027E-05	1.022E-05	1.016E-05	1.011E-05	1.006E-05	1.001E-05	9.887E-06	0.000E+00
zr 96	4.949E+01	5.293E+01	5.635E+01	5.977E+01	6.316E+01	6.654E+01	6.991E+01	7.326E+01	7.659E+01	8.322E+01	8.322E+01
nb 96	3.705E-23	1.098E-04	1.222E-04	1.377E-04	1.530E-04	1.664E-04	1.778E-04	1.873E-04	1.950E-04	2.053E-04	5.255E-14
mo 96	6.476E-01	7.641E-01	8.853E-01	1.012E+00	1.144E+00	1.283E+00	1.429E+00	1.583E+00	1.746E+00	2.099E+00	2.099E+00
kr 97	0.000E+00	1.170E-12	1.178E-12	1.183E-12	1.188E-12	1.194E-12	1.200E-12	1.206E-12	1.213E-12	1.224E-12	0.000E+00
rb 97	0.000E+00	3.055E-09	3.009E-09	2.956E-09	2.905E-09	2.857E-09	2.810E-09	2.766E-09	2.723E-09	2.635E-09	0.000E+00
sr 97	0.000E+00	2.342E-07	2.327E-07	2.304E-07	2.283E-07	2.263E-07	2.245E-07	2.227E-07	2.210E-07	2.172E-07	0.000E+00
y 97	0.000E+00	5.069E-06	5.058E-06	5.032E-06	5.007E-06	4.982E-06	4.958E-06	4.935E-06	4.912E-06	4.855E-06	0.000E+00
zr 97	0.000E+00	1.072E-01	1.073E-01	1.070E-01	1.067E-01	1.064E-01	1.061E-01	1.058E-01	1.055E-01	1.047E-01	5.852E-15
nb 97	0.000E+00	7.669E-03	7.675E-03	7.655E-03	7.635E-03	7.615E-03	7.595E-03	7.575E-03	7.556E-03	7.495E-03	4.484E-16
nb 97m	0.000E+00	1.004E-04	1.004E-04	1.001E-04	9.987E-05	9.960E-05	9.933E-05	9.906E-05	9.879E-05	9.798E-05	5.476E-18
mo 97	4.606E+01	4.920E+01	5.245E+01	5.569E+01	5.892E+01	6.215E+01	6.536E+01	6.856E+01	7.176E+01	7.812E+01	7.823E+01
kr 98	0.000E+00	6.694E-13	6.747E-13	6.782E-13	6.818E-13	6.857E-13	6.898E-13	6.940E-13	6.984E-13	7.055E-13	0.000E+00
rb 98	0.000E+00	1.687E-10	1.693E-10	1.695E-10	1.698E-10	1.703E-10	1.708E-10	1.714E-10	1.720E-10	1.731E-10	0.000E+00
sr 98	0.000E+00	1.447E-07	1.441E-07	1.432E-07	1.423E-07	1.415E-07	1.408E-07	1.401E-07	1.395E-07	1.380E-07	0.000E+00
y 98	0.000E+00	6.931E-07	6.914E-07	6.877E-07	6.842E-07	6.808E-07	6.776E-07	6.745E-07	6.715E-07	6.640E-07	0.000E+00
zr 98	0.000E+00	5.748E-05	5.757E-05	5.747E-05	5.736E-05	5.726E-05	5.716E-05	5.705E-05	5.695E-05	5.658E-05	0.000E+00

nb 98	0.000E+00	5.392E-06	5.401E-06	5.392E-06	5.383E-06	5.374E-06	5.365E-06	5.355E-06	5.346E-06	5.312E-06	0.000E+00
nb 98m	0.000E+00	3.996E-05	4.076E-05	4.139E-05	4.197E-05	4.251E-05	4.300E-05	4.347E-05	4.390E-05	4.455E-05	0.000E+00
mo 98	4.903E+01	5.254E+01	5.606E+01	5.958E+01	6.309E+01	6.659E+01	7.010E+01	7.359E+01	7.709E+01	8.406E+01	8.406E+01
tc 98	1.045E-04	1.202E-04	1.371E-04	1.551E-04	1.743E-04	1.946E-04	2.161E-04	2.388E-04	2.626E-04	3.140E-04	3.140E-04
rb 99	0.000E+00	2.537E-12	2.553E-12	2.562E-12	2.572E-12	2.584E-12	2.596E-12	2.610E-12	2.625E-12	2.648E-12	0.000E+00
sr 99	0.000E+00	2.558E-08	2.528E-08	2.492E-08	2.458E-08	2.425E-08	2.393E-08	2.363E-08	2.334E-08	2.274E-08	0.000E+00
y 99	0.000E+00	1.024E-06	1.020E-06	1.013E-06	1.006E-06	9.996E-07	9.937E-07	9.881E-07	9.829E-07	9.706E-07	0.000E+00
zr 99	0.000E+00	3.883E-06	3.889E-06	3.883E-06	3.878E-06	3.872E-06	3.867E-06	3.862E-06	3.857E-06	3.837E-06	0.000E+00
nb 99	0.000E+00	1.794E-05	1.797E-05	1.795E-05	1.792E-05	1.790E-05	1.787E-05	1.785E-05	1.783E-05	1.774E-05	0.000E+00
nb 99m	0.000E+00	1.274E-04	1.278E-04	1.278E-04	1.277E-04	1.277E-04	1.276E-04	1.275E-04	1.275E-04	1.270E-04	0.000E+00
mo 99	8.783E-08	4.828E-01	4.841E-01	4.836E-01	4.832E-01	4.827E-01	4.822E-01	4.818E-01	4.813E-01	4.789E-01	1.923E-04
tc 99	5.032E+01	5.328E+01	5.674E+01	6.018E+01	6.359E+01	6.698E+01	7.035E+01	7.369E+01	7.700E+01	8.357E+01	8.409E+01
tc 99m	7.752E-09	3.881E-02	3.892E-02	3.889E-02	3.885E-02	3.882E-02	3.879E-02	3.876E-02	3.873E-02	3.854E-02	1.698E-05
ru 99	1.881E-03	1.996E-03	2.128E-03	2.262E-03	2.395E-03	2.529E-03	2.663E-03	2.798E-03	2.934E-03	3.206E-03	3.246E-03
rb100	0.000E+00	1.286E-12	1.297E-12	1.304E-12	1.312E-12	1.321E-12	1.329E-12	1.339E-12	1.349E-12	1.365E-12	0.000E+00
sr100	0.000E+00	2.111E-09	2.121E-09	2.127E-09	2.133E-09	2.141E-09	2.150E-09	2.160E-09	2.170E-09	2.188E-09	0.000E+00
y100	0.000E+00	1.533E-07	1.538E-07	1.539E-07	1.540E-07	1.542E-07	1.545E-07	1.548E-07	1.552E-07	1.556E-07	0.000E+00
zr100	0.000E+00	1.322E-05	1.322E-05	1.318E-05	1.314E-05	1.310E-05	1.306E-05	1.303E-05	1.299E-05	1.289E-05	0.000E+00
nb100	0.000E+00	3.002E-06	3.007E-06	3.002E-06	2.997E-06	2.993E-06	2.988E-06	2.984E-06	2.979E-06	2.962E-06	0.000E+00

case 2 fission products page 38
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
nb100m	0.000E+00	4.167E-07	4.261E-07	4.336E-07	4.406E-07	4.473E-07	4.535E-07	4.594E-07	4.650E-07	4.739E-07	0.000E+00
mo100	5.509E+01	5.908E+01	6.307E+01	6.707E+01	7.106E+01	7.505E+01	7.905E+01	8.303E+01	8.702E+01	9.499E+01	9.499E+01
tc100	0.000E+00	2.580E-06	2.773E-06	2.960E-06	3.148E-06	3.337E-06	3.528E-06	3.720E-06	3.913E-06	4.291E-06	0.000E+00
ru100	2.051E+00	2.341E+00	2.653E+00	2.986E+00	3.341E+00	3.718E+00	4.117E+00	4.538E+00	4.981E+00	5.935E+00	5.935E+00
rb101	0.000E+00	9.955E-15	1.004E-14	1.010E-14	1.016E-14	1.022E-14	1.028E-14	1.035E-14	1.042E-14	1.053E-14	0.000E+00
sr101	0.000E+00	3.246E-10	3.244E-10	3.234E-10	3.227E-10	3.221E-10	3.216E-10	3.213E-10	3.212E-10	3.204E-10	0.000E+00
y101	0.000E+00	5.833E-08	5.788E-08	5.728E-08	5.671E-08	5.619E-08	5.569E-08	5.523E-08	5.479E-08	5.384E-08	0.000E+00
zr101	0.000E+00	2.121E-06	2.125E-06	2.123E-06	2.121E-06	2.119E-06	2.119E-06	2.118E-06	2.118E-06	2.112E-06	0.000E+00
nb101	0.000E+00	1.253E-05	1.258E-05	1.258E-05	1.259E-05	1.260E-05	1.260E-05	1.261E-05	1.262E-05	1.259E-05	0.000E+00
mo101	0.000E+00	1.618E-03	1.625E-03	1.627E-03	1.629E-03	1.631E-03	1.632E-03	1.634E-03	1.636E-03	1.634E-03	0.000E+00
tc101	0.000E+00	1.574E-03	1.581E-03	1.583E-03	1.585E-03	1.586E-03	1.588E-03	1.590E-03	1.591E-03	1.590E-03	0.000E+00
ru101	4.586E+01	4.917E+01	5.250E+01	5.582E+01	5.914E+01	6.246E+01	6.577E+01	6.908E+01	7.239E+01	7.900E+01	7.901E+01

sr102	0.000E+00	8.856E-11	8.786E-11	8.693E-11	8.606E-11	8.523E-11	8.445E-11	8.371E-11	8.302E-11	8.150E-11	0.000E+00
y102	0.000E+00	5.423E-08	5.330E-08	5.223E-08	5.121E-08	5.021E-08	4.926E-08	4.833E-08	4.744E-08	4.560E-08	0.000E+00
zr102	0.000E+00	2.205E-06	2.201E-06	2.191E-06	2.181E-06	2.173E-06	2.166E-06	2.160E-06	2.154E-06	2.139E-06	0.000E+00
nb102	0.000E+00	1.920E-06	1.929E-06	1.933E-06	1.937E-06	1.941E-06	1.945E-06	1.949E-06	1.953E-06	1.956E-06	0.000E+00
mo102	0.000E+00	1.161E-03	1.170E-03	1.175E-03	1.180E-03	1.184E-03	1.189E-03	1.193E-03	1.198E-03	1.203E-03	0.000E+00
tc102	0.000E+00	9.051E-06	9.119E-06	9.158E-06	9.195E-06	9.231E-06	9.267E-06	9.301E-06	9.336E-06	9.375E-06	0.000E+00
tc102m	0.000E+00	4.167E-07	4.266E-07	4.346E-07	4.420E-07	4.488E-07	4.551E-07	4.610E-07	4.665E-07	4.750E-07	0.000E+00
ru102	4.232E+01	4.555E+01	4.882E+01	5.210E+01	5.541E+01	5.873E+01	6.207E+01	6.543E+01	6.881E+01	7.564E+01	7.564E+01
rh102	1.827E-05	2.158E-05	2.496E-05	2.846E-05	3.211E-05	3.594E-05	3.997E-05	4.419E-05	4.861E-05	5.804E-05	5.688E-05
pd102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr103	0.000E+00	2.530E-13	2.555E-13	2.572E-13	2.590E-13	2.609E-13	2.628E-13	2.648E-13	2.669E-13	2.704E-13	0.000E+00
y103	0.000E+00	4.791E-09	4.701E-09	4.599E-09	4.501E-09	4.405E-09	4.312E-09	4.222E-09	4.135E-09	3.957E-09	0.000E+00
zr103	0.000E+00	3.449E-07	3.462E-07	3.467E-07	3.473E-07	3.481E-07	3.491E-07	3.501E-07	3.513E-07	3.529E-07	0.000E+00
nb103	0.000E+00	1.565E-06	1.581E-06	1.592E-06	1.603E-06	1.614E-06	1.625E-06	1.636E-06	1.647E-06	1.664E-06	0.000E+00
mo103	0.000E+00	1.062E-04	1.077E-04	1.089E-04	1.100E-04	1.111E-04	1.121E-04	1.131E-04	1.141E-04	1.157E-04	0.000E+00
tc103	0.000E+00	8.694E-05	8.819E-05	8.913E-05	9.003E-05	9.090E-05	9.174E-05	9.256E-05	9.335E-05	9.459E-05	0.000E+00
ru103	1.006E+00	2.862E+00	3.973E+00	4.645E+00	5.061E+00	5.326E+00	5.503E+00	5.629E+00	5.723E+00	5.862E+00	3.391E+00
rh103	3.080E+01	3.119E+01	3.235E+01	3.393E+01	3.577E+01	3.773E+01	3.976E+01	4.182E+01	4.388E+01	4.797E+01	5.044E+01
rh103m	9.965E-04	2.835E-03	3.937E-03	4.603E-03	5.015E-03	5.278E-03	5.454E-03	5.578E-03	5.672E-03	5.808E-03	3.360E-03
sr104	0.000E+00	1.094E-13	1.105E-13	1.113E-13	1.121E-13	1.129E-13	1.138E-13	1.148E-13	1.157E-13	1.173E-13	0.000E+00
y104	0.000E+00	4.869E-11	4.923E-11	4.965E-11	5.012E-11	5.062E-11	5.115E-11	5.172E-11	5.230E-11	5.338E-11	0.000E+00
zr104	0.000E+00	1.890E-07	1.908E-07	1.922E-07	1.937E-07	1.954E-07	1.972E-07	1.991E-07	2.011E-07	2.047E-07	0.000E+00
nb104	0.000E+00	2.158E-06	2.193E-06	2.222E-06	2.251E-06	2.281E-06	2.312E-06	2.342E-06	2.373E-06	2.428E-06	0.000E+00
mo104	0.000E+00	7.095E-05	7.236E-05	7.352E-05	7.466E-05	7.577E-05	7.687E-05	7.795E-05	7.901E-05	8.084E-05	0.000E+00
tc104	0.000E+00	1.362E-03	1.390E-03	1.412E-03	1.435E-03	1.456E-03	1.478E-03	1.498E-03	1.519E-03	1.554E-03	0.000E+00
ru104	2.631E+01	2.858E+01	3.090E+01	3.326E+01	3.566E+01	3.810E+01	4.057E+01	4.308E+01	4.562E+01	5.081E+01	5.081E+01
rh104	0.000E+00	1.639E-05	1.716E-05	1.811E-05	1.921E-05	2.040E-05	2.164E-05	2.291E-05	2.419E-05	2.672E-05	0.000E+00
rh104m	0.000E+00	7.367E-06	7.711E-06	8.141E-06	8.635E-06	9.168E-06	9.725E-06	1.029E-05	1.087E-05	1.201E-05	0.000E+00
pd104	4.477E+00	5.176E+00	5.899E+00	6.659E+00	7.463E+00	8.317E+00	9.223E+00	1.018E+01	1.120E+01	1.339E+01	1.339E+01
y105	0.000E+00	6.879E-13	6.966E-13	7.035E-13	7.108E-13	7.185E-13	7.266E-13	7.349E-13	7.435E-13	7.592E-13	0.000E+00
zr105	0.000E+00	1.280E-08	1.267E-08	1.251E-08	1.236E-08	1.222E-08	1.208E-08	1.195E-08	1.183E-08	1.158E-08	0.000E+00
nb105	0.000E+00	5.227E-07	5.320E-07	5.399E-07	5.481E-07	5.565E-07	5.651E-07	5.739E-07	5.828E-07	5.991E-07	0.000E+00
mo105	0.000E+00	2.957E-05	3.030E-05	3.093E-05	3.155E-05	3.216E-05	3.275E-05	3.334E-05	3.393E-05	3.496E-05	0.000E+00
tc105	0.000E+00	4.462E-04	4.582E-04	4.684E-04	4.785E-04	4.883E-04	4.979E-04	5.073E-04	5.165E-04	5.329E-04	0.000E+00
ru105	0.000E+00	1.577E-02	1.619E-02	1.656E-02	1.692E-02	1.727E-02	1.761E-02	1.795E-02	1.827E-02	1.886E-02	0.000E+00
rh105	6.507E-14	1.178E-01	1.209E-01	1.236E-01	1.262E-01	1.288E-01	1.313E-01	1.338E-01	1.362E-01	1.404E-01	7.543E-08
rh105m	0.000E+00	1.261E-05	1.295E-05	1.324E-05	1.353E-05	1.381E-05	1.408E-05	1.435E-05	1.462E-05	1.508E-05	0.000E+00
pd105	1.839E+01	1.991E+01	2.160E+01	2.333E+01	2.509E+01	2.688E+01	2.871E+01	3.056E+01	3.245E+01	3.632E+01	3.648E+01

case 2 fission products page 39
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
y106	0.000E+00	7.545E-15	7.646E-15	7.728E-15	7.815E-15	7.906E-15	8.002E-15	8.101E-15	8.202E-15	8.389E-15	0.000E+00
zr106	0.000E+00	8.243E-10	8.407E-10	8.557E-10	8.718E-10	8.887E-10	9.065E-10	9.250E-10	9.441E-10	9.810E-10	0.000E+00
nb106	0.000E+00	2.958E-08	3.052E-08	3.142E-08	3.235E-08	3.332E-08	3.432E-08	3.534E-08	3.639E-08	3.842E-08	0.000E+00
mo106	0.000E+00	3.623E-06	3.733E-06	3.832E-06	3.931E-06	4.032E-06	4.133E-06	4.234E-06	4.335E-06	4.525E-06	0.000E+00
tc106	0.000E+00	2.346E-05	2.425E-05	2.495E-05	2.565E-05	2.634E-05	2.703E-05	2.771E-05	2.838E-05	2.962E-05	0.000E+00
ru106	6.585E+00	7.488E+00	8.382E+00	9.267E+00	1.014E+01	1.100E+01	1.186E+01	1.270E+01	1.353E+01	1.517E+01	1.432E+01
rh106	6.112E-06	8.218E-06	9.094E-06	9.953E-06	1.080E-05	1.164E-05	1.247E-05	1.329E-05	1.410E-05	1.568E-05	1.329E-05
rh106m	0.000E+00	1.494E-04	1.548E-04	1.592E-04	1.636E-04	1.680E-04	1.724E-04	1.768E-04	1.811E-04	1.887E-04	0.000E+00
pd106	7.026E+00	7.575E+00	8.191E+00	8.867E+00	9.600E+00	1.039E+01	1.124E+01	1.214E+01	1.310E+01	1.519E+01	1.604E+01
ag106	0.000E+00	9.195E-16	9.695E-16	1.017E-15	1.066E-15	1.117E-15	1.169E-15	1.222E-15	1.278E-15	1.392E-15	0.000E+00
y107	0.000E+00	7.133E-17	7.227E-17	7.303E-17	7.384E-17	7.469E-17	7.557E-17	7.649E-17	7.743E-17	7.915E-17	0.000E+00
zr107	0.000E+00	2.186E-12	2.229E-12	2.269E-12	2.312E-12	2.357E-12	2.405E-12	2.455E-12	2.506E-12	2.606E-12	0.000E+00
nb107	0.000E+00	3.913E-09	4.048E-09	4.179E-09	4.318E-09	4.465E-09	4.617E-09	4.775E-09	4.937E-09	5.257E-09	0.000E+00
mo107	0.000E+00	5.780E-07	5.984E-07	6.174E-07	6.369E-07	6.568E-07	6.770E-07	6.974E-07	7.181E-07	7.577E-07	0.000E+00
tc107	0.000E+00	8.998E-06	9.354E-06	9.680E-06	1.000E-05	1.032E-05	1.064E-05	1.096E-05	1.127E-05	1.186E-05	0.000E+00
ru107	0.000E+00	1.163E-04	1.209E-04	1.251E-04	1.292E-04	1.332E-04	1.372E-04	1.411E-04	1.450E-04	1.522E-04	0.000E+00
rh107	0.000E+00	6.750E-04	7.015E-04	7.256E-04	7.494E-04	7.728E-04	7.960E-04	8.188E-04	8.414E-04	8.830E-04	0.000E+00
pd107	8.411E+00	9.337E+00	1.030E+01	1.129E+01	1.232E+01	1.338E+01	1.447E+01	1.559E+01	1.674E+01	1.913E+01	1.913E+01
pd107m	0.000E+00	1.507E-08	1.645E-08	1.791E-08	1.952E-08	2.126E-08	2.314E-08	2.517E-08	2.733E-08	3.201E-08	0.000E+00
ag107	9.179E-07	9.938E-07	1.078E-06	1.170E-06	1.271E-06	1.381E-06	1.500E-06	1.629E-06	1.767E-06	2.072E-06	2.245E-06
zr108	0.000E+00	1.391E-13	1.417E-13	1.441E-13	1.467E-13	1.495E-13	1.524E-13	1.554E-13	1.585E-13	1.645E-13	0.000E+00
nb108	0.000E+00	3.733E-11	3.866E-11	3.999E-11	4.141E-11	4.293E-11	4.453E-11	4.620E-11	4.792E-11	5.137E-11	0.000E+00
mo108	0.000E+00	3.288E-08	3.425E-08	3.560E-08	3.703E-08	3.852E-08	4.007E-08	4.166E-08	4.330E-08	4.653E-08	0.000E+00
tc108	0.000E+00	7.150E-07	7.461E-07	7.754E-07	8.052E-07	8.354E-07	8.659E-07	8.967E-07	9.277E-07	9.871E-07	0.000E+00
ru108	0.000E+00	8.813E-05	9.182E-05	9.521E-05	9.859E-05	1.019E-04	1.053E-04	1.086E-04	1.118E-04	1.179E-04	0.000E+00
rh108	0.000E+00	5.518E-06	5.749E-06	5.961E-06	6.171E-06	6.381E-06	6.588E-06	6.794E-06	6.998E-06	7.378E-06	0.000E+00
rh108m	0.000E+00	2.028E-06	2.108E-06	2.178E-06	2.243E-06	2.306E-06	2.366E-06	2.422E-06	2.477E-06	2.571E-06	0.000E+00
pd108	5.225E+00	5.822E+00	6.443E+00	7.086E+00	7.752E+00	8.440E+00	9.149E+00	9.880E+00	1.063E+01	1.220E+01	1.220E+01
ag108	1.065E-14	5.882E-11	6.511E-11	7.143E-11	7.795E-11	8.468E-11	9.161E-11	9.873E-11	1.060E-10	1.209E-10	4.310E-14
ag108m	3.450E-06	4.128E-06	4.884E-06	5.718E-06	6.632E-06	7.631E-06	8.716E-06	9.889E-06	1.115E-05	1.397E-05	1.396E-05
cd108	3.717E-06	4.420E-06	5.199E-06	6.057E-06	6.996E-06	8.017E-06	9.124E-06	1.032E-05	1.161E-05	1.446E-05	1.446E-05

zr109 0.000E+00 3.613E-17 3.663E-17 3.705E-17 3.749E-17 3.796E-17 3.845E-17 3.895E-17 3.947E-17 4.043E-17 0.000E+00
nb109 0.000E+00 1.998E-12 2.062E-12 2.124E-12 2.192E-12 2.264E-12 2.339E-12 2.418E-12 2.500E-12 2.662E-12 0.000E+00
mo109 0.000E+00 3.259E-09 3.394E-09 3.527E-09 3.668E-09 3.815E-09 3.967E-09 4.125E-09 4.287E-09 4.607E-09 0.000E+00
tc109 0.000E+00 6.539E-08 6.827E-08 7.098E-08 7.373E-08 7.650E-08 7.929E-08 8.210E-08 8.492E-08 9.030E-08 0.000E+00
ru109 0.000E+00 7.855E-06 8.184E-06 8.483E-06 8.776E-06 9.064E-06 9.347E-06 9.626E-06 9.899E-06 1.040E-05 0.000E+00
rh109 0.000E+00 2.108E-05 2.196E-05 2.275E-05 2.352E-05 2.428E-05 2.502E-05 2.574E-05 2.646E-05 2.775E-05 0.000E+00
rh109m 0.000E+00 6.589E-06 6.863E-06 7.110E-06 7.351E-06 7.587E-06 7.819E-06 8.045E-06 8.267E-06 8.673E-06 0.000E+00
pd109 0.000E+00 1.375E-02 1.438E-02 1.495E-02 1.552E-02 1.608E-02 1.663E-02 1.718E-02 1.772E-02 1.874E-02 8.430E-19
pd109m 0.000E+00 2.903E-07 3.082E-07 3.252E-07 3.422E-07 3.592E-07 3.764E-07 3.937E-07 4.113E-07 4.457E-07 0.000E+00
ag109 3.783E+00 4.177E+00 4.597E+00 5.027E+00 5.466E+00 5.915E+00 6.372E+00 6.836E+00 7.309E+00 8.274E+00 8.292E+00
ag109m 2.037E-15 1.104E-05 1.154E-05 1.200E-05 1.246E-05 1.291E-05 1.335E-05 1.379E-05 1.423E-05 1.504E-05 1.063E-14
cd109 2.056E-09 2.602E-09 3.217E-09 3.904E-09 4.670E-09 5.520E-09 6.459E-09 7.495E-09 8.633E-09 1.124E-08 1.073E-08
nb110 0.000E+00 3.456E-14 3.544E-14 3.628E-14 3.720E-14 3.818E-14 3.921E-14 4.029E-14 4.141E-14 4.363E-14 0.000E+00
mo110 0.000E+00 6.910E-10 7.152E-10 7.392E-10 7.651E-10 7.927E-10 8.218E-10 8.521E-10 8.835E-10 9.463E-10 0.000E+00
tc110 0.000E+00 5.765E-09 6.019E-09 6.267E-09 6.527E-09 6.797E-09 7.076E-09 7.362E-09 7.655E-09 8.230E-09 0.000E+00
ru110 0.000E+00 1.040E-06 1.083E-06 1.123E-06 1.164E-06 1.205E-06 1.245E-06 1.287E-06 1.328E-06 1.405E-06 0.000E+00
rh110 0.000E+00 3.986E-08 4.143E-08 4.282E-08 4.416E-08 4.545E-08 4.670E-08 4.791E-08 4.907E-08 5.116E-08 0.000E+00
rh110m 0.000E+00 2.335E-06 2.431E-06 2.520E-06 2.609E-06 2.699E-06 2.788E-06 2.876E-06 2.965E-06 3.132E-06 0.000E+00
pd110 1.549E+00 1.724E+00 1.906E+00 2.095E+00 2.291E+00 2.494E+00 2.703E+00 2.918E+00 3.140E+00 3.605E+00 3.605E+00

case 2 fission products page 40
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
ag110	1.491E-10	1.335E-06	1.483E-06	1.632E-06	1.786E-06	1.945E-06	2.108E-06	2.277E-06	2.451E-06	2.803E-06	6.479E-10
ag110m	9.616E-03	1.243E-02	1.542E-02	1.859E-02	2.192E-02	2.543E-02	2.911E-02	3.296E-02	3.698E-02	4.555E-02	4.179E-02
cd110	4.896E-01	5.843E-01	6.899E-01	8.065E-01	9.346E-01	1.074E+00	1.226E+00	1.391E+00	1.568E+00	1.963E+00	1.967E+00
nb111	0.000E+00	3.539E-16	3.590E-16	3.632E-16	3.678E-16	3.725E-16	3.775E-16	3.827E-16	3.881E-16	3.981E-16	0.000E+00
mo111	0.000E+00	1.095E-11	1.124E-11	1.151E-11	1.181E-11	1.212E-11	1.245E-11	1.280E-11	1.316E-11	1.388E-11	0.000E+00
tc111	0.000E+00	2.714E-09	2.819E-09	2.922E-09	3.031E-09	3.146E-09	3.266E-09	3.391E-09	3.518E-09	3.772E-09	0.000E+00
ru111	0.000E+00	3.670E-08	3.815E-08	3.952E-08	4.092E-08	4.235E-08	4.380E-08	4.527E-08	4.675E-08	4.960E-08	0.000E+00
rh111	0.000E+00	5.147E-07	5.349E-07	5.534E-07	5.718E-07	5.902E-07	6.086E-07	6.268E-07	6.450E-07	6.789E-07	0.000E+00
pd111	0.000E+00	7.002E-05	7.278E-05	7.530E-05	7.781E-05	8.031E-05	8.279E-05	8.526E-05	8.772E-05	9.229E-05	0.000E+00
pd111m	0.000E+00	4.634E-05	4.813E-05	4.969E-05	5.117E-05	5.259E-05	5.394E-05	5.524E-05	5.648E-05	5.865E-05	0.000E+00
ag111	6.972E-05	3.020E-02	3.312E-02	3.438E-02	3.555E-02	3.670E-02	3.785E-02	3.899E-02	4.012E-02	4.225E-02	2.370E-03
ag111m	0.000E+00	3.239E-06	3.366E-06	3.483E-06	3.599E-06	3.714E-06	3.829E-06	3.943E-06	4.056E-06	4.267E-06	0.000E+00

cd111	8.331E-01	8.934E-01	9.846E-01	1.081E+00	1.180E+00	1.283E+00	1.389E+00	1.498E+00	1.611E+00	1.846E+00	1.886E+00
cd111m	0.000E+00	3.809E-08	4.539E-08	5.339E-08	6.225E-08	7.202E-08	8.274E-08	9.445E-08	1.072E-07	1.356E-07	0.000E+00
nb112	0.000E+00	6.398E-18	6.465E-18	6.513E-18	6.564E-18	6.616E-18	6.670E-18	6.726E-18	6.783E-18	6.880E-18	0.000E+00
mo112	0.000E+00	3.243E-12	3.294E-12	3.338E-12	3.385E-12	3.435E-12	3.487E-12	3.542E-12	3.599E-12	3.706E-12	0.000E+00
tc112	0.000E+00	1.035E-10	1.064E-10	1.091E-10	1.120E-10	1.151E-10	1.184E-10	1.218E-10	1.253E-10	1.322E-10	0.000E+00
ru112	0.000E+00	2.883E-08	2.972E-08	3.055E-08	3.141E-08	3.230E-08	3.321E-08	3.414E-08	3.508E-08	3.690E-08	0.000E+00
rh112	0.000E+00	2.939E-08	3.036E-08	3.125E-08	3.213E-08	3.302E-08	3.390E-08	3.479E-08	3.567E-08	3.732E-08	0.000E+00
pd112	5.397E-24	1.849E-03	1.911E-03	1.967E-03	2.022E-03	2.077E-03	2.131E-03	2.185E-03	2.239E-03	2.337E-03	5.322E-14
ag112	9.461E-25	2.768E-04	2.861E-04	2.944E-04	3.027E-04	3.109E-04	3.191E-04	3.272E-04	3.352E-04	3.499E-04	9.330E-15
cd112	4.459E-01	4.900E-01	5.378E-01	5.871E-01	6.380E-01	6.905E-01	7.445E-01	8.001E-01	8.573E-01	9.763E-01	9.790E-01
mo113	0.000E+00	1.487E-14	1.503E-14	1.516E-14	1.530E-14	1.544E-14	1.558E-14	1.573E-14	1.589E-14	1.616E-14	0.000E+00
tc113	0.000E+00	3.840E-11	3.908E-11	3.971E-11	4.039E-11	4.112E-11	4.190E-11	4.272E-11	4.357E-11	4.523E-11	0.000E+00
ru113	0.000E+00	7.971E-09	8.142E-09	8.302E-09	8.474E-09	8.657E-09	8.850E-09	9.052E-09	9.261E-09	9.668E-09	0.000E+00
rh113	0.000E+00	8.836E-09	9.060E-09	9.263E-09	9.472E-09	9.686E-09	9.905E-09	1.013E-08	1.035E-08	1.078E-08	0.000E+00
pd113	0.000E+00	1.371E-06	1.407E-06	1.440E-06	1.473E-06	1.506E-06	1.539E-06	1.573E-06	1.606E-06	1.668E-06	0.000E+00
ag113	0.000E+00	2.771E-04	2.845E-04	2.911E-04	2.978E-04	3.045E-04	3.112E-04	3.180E-04	3.247E-04	3.372E-04	0.000E+00
ag113m	0.000E+00	1.975E-07	2.029E-07	2.077E-07	2.124E-07	2.172E-07	2.220E-07	2.268E-07	2.316E-07	2.405E-07	0.000E+00
cd113	1.266E-02	1.220E-02	1.236E-02	1.257E-02	1.278E-02	1.299E-02	1.320E-02	1.341E-02	1.361E-02	1.404E-02	1.437E-02
cd113m	4.843E-03	5.321E-03	5.820E-03	6.333E-03	6.862E-03	7.407E-03	7.968E-03	8.545E-03	9.139E-03	1.038E-02	1.034E-02
in113	2.683E-04	2.880E-04	3.096E-04	3.331E-04	3.587E-04	3.863E-04	4.161E-04	4.480E-04	4.822E-04	5.575E-04	6.007E-04
in113m	0.000E+00	8.922E-14	9.272E-14	9.573E-14	9.853E-14	1.012E-13	1.036E-13	1.059E-13	1.081E-13	1.118E-13	0.000E+00
mo114	0.000E+00	1.248E-14	1.261E-14	1.269E-14	1.279E-14	1.288E-14	1.298E-14	1.308E-14	1.319E-14	1.337E-14	0.000E+00
tc114	0.000E+00	1.891E-12	1.915E-12	1.935E-12	1.957E-12	1.980E-12	2.004E-12	2.030E-12	2.056E-12	2.106E-12	0.000E+00
ru114	0.000E+00	8.246E-09	8.368E-09	8.474E-09	8.587E-09	8.707E-09	8.834E-09	8.966E-09	9.104E-09	9.363E-09	0.000E+00
rh114	0.000E+00	8.899E-09	9.085E-09	9.245E-09	9.407E-09	9.571E-09	9.737E-09	9.904E-09	1.007E-08	1.038E-08	0.000E+00
pd114	0.000E+00	1.789E-06	1.832E-06	1.869E-06	1.905E-06	1.940E-06	1.975E-06	2.009E-06	2.042E-06	2.101E-06	0.000E+00
ag114	0.000E+00	5.808E-08	5.950E-08	6.070E-08	6.188E-08	6.304E-08	6.417E-08	6.528E-08	6.638E-08	6.830E-08	0.000E+00
cd114	5.317E-01	5.818E-01	6.329E-01	6.850E-01	7.382E-01	7.926E-01	8.481E-01	9.046E-01	9.623E-01	1.081E+00	1.081E+00
in114	5.443E-12	2.944E-11	3.825E-11	4.554E-11	5.201E-11	5.811E-11	6.411E-11	7.023E-11	7.658E-11	9.026E-11	4.010E-11
in114m	3.384E-07	9.698E-07	1.444E-06	1.820E-06	2.139E-06	2.426E-06	2.700E-06	2.972E-06	3.251E-06	3.848E-06	2.493E-06
sn114	4.035E-06	4.647E-06	5.510E-06	6.575E-06	7.814E-06	9.211E-06	1.076E-05	1.246E-05	1.432E-05	1.855E-05	1.984E-05
mo115	0.000E+00	1.852E-17	1.869E-17	1.880E-17	1.891E-17	1.903E-17	1.915E-17	1.927E-17	1.940E-17	1.960E-17	0.000E+00
tc115	0.000E+00	8.866E-14	8.954E-14	9.018E-14	9.085E-14	9.155E-14	9.228E-14	9.303E-14	9.380E-14	9.514E-14	0.000E+00
ru115	0.000E+00	2.085E-10	2.108E-10	2.126E-10	2.145E-10	2.166E-10	2.189E-10	2.212E-10	2.236E-10	2.281E-10	0.000E+00
rh115	0.000E+00	1.852E-08	1.880E-08	1.904E-08	1.928E-08	1.953E-08	1.978E-08	2.004E-08	2.031E-08	2.080E-08	0.000E+00
pd115	0.000E+00	2.916E-07	2.973E-07	3.020E-07	3.066E-07	3.112E-07	3.157E-07	3.201E-07	3.245E-07	3.321E-07	0.000E+00
ag115	0.000E+00	7.274E-06	7.421E-06	7.542E-06	7.661E-06	7.778E-06	7.893E-06	8.006E-06	8.116E-06	8.309E-06	0.000E+00
ag115m	0.000E+00	4.556E-08	4.653E-08	4.733E-08	4.811E-08	4.887E-08	4.961E-08	5.034E-08	5.105E-08	5.227E-08	0.000E+00

case 2 fission products page 41
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
cd115	9.109E-12	1.612E-03	1.647E-03	1.676E-03	1.705E-03	1.734E-03	1.761E-03	1.789E-03	1.816E-03	1.864E-03	1.213E-07
cd115m	2.974E-04	7.315E-04	1.013E-03	1.199E-03	1.324E-03	1.414E-03	1.480E-03	1.531E-03	1.574E-03	1.645E-03	1.016E-03
in115	1.186E-01	1.237E-01	1.304E-01	1.369E-01	1.433E-01	1.495E-01	1.555E-01	1.613E-01	1.669E-01	1.775E-01	1.801E-01
in115m	1.385E-10	1.353E-04	1.382E-04	1.407E-04	1.431E-04	1.454E-04	1.478E-04	1.501E-04	1.524E-04	1.564E-04	1.158E-08
sn115	8.616E-03	9.267E-03	1.002E-02	1.078E-02	1.155E-02	1.234E-02	1.313E-02	1.394E-02	1.475E-02	1.641E-02	1.652E-02
tc116	0.000E+00	1.616E-14	1.630E-14	1.640E-14	1.649E-14	1.660E-14	1.670E-14	1.681E-14	1.692E-14	1.710E-14	0.000E+00
ru116	0.000E+00	1.363E-10	1.374E-10	1.380E-10	1.387E-10	1.395E-10	1.402E-10	1.411E-10	1.420E-10	1.434E-10	0.000E+00
rh116	0.000E+00	1.118E-09	1.128E-09	1.135E-09	1.142E-09	1.149E-09	1.156E-09	1.164E-09	1.171E-09	1.183E-09	0.000E+00
pd116	0.000E+00	1.138E-07	1.154E-07	1.165E-07	1.177E-07	1.187E-07	1.198E-07	1.208E-07	1.217E-07	1.232E-07	0.000E+00
ag116	0.000E+00	1.638E-06	1.663E-06	1.682E-06	1.700E-06	1.717E-06	1.734E-06	1.750E-06	1.765E-06	1.789E-06	0.000E+00
ag116m	0.000E+00	1.266E-08	1.298E-08	1.325E-08	1.349E-08	1.373E-08	1.394E-08	1.414E-08	1.433E-08	1.464E-08	0.000E+00
cd116	2.537E-01	2.749E-01	2.964E-01	3.182E-01	3.402E-01	3.625E-01	3.851E-01	4.078E-01	4.308E-01	4.775E-01	4.775E-01
in116	0.000E+00	1.354E-08	1.440E-08	1.522E-08	1.603E-08	1.683E-08	1.762E-08	1.840E-08	1.916E-08	2.060E-08	0.000E+00
in116m	0.000E+00	1.174E-05	1.248E-05	1.319E-05	1.390E-05	1.459E-05	1.527E-05	1.595E-05	1.661E-05	1.785E-05	0.000E+00
sn116	5.680E-02	6.501E-02	7.376E-02	8.301E-02	9.278E-02	1.030E-01	1.138E-01	1.251E-01	1.368E-01	1.617E-01	1.617E-01
tc117	0.000E+00	2.617E-16	2.641E-16	2.656E-16	2.673E-16	2.690E-16	2.707E-16	2.724E-16	2.742E-16	2.770E-16	0.000E+00
ru117	0.000E+00	4.289E-12	4.326E-12	4.352E-12	4.379E-12	4.407E-12	4.437E-12	4.467E-12	4.499E-12	4.551E-12	0.000E+00
rh117	0.000E+00	5.493E-10	5.554E-10	5.598E-10	5.643E-10	5.689E-10	5.737E-10	5.785E-10	5.835E-10	5.918E-10	0.000E+00
pd117	0.000E+00	2.966E-08	3.017E-08	3.057E-08	3.095E-08	3.132E-08	3.168E-08	3.203E-08	3.236E-08	3.291E-08	0.000E+00
ag117	0.000E+00	3.720E-07	3.805E-07	3.875E-07	3.941E-07	4.004E-07	4.064E-07	4.121E-07	4.176E-07	4.266E-07	0.000E+00
ag117m	0.000E+00	2.729E-08	2.791E-08	2.842E-08	2.891E-08	2.937E-08	2.981E-08	3.023E-08	3.063E-08	3.129E-08	0.000E+00
cd117	0.000E+00	8.012E-05	8.197E-05	8.348E-05	8.492E-05	8.629E-05	8.759E-05	8.884E-05	9.003E-05	9.200E-05	0.000E+00
cd117m	0.000E+00	2.444E-05	2.506E-05	2.557E-05	2.605E-05	2.651E-05	2.694E-05	2.735E-05	2.774E-05	2.839E-05	0.000E+00
in117	0.000E+00	1.746E-05	1.787E-05	1.821E-05	1.854E-05	1.884E-05	1.913E-05	1.941E-05	1.968E-05	2.012E-05	0.000E+00
in117m	0.000E+00	5.707E-05	5.839E-05	5.947E-05	6.049E-05	6.147E-05	6.240E-05	6.328E-05	6.413E-05	6.553E-05	0.000E+00
sn117	2.208E-01	2.405E-01	2.609E-01	2.817E-01	3.029E-01	3.244E-01	3.463E-01	3.685E-01	3.910E-01	4.368E-01	4.371E-01
sn117m	1.213E-06	3.839E-05	4.894E-05	5.382E-05	5.759E-05	6.123E-05	6.493E-05	6.875E-05	7.269E-05	8.086E-05	1.674E-05
tc118	0.000E+00	4.208E-18	4.246E-18	4.270E-18	4.296E-18	4.322E-18	4.348E-18	4.375E-18	4.402E-18	4.445E-18	0.000E+00
ru118	0.000E+00	1.344E-12	1.357E-12	1.365E-12	1.374E-12	1.383E-12	1.393E-12	1.403E-12	1.413E-12	1.430E-12	0.000E+00
rh118	0.000E+00	3.364E-11	3.401E-11	3.429E-11	3.459E-11	3.490E-11	3.522E-11	3.556E-11	3.590E-11	3.651E-11	0.000E+00
pd118	0.000E+00	8.828E-09	8.960E-09	9.063E-09	9.167E-09	9.271E-09	9.375E-09	9.479E-09	9.582E-09	9.761E-09	0.000E+00

ag118	0.000E+00	1.859E-08	1.890E-08	1.914E-08	1.937E-08	1.959E-08	1.981E-08	2.001E-08	2.022E-08	2.054E-08	0.000E+00
ag118m	0.000E+00	7.014E-09	7.130E-09	7.220E-09	7.306E-09	7.390E-09	7.471E-09	7.550E-09	7.626E-09	7.750E-09	0.000E+00
cd118	0.000E+00	2.590E-05	2.638E-05	2.676E-05	2.711E-05	2.746E-05	2.779E-05	2.810E-05	2.841E-05	2.890E-05	0.000E+00
in118	0.000E+00	4.297E-08	4.376E-08	4.438E-08	4.498E-08	4.555E-08	4.610E-08	4.662E-08	4.713E-08	4.795E-08	0.000E+00
in118m	0.000E+00	2.751E-09	2.844E-09	2.923E-09	2.996E-09	3.064E-09	3.128E-09	3.188E-09	3.244E-09	3.337E-09	0.000E+00
sn118	1.863E-01	2.022E-01	2.183E-01	2.347E-01	2.513E-01	2.682E-01	2.852E-01	3.025E-01	3.200E-01	3.556E-01	3.556E-01
ru119	0.000E+00	5.187E-14	5.227E-14	5.251E-14	5.276E-14	5.302E-14	5.328E-14	5.355E-14	5.382E-14	5.423E-14	0.000E+00
rh119	0.000E+00	1.819E-11	1.827E-11	1.830E-11	1.833E-11	1.836E-11	1.839E-11	1.842E-11	1.846E-11	1.848E-11	0.000E+00
pd119	0.000E+00	2.804E-09	2.816E-09	2.818E-09	2.819E-09	2.820E-09	2.820E-09	2.820E-09	2.820E-09	2.810E-09	0.000E+00
ag119	0.000E+00	1.235E-08	1.249E-08	1.259E-08	1.269E-08	1.277E-08	1.285E-08	1.292E-08	1.298E-08	1.306E-08	0.000E+00
cd119	0.000E+00	9.952E-07	1.011E-06	1.023E-06	1.035E-06	1.045E-06	1.056E-06	1.065E-06	1.074E-06	1.088E-06	0.000E+00
cd119m	0.000E+00	3.794E-07	3.872E-07	3.936E-07	3.997E-07	4.055E-07	4.111E-07	4.165E-07	4.217E-07	4.304E-07	0.000E+00
in119	0.000E+00	5.387E-07	5.498E-07	5.587E-07	5.673E-07	5.756E-07	5.836E-07	5.914E-07	5.988E-07	6.113E-07	0.000E+00
in119m	0.000E+00	6.022E-06	6.119E-06	6.194E-06	6.263E-06	6.329E-06	6.392E-06	6.451E-06	6.508E-06	6.595E-06	0.000E+00
sn119	1.984E-01	2.151E-01	2.322E-01	2.495E-01	2.670E-01	2.847E-01	3.027E-01	3.208E-01	3.392E-01	3.765E-01	3.766E-01
sn119m	4.969E-04	5.816E-04	6.669E-04	7.526E-04	8.387E-04	9.253E-04	1.013E-03	1.100E-03	1.189E-03	1.369E-03	1.272E-03
ru120	0.000E+00	1.182E-14	1.193E-14	1.200E-14	1.207E-14	1.214E-14	1.222E-14	1.230E-14	1.237E-14	1.250E-14	0.000E+00
rh120	0.000E+00	1.507E-12	1.520E-12	1.528E-12	1.538E-12	1.548E-12	1.558E-12	1.569E-12	1.580E-12	1.599E-12	0.000E+00
pd120	0.000E+00	3.336E-09	3.361E-09	3.378E-09	3.395E-09	3.414E-09	3.434E-09	3.455E-09	3.478E-09	3.514E-09	0.000E+00

case 2 fission products page 42
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
ag120	0.000E+00	4.581E-09	4.637E-09	4.679E-09	4.721E-09	4.762E-09	4.802E-09	4.843E-09	4.882E-09	4.947E-09	0.000E+00
cd120	0.000E+00	4.385E-07	4.459E-07	4.516E-07	4.570E-07	4.623E-07	4.673E-07	4.721E-07	4.767E-07	4.841E-07	0.000E+00
in120	0.000E+00	2.703E-08	2.749E-08	2.785E-08	2.819E-08	2.852E-08	2.883E-08	2.913E-08	2.942E-08	2.988E-08	0.000E+00
in120m	0.000E+00	6.703E-09	6.904E-09	7.072E-09	7.228E-09	7.374E-09	7.511E-09	7.639E-09	7.760E-09	7.957E-09	0.000E+00
sn120	1.953E-01	2.117E-01	2.283E-01	2.452E-01	2.623E-01	2.797E-01	2.972E-01	3.149E-01	3.328E-01	3.692E-01	3.692E-01
rh121	0.000E+00	6.037E-13	6.089E-13	6.124E-13	6.160E-13	6.197E-13	6.237E-13	6.277E-13	6.319E-13	6.387E-13	0.000E+00
pd121	0.000E+00	2.298E-10	2.315E-10	2.326E-10	2.338E-10	2.351E-10	2.364E-10	2.378E-10	2.393E-10	2.417E-10	0.000E+00
ag121	0.000E+00	2.273E-09	2.297E-09	2.314E-09	2.330E-09	2.347E-09	2.364E-09	2.380E-09	2.397E-09	2.424E-09	0.000E+00
cd121	0.000E+00	1.183E-07	1.201E-07	1.215E-07	1.229E-07	1.241E-07	1.254E-07	1.265E-07	1.277E-07	1.294E-07	0.000E+00
in121	0.000E+00	1.852E-08	1.900E-08	1.940E-08	1.977E-08	2.012E-08	2.044E-08	2.075E-08	2.104E-08	2.150E-08	0.000E+00
in121m	0.000E+00	2.078E-06	2.110E-06	2.135E-06	2.159E-06	2.182E-06	2.204E-06	2.225E-06	2.245E-06	2.277E-06	0.000E+00
sn121	8.490E-08	9.293E-04	9.448E-04	9.566E-04	9.679E-04	9.787E-04	9.890E-04	9.989E-04	1.008E-03	1.023E-03	1.736E-07

sn121m	1.949E-03	2.136E-03	2.328E-03	2.524E-03	2.724E-03	2.927E-03	3.134E-03	3.344E-03	3.557E-03	3.991E-03	3.987E-03
sb121	2.060E-01	2.218E-01	2.388E-01	2.559E-01	2.732E-01	2.906E-01	3.082E-01	3.259E-01	3.437E-01	3.796E-01	3.806E-01
rh122	0.000E+00	2.883E-14	2.908E-14	2.924E-14	2.941E-14	2.959E-14	2.977E-14	2.996E-14	3.016E-14	3.047E-14	0.000E+00
pd122	0.000E+00	1.668E-10	1.681E-10	1.688E-10	1.696E-10	1.705E-10	1.714E-10	1.724E-10	1.734E-10	1.750E-10	0.000E+00
ag122	0.000E+00	7.117E-10	7.188E-10	7.236E-10	7.285E-10	7.333E-10	7.382E-10	7.431E-10	7.480E-10	7.557E-10	0.000E+00
cd122	0.000E+00	4.975E-08	5.053E-08	5.111E-08	5.167E-08	5.220E-08	5.270E-08	5.318E-08	5.364E-08	5.435E-08	0.000E+00
in122	0.000E+00	1.579E-08	1.606E-08	1.626E-08	1.645E-08	1.663E-08	1.680E-08	1.697E-08	1.712E-08	1.737E-08	0.000E+00
in122m	0.000E+00	1.064E-08	1.093E-08	1.116E-08	1.139E-08	1.159E-08	1.179E-08	1.197E-08	1.214E-08	1.242E-08	0.000E+00
sn122	2.527E-01	2.741E-01	2.959E-01	3.180E-01	3.403E-01	3.630E-01	3.859E-01	4.091E-01	4.324E-01	4.799E-01	4.799E-01
sb122	1.297E-11	9.968E-05	1.083E-04	1.169E-04	1.255E-04	1.344E-04	1.435E-04	1.527E-04	1.621E-04	1.809E-04	6.330E-08
sb122m	0.000E+00	1.081E-08	1.174E-08	1.266E-08	1.360E-08	1.456E-08	1.554E-08	1.654E-08	1.756E-08	1.960E-08	0.000E+00
te122	4.620E-03	5.256E-03	6.044E-03	6.897E-03	7.814E-03	8.797E-03	9.847E-03	1.097E-02	1.215E-02	1.475E-02	1.492E-02
rh123	0.000E+00	3.080E-15	3.107E-15	3.126E-15	3.145E-15	3.164E-15	3.185E-15	3.205E-15	3.226E-15	3.261E-15	0.000E+00
pd123	0.000E+00	6.160E-12	6.212E-12	6.247E-12	6.284E-12	6.323E-12	6.364E-12	6.406E-12	6.450E-12	6.521E-12	0.000E+00
ag123	0.000E+00	2.293E-10	2.315E-10	2.330E-10	2.346E-10	2.363E-10	2.380E-10	2.397E-10	2.416E-10	2.446E-10	0.000E+00
cd123	0.000E+00	5.469E-08	5.549E-08	5.609E-08	5.667E-08	5.724E-08	5.780E-08	5.833E-08	5.886E-08	5.970E-08	0.000E+00
in123	0.000E+00	4.621E-08	4.707E-08	4.775E-08	4.839E-08	4.901E-08	4.960E-08	5.016E-08	5.071E-08	5.158E-08	0.000E+00
in123m	0.000E+00	1.010E-07	1.029E-07	1.043E-07	1.057E-07	1.070E-07	1.082E-07	1.094E-07	1.106E-07	1.124E-07	0.000E+00
sn123	3.638E-03	4.565E-03	5.364E-03	6.050E-03	6.638E-03	7.143E-03	7.576E-03	7.948E-03	8.267E-03	8.776E-03	7.431E-03
sn123m	0.000E+00	2.470E-05	2.510E-05	2.541E-05	2.571E-05	2.599E-05	2.625E-05	2.651E-05	2.675E-05	2.714E-05	0.000E+00
sb123	2.402E-01	2.591E-01	2.784E-01	2.980E-01	3.179E-01	3.381E-01	3.585E-01	3.791E-01	3.999E-01	4.420E-01	4.434E-01
te123	1.981E-05	2.291E-05	2.670E-05	3.117E-05	3.633E-05	4.220E-05	4.878E-05	5.608E-05	6.413E-05	8.256E-05	8.690E-05
te123m	3.158E-06	4.907E-06	6.739E-06	8.673E-06	1.073E-05	1.292E-05	1.526E-05	1.778E-05	2.047E-05	2.645E-05	2.211E-05
pd124	0.000E+00	5.824E-12	5.864E-12	5.888E-12	5.914E-12	5.941E-12	5.970E-12	6.000E-12	6.032E-12	6.080E-12	0.000E+00
ag124	0.000E+00	1.174E-10	1.181E-10	1.185E-10	1.190E-10	1.194E-10	1.199E-10	1.203E-10	1.208E-10	1.215E-10	0.000E+00
cd124	0.000E+00	8.824E-09	8.926E-09	8.996E-09	9.062E-09	9.124E-09	9.183E-09	9.239E-09	9.292E-09	9.365E-09	0.000E+00
in124	0.000E+00	5.672E-08	5.768E-08	5.840E-08	5.908E-08	5.971E-08	6.031E-08	6.087E-08	6.139E-08	6.218E-08	0.000E+00
sn124	4.233E-01	4.593E-01	4.959E-01	5.330E-01	5.706E-01	6.087E-01	6.472E-01	6.861E-01	7.253E-01	8.049E-01	8.049E-01
sb124	3.965E-04	7.993E-04	1.126E-03	1.399E-03	1.636E-03	1.848E-03	2.043E-03	2.229E-03	2.408E-03	2.758E-03	1.930E-03
sb124m	0.000E+00	9.866E-10	1.040E-09	1.089E-09	1.139E-09	1.188E-09	1.238E-09	1.287E-09	1.336E-09	1.431E-09	0.000E+00
te124	3.557E-03	3.776E-03	4.123E-03	4.576E-03	5.119E-03	5.742E-03	6.436E-03	7.199E-03	8.026E-03	9.872E-03	1.070E-02
pd125	0.000E+00	4.525E-13	4.557E-13	4.575E-13	4.594E-13	4.613E-13	4.633E-13	4.653E-13	4.673E-13	4.702E-13	0.000E+00
ag125	0.000E+00	7.170E-11	7.204E-11	7.215E-11	7.226E-11	7.235E-11	7.244E-11	7.253E-11	7.261E-11	7.256E-11	0.000E+00
cd125	0.000E+00	9.566E-09	9.668E-09	9.732E-09	9.789E-09	9.840E-09	9.886E-09	9.927E-09	9.963E-09	9.996E-09	0.000E+00
in125	0.000E+00	2.369E-08	2.412E-08	2.445E-08	2.475E-08	2.503E-08	2.530E-08	2.554E-08	2.577E-08	2.610E-08	0.000E+00
in125m	0.000E+00	9.387E-08	9.580E-08	9.733E-08	9.874E-08	1.001E-07	1.013E-07	1.024E-07	1.035E-07	1.052E-07	0.000E+00
sn125	3.806E-05	4.466E-03	5.029E-03	5.152E-03	5.223E-03	5.285E-03	5.345E-03	5.402E-03	5.457E-03	5.547E-03	5.970E-04
sn125m	0.000E+00	1.038E-05	1.059E-05	1.076E-05	1.092E-05	1.107E-05	1.120E-05	1.133E-05	1.146E-05	1.165E-05	0.000E+00

case 2 fission products page 43
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
sb125	3.863E-01	4.176E-01	4.529E-01	4.887E-01	5.244E-01	5.599E-01	5.953E-01	6.305E-01	6.655E-01	7.348E-01	7.240E-01
te125	1.206E-01	1.290E-01	1.380E-01	1.476E-01	1.579E-01	1.690E-01	1.808E-01	1.933E-01	2.065E-01	2.351E-01	2.505E-01
te125m	5.027E-03	5.137E-03	5.353E-03	5.649E-03	6.001E-03	6.392E-03	6.808E-03	7.242E-03	7.687E-03	8.595E-03	8.957E-03
pd126	0.000E+00	1.557E-13	1.570E-13	1.579E-13	1.588E-13	1.597E-13	1.607E-13	1.617E-13	1.627E-13	1.643E-13	0.000E+00
ag126	0.000E+00	1.292E-11	1.301E-11	1.307E-11	1.313E-11	1.320E-11	1.328E-11	1.336E-11	1.344E-11	1.357E-11	0.000E+00
cd126	0.000E+00	3.641E-09	3.679E-09	3.706E-09	3.732E-09	3.757E-09	3.782E-09	3.807E-09	3.831E-09	3.868E-09	0.000E+00
in126	0.000E+00	3.415E-08	3.490E-08	3.550E-08	3.606E-08	3.658E-08	3.708E-08	3.754E-08	3.798E-08	3.868E-08	0.000E+00
sn126	8.957E-01	9.788E-01	1.064E+00	1.151E+00	1.239E+00	1.329E+00	1.421E+00	1.514E+00	1.608E+00	1.800E+00	1.800E+00
sb126	7.019E-06	2.958E-04	3.605E-04	3.839E-04	3.994E-04	4.131E-04	4.261E-04	4.386E-04	4.508E-04	4.730E-04	8.366E-05
sb126m	3.235E-10	4.989E-07	5.188E-07	5.364E-07	5.532E-07	5.693E-07	5.847E-07	5.996E-07	6.139E-07	6.392E-07	6.501E-10
te126	1.224E-02	1.332E-02	1.468E-02	1.614E-02	1.766E-02	1.923E-02	2.086E-02	2.253E-02	2.426E-02	2.785E-02	2.824E-02
xe126	9.275E-11	1.070E-10	1.231E-10	1.413E-10	1.618E-10	1.848E-10	2.105E-10	2.391E-10	2.708E-10	3.449E-10	3.449E-10
ag127	0.000E+00	8.832E-12	8.908E-12	8.963E-12	9.022E-12	9.087E-12	9.157E-12	9.231E-12	9.308E-12	9.443E-12	0.000E+00
cd127	0.000E+00	3.134E-09	3.163E-09	3.184E-09	3.206E-09	3.229E-09	3.252E-09	3.277E-09	3.303E-09	3.346E-09	0.000E+00
in127	0.000E+00	2.491E-08	2.533E-08	2.565E-08	2.597E-08	2.627E-08	2.657E-08	2.685E-08	2.713E-08	2.757E-08	0.000E+00
in127m	0.000E+00	8.141E-08	8.278E-08	8.385E-08	8.488E-08	8.587E-08	8.684E-08	8.777E-08	8.867E-08	9.014E-08	0.000E+00
sn127	0.000E+00	3.166E-04	3.239E-04	3.298E-04	3.353E-04	3.404E-04	3.453E-04	3.499E-04	3.543E-04	3.612E-04	0.000E+00
sn127m	0.000E+00	1.411E-05	1.439E-05	1.460E-05	1.481E-05	1.500E-05	1.519E-05	1.537E-05	1.554E-05	1.582E-05	0.000E+00
sb127	4.522E-07	3.455E-02	3.539E-02	3.598E-02	3.654E-02	3.707E-02	3.757E-02	3.804E-02	3.849E-02	3.932E-02	1.495E-04
te127	2.115E-04	3.148E-03	3.281E-03	3.383E-03	3.474E-03	3.557E-03	3.632E-03	3.701E-03	3.764E-03	3.872E-03	5.179E-04
te127m	6.041E-02	7.493E-02	9.257E-02	1.076E-01	1.205E-01	1.316E-01	1.412E-01	1.495E-01	1.567E-01	1.682E-01	1.440E-01
i127	2.081E+00	2.217E+00	2.389E+00	2.567E+00	2.750E+00	2.937E+00	3.128E+00	3.322E+00	3.519E+00	3.918E+00	3.985E+00
xe127	2.986E-09	1.139E-08	1.778E-08	2.315E-08	2.813E-08	3.307E-08	3.816E-08	4.352E-08	4.924E-08	6.194E-08	3.432E-08
ag128	0.000E+00	2.309E-12	2.327E-12	2.337E-12	2.349E-12	2.361E-12	2.374E-12	2.387E-12	2.401E-12	2.423E-12	0.000E+00
cd128	0.000E+00	5.563E-09	5.581E-09	5.585E-09	5.591E-09	5.600E-09	5.610E-09	5.624E-09	5.638E-09	5.657E-09	0.000E+00
in128	0.000E+00	3.867E-08	3.875E-08	3.872E-08	3.870E-08	3.869E-08	3.869E-08	3.869E-08	3.871E-08	3.864E-08	0.000E+00
sn128	0.000E+00	6.650E-04	6.717E-04	6.759E-04	6.798E-04	6.835E-04	6.868E-04	6.900E-04	6.930E-04	6.963E-04	0.000E+00
sb128	0.000E+00	6.087E-04	6.205E-04	6.296E-04	6.380E-04	6.459E-04	6.531E-04	6.599E-04	6.662E-04	6.754E-04	0.000E+00
sb128m	0.000E+00	1.232E-04	1.246E-04	1.255E-04	1.263E-04	1.271E-04	1.278E-04	1.285E-04	1.291E-04	1.299E-04	0.000E+00
te128	4.854E+00	5.238E+00	5.628E+00	6.021E+00	6.417E+00	6.816E+00	7.217E+00	7.621E+00	8.027E+00	8.847E+00	8.848E+00
i128	0.000E+00	5.672E-06	6.170E-06	6.670E-06	7.190E-06	7.727E-06	8.282E-06	8.853E-06	9.439E-06	1.062E-05	0.000E+00

xe128	3.667E-02	4.288E-02	4.964E-02	5.695E-02	6.484E-02	7.333E-02	8.245E-02	9.220E-02	1.026E-01	1.255E-01	1.256E-01
cd129	0.000E+00	7.752E-10	7.793E-10	7.812E-10	7.835E-10	7.860E-10	7.889E-10	7.919E-10	7.952E-10	8.001E-10	0.000E+00
in129	0.000E+00	2.918E-08	2.925E-08	2.925E-08	2.925E-08	2.925E-08	2.927E-08	2.929E-08	2.932E-08	2.931E-08	0.000E+00
sn129	0.000E+00	2.137E-05	2.161E-05	2.177E-05	2.192E-05	2.206E-05	2.220E-05	2.233E-05	2.246E-05	2.264E-05	0.000E+00
sn129m	0.000E+00	6.911E-05	6.932E-05	6.930E-05	6.926E-05	6.921E-05	6.915E-05	6.908E-05	6.900E-05	6.863E-05	0.000E+00
sb129	0.000E+00	6.818E-03	6.891E-03	6.939E-03	6.982E-03	7.023E-03	7.061E-03	7.096E-03	7.130E-03	7.169E-03	0.000E+00
te129	3.440E-05	1.603E-03	1.667E-03	1.703E-03	1.728E-03	1.745E-03	1.759E-03	1.770E-03	1.780E-03	1.792E-03	1.229E-04
te129m	3.731E-02	1.307E-01	1.823E-01	2.107E-01	2.266E-01	2.359E-01	2.415E-01	2.452E-01	2.478E-01	2.513E-01	1.333E-01
i129	1.007E+01	1.075E+01	1.149E+01	1.225E+01	1.304E+01	1.383E+01	1.463E+01	1.544E+01	1.625E+01	1.787E+01	1.800E+01
xe129	6.137E-05	7.372E-05	9.096E-05	1.112E-04	1.345E-04	1.611E-04	1.913E-04	2.253E-04	2.635E-04	3.537E-04	3.634E-04
xe129m	1.536E-08	3.063E-06	3.869E-06	4.509E-06	5.184E-06	5.916E-06	6.710E-06	7.569E-06	8.495E-06	1.054E-05	9.403E-07
cd130	0.000E+00	4.683E-10	4.698E-10	4.700E-10	4.705E-10	4.711E-10	4.719E-10	4.729E-10	4.740E-10	4.752E-10	0.000E+00
in130	0.000E+00	1.237E-08	1.230E-08	1.219E-08	1.210E-08	1.200E-08	1.192E-08	1.184E-08	1.177E-08	1.161E-08	0.000E+00
sn130	0.000E+00	1.080E-04	1.081E-04	1.078E-04	1.076E-04	1.073E-04	1.071E-04	1.069E-04	1.067E-04	1.060E-04	0.000E+00
sb130	0.000E+00	3.411E-04	3.456E-04	3.486E-04	3.513E-04	3.538E-04	3.561E-04	3.582E-04	3.600E-04	3.622E-04	0.000E+00
sb130m	0.000E+00	2.434E-04	2.438E-04	2.435E-04	2.432E-04	2.429E-04	2.426E-04	2.423E-04	2.420E-04	2.408E-04	0.000E+00
te130	2.095E+01	2.250E+01	2.406E+01	2.563E+01	2.719E+01	2.876E+01	3.032E+01	3.189E+01	3.347E+01	3.662E+01	3.662E+01
i130	0.000E+00	4.851E-04	5.218E-04	5.585E-04	5.963E-04	6.349E-04	6.743E-04	7.144E-04	7.550E-04	8.358E-04	6.394E-22
i130m	0.000E+00	3.041E-06	3.277E-06	3.514E-06	3.759E-06	4.010E-06	4.265E-06	4.526E-06	4.790E-06	5.318E-06	0.000E+00

case 2 fission products page 44
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
xe130	1.352E-01	1.557E-01	1.783E-01	2.025E-01	2.283E-01	2.559E-01	2.852E-01	3.163E-01	3.492E-01	4.206E-01	4.214E-01
cd131	0.000E+00	1.580E-11	1.591E-11	1.597E-11	1.603E-11	1.610E-11	1.617E-11	1.625E-11	1.633E-11	1.646E-11	0.000E+00
in131	0.000E+00	4.313E-09	4.307E-09	4.289E-09	4.274E-09	4.262E-09	4.252E-09	4.244E-09	4.239E-09	4.220E-09	0.000E+00
sn131	0.000E+00	1.594E-05	1.596E-05	1.592E-05	1.590E-05	1.588E-05	1.586E-05	1.585E-05	1.584E-05	1.579E-05	0.000E+00
sb131	0.000E+00	1.570E-03	1.572E-03	1.570E-03	1.567E-03	1.565E-03	1.563E-03	1.560E-03	1.558E-03	1.550E-03	0.000E+00
te131	2.899E-19	1.807E-03	1.814E-03	1.815E-03	1.815E-03	1.816E-03	1.816E-03	1.816E-03	1.817E-03	1.811E-03	3.292E-12
te131m	9.272E-17	2.824E-02	2.869E-02	2.902E-02	2.932E-02	2.960E-02	2.987E-02	3.011E-02	3.034E-02	3.065E-02	1.053E-09
i131	3.313E-03	9.032E-01	9.746E-01	9.817E-01	9.840E-01	9.857E-01	9.872E-01	9.886E-01	9.899E-01	9.928E-01	7.133E-02
xe131	3.097E+01	3.205E+01	3.397E+01	3.592E+01	3.785E+01	3.974E+01	4.159E+01	4.341E+01	4.519E+01	4.865E+01	4.961E+01
xe131m	7.521E-04	1.107E-02	1.595E-02	1.710E-02	1.741E-02	1.757E-02	1.770E-02	1.781E-02	1.793E-02	1.812E-02	6.252E-03
cd132	0.000E+00	2.465E-12	2.482E-12	2.492E-12	2.503E-12	2.514E-12	2.526E-12	2.538E-12	2.551E-12	2.569E-12	0.000E+00
in132	0.000E+00	7.963E-10	7.955E-10	7.925E-10	7.900E-10	7.878E-10	7.860E-10	7.846E-10	7.834E-10	7.795E-10	0.000E+00

sn132	0.000E+00	1.300E-05	1.304E-05	1.305E-05	1.306E-05	1.307E-05	1.308E-05	1.309E-05	1.311E-05	1.311E-05	0.000E+00
sb132	0.000E+00	1.666E-04	1.677E-04	1.682E-04	1.687E-04	1.692E-04	1.696E-04	1.700E-04	1.704E-04	1.705E-04	0.000E+00
sb132m	0.000E+00	1.116E-04	1.115E-04	1.112E-04	1.108E-04	1.105E-04	1.102E-04	1.099E-04	1.096E-04	1.088E-04	0.000E+00
te132	1.084E-06	5.778E-01	5.808E-01	5.814E-01	5.819E-01	5.824E-01	5.827E-01	5.830E-01	5.833E-01	5.835E-01	7.980E-04
i132	3.263E-08	1.714E-02	1.723E-02	1.726E-02	1.728E-02	1.730E-02	1.731E-02	1.733E-02	1.734E-02	1.735E-02	2.401E-05
xe132	5.645E+01	6.030E+01	6.479E+01	6.933E+01	7.391E+01	7.854E+01	8.322E+01	8.794E+01	9.271E+01	1.024E+02	1.030E+02
cs132	7.683E-09	8.499E-06	9.450E-06	1.011E-05	1.076E-05	1.142E-05	1.207E-05	1.274E-05	1.340E-05	1.471E-05	5.338E-07
ba132	3.510E-06	3.886E-06	4.440E-06	5.040E-06	5.680E-06	6.360E-06	7.080E-06	7.841E-06	8.643E-06	1.038E-05	1.064E-05
in133	0.000E+00	1.402E-11	1.413E-11	1.421E-11	1.428E-11	1.436E-11	1.445E-11	1.453E-11	1.462E-11	1.477E-11	0.000E+00
sn133	0.000E+00	1.294E-07	1.294E-07	1.291E-07	1.288E-07	1.287E-07	1.286E-07	1.286E-07	1.286E-07	1.285E-07	0.000E+00
sb133	0.000E+00	1.465E-04	1.460E-04	1.452E-04	1.444E-04	1.436E-04	1.430E-04	1.423E-04	1.418E-04	1.403E-04	0.000E+00
te133	0.000E+00	1.240E-03	1.240E-03	1.237E-03	1.233E-03	1.230E-03	1.227E-03	1.224E-03	1.221E-03	1.212E-03	0.000E+00
te133m	0.000E+00	4.538E-03	4.540E-03	4.527E-03	4.515E-03	4.502E-03	4.491E-03	4.479E-03	4.468E-03	4.433E-03	0.000E+00
i133	3.943E-22	2.258E-01	2.264E-01	2.262E-01	2.260E-01	2.258E-01	2.256E-01	2.253E-01	2.251E-01	2.241E-01	3.929E-12
i133m	0.000E+00	1.969E-06	1.988E-06	1.999E-06	2.010E-06	2.020E-06	2.029E-06	2.037E-06	2.045E-06	2.053E-06	0.000E+00
xe133	3.650E-04	1.287E+00	1.317E+00	1.317E+00	1.316E+00	1.315E+00	1.314E+00	1.313E+00	1.312E+00	1.357E+00	2.770E-02
xe133m	1.177E-10	1.764E-02	1.772E-02	1.775E-02	1.777E-02	1.778E-02	1.780E-02	1.781E-02	1.782E-02	1.779E-02	1.574E-06
cs133	7.414E+01	7.769E+01	8.272E+01	8.774E+01	9.272E+01	9.766E+01	1.026E+02	1.074E+02	1.122E+02	1.218E+02	1.233E+02
ba133	4.302E-09	4.779E-09	5.272E-09	5.779E-09	6.298E-09	6.828E-09	7.368E-09	7.917E-09	8.476E-09	9.616E-09	9.562E-09
in134	0.000E+00	1.692E-12	1.706E-12	1.716E-12	1.726E-12	1.737E-12	1.748E-12	1.759E-12	1.771E-12	1.790E-12	0.000E+00
sn134	0.000E+00	1.506E-08	1.515E-08	1.519E-08	1.524E-08	1.530E-08	1.537E-08	1.544E-08	1.551E-08	1.564E-08	0.000E+00
sb134	0.000E+00	1.549E-07	1.540E-07	1.527E-07	1.515E-07	1.504E-07	1.493E-07	1.484E-07	1.475E-07	1.455E-07	0.000E+00
sb134m	0.000E+00	1.317E-06	1.316E-06	1.312E-06	1.309E-06	1.307E-06	1.306E-06	1.305E-06	1.305E-06	1.302E-06	0.000E+00
te134	0.000E+00	6.969E-03	6.950E-03	6.911E-03	6.873E-03	6.837E-03	6.802E-03	6.769E-03	6.737E-03	6.659E-03	0.000E+00
i134	0.000E+00	1.073E-02	1.074E-02	1.072E-02	1.070E-02	1.068E-02	1.066E-02	1.064E-02	1.061E-02	1.055E-02	0.000E+00
i134m	0.000E+00	5.847E-05	5.953E-05	6.034E-05	6.110E-05	6.180E-05	6.246E-05	6.308E-05	6.365E-05	6.452E-05	0.000E+00
xe134	8.998E+01	9.639E+01	1.028E+02	1.092E+02	1.157E+02	1.221E+02	1.285E+02	1.348E+02	1.412E+02	1.539E+02	1.539E+02
xe134m	0.000E+00	1.587E-08	1.618E-08	1.642E-08	1.665E-08	1.685E-08	1.704E-08	1.721E-08	1.737E-08	1.761E-08	0.000E+00
cs134	2.474E+00	2.859E+00	3.264E+00	3.689E+00	4.133E+00	4.597E+00	5.079E+00	5.579E+00	6.096E+00	7.189E+00	6.987E+00
cs134m	0.000E+00	2.183E-04	2.347E-04	2.506E-04	2.666E-04	2.828E-04	2.990E-04	3.154E-04	3.318E-04	3.641E-04	0.000E+00
ba134	8.261E-01	9.007E-01	9.863E-01	1.084E+00	1.193E+00	1.315E+00	1.451E+00	1.600E+00	1.763E+00	2.135E+00	2.337E+00
sn135	0.000E+00	5.167E-10	5.203E-10	5.225E-10	5.250E-10	5.276E-10	5.304E-10	5.333E-10	5.365E-10	5.415E-10	0.000E+00
sb135	0.000E+00	1.357E-07	1.358E-07	1.354E-07	1.352E-07	1.351E-07	1.350E-07	1.350E-07	1.350E-07	1.349E-07	0.000E+00
te135	0.000E+00	2.769E-05	2.771E-05	2.764E-05	2.758E-05	2.753E-05	2.749E-05	2.745E-05	2.742E-05	2.730E-05	0.000E+00
i135	0.000E+00	6.851E-02	6.869E-02	6.865E-02	6.861E-02	6.858E-02	6.854E-02	6.851E-02	6.848E-02	6.823E-02	0.000E+00
xe135	0.000E+00	3.022E-02	3.015E-02	3.004E-02	2.993E-02	2.981E-02	2.969E-02	2.957E-02	2.945E-02	2.918E-02	0.000E+00
xe135m	0.000E+00	5.597E-04	5.640E-04	5.662E-04	5.683E-04	5.703E-04	5.721E-04	5.738E-04	5.754E-04	5.767E-04	0.000E+00
cs135	3.576E+01	3.740E+01	3.906E+01	4.073E+01	4.239E+01	4.404E+01	4.569E+01	4.734E+01	4.898E+01	5.226E+01	5.235E+01

case 2 fission products page 45
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
cs135m	0.000E+00	2.430E-05	2.800E-05	3.185E-05	3.591E-05	4.020E-05	4.471E-05	4.943E-05	5.437E-05	6.479E-05	0.000E+00
ba135	1.483E-03	1.978E-03	2.528E-03	3.133E-03	3.803E-03	4.543E-03	5.364E-03	6.274E-03	7.283E-03	9.636E-03	9.649E-03
ba135m	2.641E-21	4.682E-06	5.176E-06	5.722E-06	6.340E-06	7.034E-06	7.809E-06	8.669E-06	9.617E-06	1.177E-05	1.843E-13
sn136	0.000E+00	7.770E-11	7.832E-11	7.872E-11	7.913E-11	7.957E-11	8.003E-11	8.051E-11	8.100E-11	8.178E-11	0.000E+00
sb136	0.000E+00	9.962E-09	9.986E-09	9.986E-09	9.992E-09	1.000E-08	1.002E-08	1.005E-08	1.008E-08	1.012E-08	0.000E+00
te136	0.000E+00	1.173E-05	1.168E-05	1.161E-05	1.154E-05	1.148E-05	1.143E-05	1.139E-05	1.134E-05	1.124E-05	0.000E+00
i136	0.000E+00	1.142E-04	1.139E-04	1.134E-04	1.129E-04	1.124E-04	1.120E-04	1.116E-04	1.112E-04	1.102E-04	0.000E+00
i136m	0.000E+00	3.093E-05	3.097E-05	3.091E-05	3.085E-05	3.079E-05	3.074E-05	3.069E-05	3.063E-05	3.045E-05	0.000E+00
xe136	1.184E+02	1.279E+02	1.374E+02	1.470E+02	1.566E+02	1.662E+02	1.758E+02	1.854E+02	1.950E+02	2.143E+02	2.143E+02
cs136	1.104E-03	3.913E-02	4.858E-02	5.222E-02	5.469E-02	5.693E-02	5.912E-02	6.129E-02	6.347E-02	6.770E-02	1.323E-02
ba136	5.933E-01	6.334E-01	7.057E-01	7.875E-01	8.739E-01	9.641E-01	1.058E+00	1.155E+00	1.256E+00	1.468E+00	1.523E+00
ba136m	3.354E-11	1.189E-09	1.476E-09	1.586E-09	1.661E-09	1.729E-09	1.796E-09	1.862E-09	1.928E-09	2.057E-09	4.018E-10
sb137	0.000E+00	7.304E-09	7.150E-09	6.977E-09	6.809E-09	6.645E-09	6.486E-09	6.331E-09	6.180E-09	5.872E-09	0.000E+00
te137	0.000E+00	7.791E-07	7.778E-07	7.745E-07	7.717E-07	7.694E-07	7.675E-07	7.660E-07	7.648E-07	7.612E-07	0.000E+00
i137	0.000E+00	3.552E-05	3.553E-05	3.543E-05	3.534E-05	3.526E-05	3.518E-05	3.512E-05	3.506E-05	3.487E-05	0.000E+00
xe137	0.000E+00	6.452E-04	6.467E-04	6.461E-04	6.455E-04	6.449E-04	6.444E-04	6.439E-04	6.434E-04	6.407E-04	0.000E+00
cs137	7.307E+01	7.837E+01	8.367E+01	8.896E+01	9.425E+01	9.952E+01	1.048E+02	1.100E+02	1.153E+02	1.257E+02	1.255E+02
ba137	2.172E+00	2.320E+00	2.479E+00	2.647E+00	2.826E+00	3.016E+00	3.215E+00	3.425E+00	3.644E+00	4.114E+00	4.360E+00
ba137m	1.116E-05	1.211E-05	1.292E-05	1.373E-05	1.454E-05	1.535E-05	1.615E-05	1.696E-05	1.776E-05	1.936E-05	1.916E-05
sb138	0.000E+00	2.817E-11	2.838E-11	2.853E-11	2.868E-11	2.885E-11	2.903E-11	2.921E-11	2.941E-11	2.974E-11	0.000E+00
te138	0.000E+00	7.257E-08	7.275E-08	7.276E-08	7.281E-08	7.292E-08	7.307E-08	7.326E-08	7.349E-08	7.382E-08	0.000E+00
i138	0.000E+00	4.767E-06	4.770E-06	4.758E-06	4.749E-06	4.741E-06	4.734E-06	4.728E-06	4.724E-06	4.705E-06	0.000E+00
xe138	0.000E+00	2.300E-03	2.298E-03	2.289E-03	2.281E-03	2.273E-03	2.265E-03	2.257E-03	2.250E-03	2.230E-03	0.000E+00
cs138	0.000E+00	5.653E-03	5.656E-03	5.640E-03	5.625E-03	5.611E-03	5.597E-03	5.583E-03	5.570E-03	5.529E-03	0.000E+00
cs138m	0.000E+00	1.951E-05	1.982E-05	2.005E-05	2.026E-05	2.046E-05	2.064E-05	2.082E-05	2.098E-05	2.121E-05	0.000E+00
ba138	7.717E+01	8.262E+01	8.808E+01	9.352E+01	9.895E+01	1.044E+02	1.098E+02	1.152E+02	1.205E+02	1.313E+02	1.313E+02
la138	4.442E-04	4.783E-04	5.126E-04	5.471E-04	5.817E-04	6.163E-04	6.511E-04	6.858E-04	7.207E-04	7.904E-04	7.904E-04
sb139	0.000E+00	2.690E-12	2.712E-12	2.727E-12	2.742E-12	2.758E-12	2.774E-12	2.791E-12	2.809E-12	2.837E-12	0.000E+00
te139	0.000E+00	4.696E-09	4.717E-09	4.725E-09	4.736E-09	4.750E-09	4.765E-09	4.782E-09	4.801E-09	4.829E-09	0.000E+00
i139	0.000E+00	8.843E-07	8.774E-07	8.683E-07	8.596E-07	8.514E-07	8.435E-07	8.361E-07	8.290E-07	8.136E-07	0.000E+00
xe139	0.000E+00	8.268E-05	8.235E-05	8.178E-05	8.124E-05	8.072E-05	8.022E-05	7.975E-05	7.930E-05	7.822E-05	0.000E+00

cs139	0.000E+00	1.538E-03	1.537E-03	1.532E-03	1.527E-03	1.522E-03	1.518E-03	1.513E-03	1.509E-03	1.496E-03	0.000E+00
ba139	0.000E+00	1.435E-02	1.436E-02	1.432E-02	1.428E-02	1.424E-02	1.420E-02	1.416E-02	1.412E-02	1.401E-02	0.000E+00
la139	7.369E+01	7.884E+01	8.401E+01	8.915E+01	9.428E+01	9.940E+01	1.045E+02	1.096E+02	1.146E+02	1.247E+02	1.247E+02
ce139	6.327E-07	8.316E-07	1.014E-06	1.185E-06	1.346E-06	1.497E-06	1.641E-06	1.778E-06	1.909E-06	2.155E-06	1.843E-06
pr139	0.000E+00	6.566E-11	6.936E-11	7.362E-11	7.831E-11	8.325E-11	8.834E-11	9.354E-11	9.881E-11	1.093E-10	0.000E+00
te140	0.000E+00	1.090E-09	1.093E-09	1.092E-09	1.092E-09	1.092E-09	1.092E-09	1.093E-09	1.095E-09	1.095E-09	0.000E+00
i140	0.000E+00	8.096E-08	8.065E-08	8.017E-08	7.975E-08	7.940E-08	7.911E-08	7.887E-08	7.869E-08	7.822E-08	0.000E+00
xe140	0.000E+00	2.013E-05	2.000E-05	1.982E-05	1.964E-05	1.948E-05	1.932E-05	1.917E-05	1.903E-05	1.872E-05	0.000E+00
cs140	0.000E+00	1.596E-04	1.594E-04	1.588E-04	1.582E-04	1.576E-04	1.570E-04	1.565E-04	1.559E-04	1.545E-04	0.000E+00
ba140	6.699E-02	2.551E+00	3.021E+00	3.104E+00	3.113E+00	3.108E+00	3.101E+00	3.093E+00	3.086E+00	3.066E+00	5.687E-01
la140	1.015E-02	3.401E-01	4.117E-01	4.246E-01	4.263E-01	4.260E-01	4.253E-01	4.246E-01	4.239E-01	4.123E-01	8.617E-02
ce140	7.611E+01	7.880E+01	8.376E+01	8.917E+01	9.464E+01	1.001E+02	1.056E+02	1.111E+02	1.165E+02	1.273E+02	1.301E+02
pr140	0.000E+00	2.948E-09	3.114E-09	3.305E-09	3.516E-09	3.737E-09	3.966E-09	4.199E-09	4.436E-09	4.905E-09	0.000E+00
te141	0.000E+00	3.784E-12	3.816E-12	3.836E-12	3.857E-12	3.880E-12	3.903E-12	3.926E-12	3.951E-12	3.990E-12	0.000E+00
i141	0.000E+00	5.445E-09	5.465E-09	5.471E-09	5.479E-09	5.489E-09	5.502E-09	5.517E-09	5.533E-09	5.555E-09	0.000E+00
xe141	0.000E+00	9.752E-07	9.699E-07	9.622E-07	9.549E-07	9.482E-07	9.420E-07	9.362E-07	9.309E-07	9.186E-07	0.000E+00
cs141	0.000E+00	4.826E-05	4.819E-05	4.797E-05	4.776E-05	4.755E-05	4.736E-05	4.717E-05	4.699E-05	4.651E-05	0.000E+00
ba141	0.000E+00	2.859E-03	2.859E-03	2.851E-03	2.842E-03	2.833E-03	2.825E-03	2.817E-03	2.809E-03	2.785E-03	0.000E+00
la141	0.000E+00	3.710E-02	3.712E-02	3.701E-02	3.690E-02	3.680E-02	3.669E-02	3.659E-02	3.649E-02	3.619E-02	0.000E+00

case 2 fission products page 46
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
ce141	1.119E+00	4.112E+00	5.690E+00	6.500E+00	6.911E+00	7.115E+00	7.211E+00	7.252E+00	7.263E+00	7.247E+00	3.762E+00
pr141	6.721E+01	6.897E+01	7.217E+01	7.613E+01	8.047E+01	8.499E+01	8.961E+01	9.426E+01	9.892E+01	1.082E+02	1.118E+02
nd141	0.000E+00	1.100E-10	1.165E-10	1.234E-10	1.304E-10	1.373E-10	1.442E-10	1.510E-10	1.578E-10	1.706E-10	0.000E+00
te142	0.000E+00	3.209E-12	3.239E-12	3.261E-12	3.287E-12	3.315E-12	3.345E-12	3.377E-12	3.411E-12	3.473E-12	0.000E+00
i142	0.000E+00	6.344E-10	6.364E-10	6.377E-10	6.401E-10	6.436E-10	6.479E-10	6.530E-10	6.589E-10	6.706E-10	0.000E+00
xe142	0.000E+00	2.678E-07	2.669E-07	2.652E-07	2.637E-07	2.624E-07	2.612E-07	2.601E-07	2.591E-07	2.567E-07	0.000E+00
cs142	0.000E+00	1.934E-06	1.927E-06	1.915E-06	1.903E-06	1.893E-06	1.882E-06	1.873E-06	1.864E-06	1.842E-06	0.000E+00
ba142	0.000E+00	1.604E-03	1.602E-03	1.595E-03	1.588E-03	1.582E-03	1.575E-03	1.569E-03	1.563E-03	1.547E-03	0.000E+00
la142	0.000E+00	1.423E-02	1.422E-02	1.417E-02	1.412E-02	1.406E-02	1.401E-02	1.396E-02	1.392E-02	1.378E-02	0.000E+00
ce142	6.873E+01	7.352E+01	7.833E+01	8.312E+01	8.790E+01	9.265E+01	9.739E+01	1.021E+02	1.068E+02	1.162E+02	1.162E+02
pr142	0.000E+00	2.255E-03	2.383E-03	2.529E-03	2.690E-03	2.860E-03	3.035E-03	3.213E-03	3.394E-03	3.753E-03	7.250E-15
pr142m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

nd142	3.635E-01	4.203E-01	4.820E-01	5.473E-01	6.166E-01	6.902E-01	7.685E-01	8.513E-01	9.389E-01	1.129E+00	1.132E+00
i143	0.000E+00	1.482E-11	1.492E-11	1.498E-11	1.505E-11	1.512E-11	1.520E-11	1.528E-11	1.536E-11	1.549E-11	0.000E+00
xe143	0.000E+00	3.086E-08	3.082E-08	3.071E-08	3.062E-08	3.056E-08	3.051E-08	3.048E-08	3.046E-08	3.039E-08	0.000E+00
cs143	0.000E+00	1.060E-06	1.053E-06	1.043E-06	1.033E-06	1.025E-06	1.016E-06	1.008E-06	1.001E-06	9.839E-07	0.000E+00
ba143	0.000E+00	3.200E-05	3.189E-05	3.169E-05	3.149E-05	3.130E-05	3.112E-05	3.094E-05	3.077E-05	3.036E-05	0.000E+00
la143	0.000E+00	2.144E-03	2.139E-03	2.127E-03	2.116E-03	2.105E-03	2.094E-03	2.084E-03	2.073E-03	2.048E-03	0.000E+00
ce143	1.951E-14	3.021E-01	3.015E-01	2.999E-01	2.983E-01	2.968E-01	2.953E-01	2.938E-01	2.924E-01	2.889E-01	4.753E-08
pr143	8.411E-02	2.231E+00	2.742E+00	2.836E+00	2.844E+00	2.834E+00	2.821E+00	2.807E+00	2.793E+00	2.784E+00	6.375E-01
nd143	6.125E+01	6.249E+01	6.560E+01	6.904E+01	7.248E+01	7.585E+01	7.914E+01	8.234E+01	8.545E+01	9.142E+01	9.386E+01
i144	0.000E+00	2.155E-13	2.174E-13	2.186E-13	2.199E-13	2.212E-13	2.226E-13	2.240E-13	2.254E-13	2.277E-13	0.000E+00
xe144	0.000E+00	7.295E-09	7.318E-09	7.322E-09	7.330E-09	7.342E-09	7.357E-09	7.375E-09	7.396E-09	7.423E-09	0.000E+00
cs144	0.000E+00	1.716E-07	1.710E-07	1.700E-07	1.691E-07	1.683E-07	1.675E-07	1.669E-07	1.663E-07	1.649E-07	0.000E+00
ba144	0.000E+00	2.013E-05	2.000E-05	1.981E-05	1.963E-05	1.946E-05	1.930E-05	1.914E-05	1.899E-05	1.865E-05	0.000E+00
la144	0.000E+00	9.277E-05	9.244E-05	9.183E-05	9.123E-05	9.066E-05	9.010E-05	8.956E-05	8.904E-05	8.778E-05	0.000E+00
ce144	2.338E+01	2.582E+01	2.808E+01	3.015E+01	3.204E+01	3.378E+01	3.536E+01	3.681E+01	3.813E+01	4.044E+01	3.751E+01
pr144	9.848E-04	1.097E-03	1.194E-03	1.282E-03	1.362E-03	1.435E-03	1.501E-03	1.563E-03	1.618E-03	1.716E-03	1.580E-03
pr144m	5.743E-06	6.379E-06	6.934E-06	7.443E-06	7.909E-06	8.335E-06	8.725E-06	9.081E-06	9.407E-06	9.974E-06	9.214E-06
nd144	4.611E+01	4.895E+01	5.202E+01	5.531E+01	5.881E+01	6.252E+01	6.641E+01	7.047E+01	7.471E+01	8.363E+01	8.657E+01
i145	0.000E+00	8.995E-15	9.074E-15	9.127E-15	9.180E-15	9.235E-15	9.292E-15	9.349E-15	9.407E-15	9.499E-15	0.000E+00
xe145	0.000E+00	5.709E-10	5.764E-10	5.804E-10	5.846E-10	5.889E-10	5.934E-10	5.980E-10	6.028E-10	6.108E-10	0.000E+00
cs145	0.000E+00	2.334E-08	2.338E-08	2.335E-08	2.334E-08	2.335E-08	2.336E-08	2.339E-08	2.343E-08	2.346E-08	0.000E+00
ba145	0.000E+00	3.351E-06	3.333E-06	3.306E-06	3.280E-06	3.256E-06	3.233E-06	3.212E-06	3.192E-06	3.147E-06	0.000E+00
la145	0.000E+00	3.886E-05	3.875E-05	3.853E-05	3.831E-05	3.810E-05	3.791E-05	3.771E-05	3.753E-05	3.707E-05	0.000E+00
ce145	0.000E+00	3.145E-04	3.140E-04	3.125E-04	3.111E-04	3.097E-04	3.083E-04	3.070E-04	3.057E-04	3.024E-04	0.000E+00
pr145	0.000E+00	3.754E-02	3.748E-02	3.730E-02	3.713E-02	3.697E-02	3.681E-02	3.665E-02	3.650E-02	3.610E-02	0.000E+00
nd145	4.473E+01	4.767E+01	5.061E+01	5.353E+01	5.641E+01	5.926E+01	6.208E+01	6.487E+01	6.762E+01	7.305E+01	7.309E+01
pm145	5.573E-06	6.223E-06	7.026E-06	7.984E-06	9.098E-06	1.037E-05	1.180E-05	1.338E-05	1.513E-05	1.912E-05	2.107E-05
sm145	7.758E-06	1.017E-05	1.259E-05	1.503E-05	1.748E-05	1.996E-05	2.247E-05	2.502E-05	2.761E-05	3.294E-05	3.093E-05
xe146	0.000E+00	3.272E-11	3.299E-11	3.316E-11	3.334E-11	3.353E-11	3.373E-11	3.393E-11	3.413E-11	3.446E-11	0.000E+00
cs146	0.000E+00	3.178E-09	3.161E-09	3.136E-09	3.113E-09	3.091E-09	3.072E-09	3.053E-09	3.037E-09	2.999E-09	0.000E+00
ba146	0.000E+00	9.107E-07	9.027E-07	8.925E-07	8.828E-07	8.738E-07	8.652E-07	8.572E-07	8.496E-07	8.332E-07	0.000E+00
la146	0.000E+00	6.499E-06	6.469E-06	6.421E-06	6.375E-06	6.332E-06	6.291E-06	6.251E-06	6.214E-06	6.127E-06	0.000E+00
ce146	0.000E+00	1.118E-03	1.117E-03	1.113E-03	1.110E-03	1.106E-03	1.102E-03	1.099E-03	1.096E-03	1.087E-03	0.000E+00
pr146	0.000E+00	2.010E-03	2.010E-03	2.003E-03	1.997E-03	1.990E-03	1.984E-03	1.978E-03	1.973E-03	1.956E-03	0.000E+00
nd146	3.832E+01	4.113E+01	4.397E+01	4.681E+01	4.967E+01	5.253E+01	5.541E+01	5.829E+01	6.119E+01	6.702E+01	6.703E+01
pm146	1.664E-04	1.885E-04	2.115E-04	2.357E-04	2.611E-04	2.877E-04	3.154E-04	3.440E-04	3.736E-04	4.354E-04	4.308E-04
sm146	1.500E-04	1.838E-04	2.196E-04	2.572E-04	2.968E-04	3.386E-04	3.825E-04	4.288E-04	4.774E-04	5.821E-04	5.837E-04
xe147	0.000E+00	3.647E-14	3.679E-14	3.701E-14	3.723E-14	3.745E-14	3.768E-14	3.791E-14	3.815E-14	3.852E-14	0.000E+00

case 2 fission products page 47
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
cs147	0.000E+00	1.001E-10	1.009E-10	1.014E-10	1.019E-10	1.025E-10	1.031E-10	1.037E-10	1.043E-10	1.054E-10	0.000E+00
ba147	0.000E+00	4.417E-08	4.420E-08	4.412E-08	4.408E-08	4.406E-08	4.407E-08	4.410E-08	4.415E-08	4.418E-08	0.000E+00
la147	0.000E+00	1.916E-06	1.912E-06	1.904E-06	1.896E-06	1.889E-06	1.883E-06	1.878E-06	1.873E-06	1.860E-06	0.000E+00
ce147	0.000E+00	5.846E-05	5.848E-05	5.833E-05	5.817E-05	5.803E-05	5.789E-05	5.776E-05	5.764E-05	5.725E-05	0.000E+00
pr147	0.000E+00	8.876E-04	8.885E-04	8.866E-04	8.848E-04	8.831E-04	8.814E-04	8.798E-04	8.783E-04	8.729E-04	0.000E+00
nd147	1.321E-02	8.872E-01	1.013E+00	1.029E+00	1.030E+00	1.029E+00	1.027E+00	1.025E+00	1.024E+00	1.019E+00	1.441E-01
pm147	1.666E+01	1.682E+01	1.768E+01	1.859E+01	1.946E+01	2.027E+01	2.102E+01	2.172E+01	2.238E+01	2.355E+01	2.389E+01
sm147	6.018E+00	6.291E+00	6.573E+00	6.870E+00	7.180E+00	7.504E+00	7.839E+00	8.184E+00	8.537E+00	9.264E+00	9.799E+00
cs148	0.000E+00	6.913E-12	6.970E-12	7.008E-12	7.048E-12	7.090E-12	7.134E-12	7.180E-12	7.227E-12	7.305E-12	0.000E+00
ba148	0.000E+00	7.359E-09	7.393E-09	7.408E-09	7.427E-09	7.450E-09	7.476E-09	7.506E-09	7.538E-09	7.589E-09	0.000E+00
la148	0.000E+00	1.421E-07	1.421E-07	1.417E-07	1.413E-07	1.411E-07	1.409E-07	1.408E-07	1.408E-07	1.404E-07	0.000E+00
ce148	0.000E+00	4.106E-05	4.107E-05	4.096E-05	4.087E-05	4.078E-05	4.069E-05	4.062E-05	4.055E-05	4.032E-05	0.000E+00
pr148	0.000E+00	1.141E-04	1.143E-04	1.142E-04	1.141E-04	1.141E-04	1.140E-04	1.139E-04	1.139E-04	1.135E-04	0.000E+00
nd148	2.165E+01	2.320E+01	2.476E+01	2.631E+01	2.786E+01	2.941E+01	3.096E+01	3.251E+01	3.406E+01	3.715E+01	3.715E+01
pm148	2.672E-04	6.809E-02	7.253E-02	7.671E-02	8.078E-02	8.467E-02	8.837E-02	9.188E-02	9.522E-02	1.028E-01	2.479E-03
pm148m	3.583E-02	1.019E-01	1.110E-01	1.172E-01	1.231E-01	1.285E-01	1.337E-01	1.385E-01	1.430E-01	1.511E-01	8.980E-02
sm148	3.712E+00	4.058E+00	4.487E+00	4.940E+00	5.418E+00	5.920E+00	6.446E+00	6.994E+00	7.564E+00	8.773E+00	8.935E+00
cs149	0.000E+00	6.743E-14	6.804E-14	6.845E-14	6.887E-14	6.930E-14	6.974E-14	7.019E-14	7.065E-14	7.139E-14	0.000E+00
ba149	0.000E+00	9.223E-10	9.288E-10	9.330E-10	9.375E-10	9.425E-10	9.478E-10	9.534E-10	9.593E-10	9.691E-10	0.000E+00
la149	0.000E+00	9.096E-08	9.113E-08	9.107E-08	9.109E-08	9.117E-08	9.131E-08	9.150E-08	9.174E-08	9.207E-08	0.000E+00
ce149	0.000E+00	1.961E-06	1.962E-06	1.957E-06	1.953E-06	1.950E-06	1.948E-06	1.946E-06	1.945E-06	1.939E-06	0.000E+00
pr149	0.000E+00	7.690E-05	7.726E-05	7.737E-05	7.748E-05	7.760E-05	7.772E-05	7.785E-05	7.798E-05	7.803E-05	0.000E+00
nd149	0.000E+00	3.696E-03	3.717E-03	3.727E-03	3.738E-03	3.748E-03	3.758E-03	3.768E-03	3.779E-03	3.790E-03	0.000E+00
pm149	7.037E-10	1.421E-01	1.459E-01	1.482E-01	1.505E-01	1.527E-01	1.548E-01	1.569E-01	1.589E-01	1.614E-01	9.985E-06
sm149	3.930E-01	2.956E-01	3.051E-01	3.086E-01	3.116E-01	3.144E-01	3.170E-01	3.194E-01	3.216E-01	3.507E-01	5.160E-01
eu149	5.214E-12	8.371E-12	1.029E-11	1.144E-11	1.212E-11	1.252E-11	1.277E-11	1.295E-11	1.308E-11	1.334E-11	1.059E-11
cs150	0.000E+00	4.407E-15	4.447E-15	4.474E-15	4.502E-15	4.531E-15	4.561E-15	4.591E-15	4.622E-15	4.672E-15	0.000E+00
ba150	0.000E+00	1.145E-10	1.155E-10	1.162E-10	1.170E-10	1.178E-10	1.186E-10	1.194E-10	1.203E-10	1.217E-10	0.000E+00
la150	0.000E+00	3.692E-09	3.716E-09	3.732E-09	3.751E-09	3.773E-09	3.797E-09	3.823E-09	3.851E-09	3.901E-09	0.000E+00
ce150	0.000E+00	6.529E-07	6.555E-07	6.564E-07	6.576E-07	6.593E-07	6.612E-07	6.635E-07	6.660E-07	6.697E-07	0.000E+00
pr150	0.000E+00	2.131E-06	2.147E-06	2.156E-06	2.166E-06	2.176E-06	2.186E-06	2.196E-06	2.207E-06	2.222E-06	0.000E+00

nd150	9.845E+00	1.060E+01	1.135E+01	1.212E+01	1.288E+01	1.365E+01	1.443E+01	1.520E+01	1.599E+01	1.756E+01	1.756E+01	
pm150	0.000E+00	5.822E-05	6.036E-05	6.173E-05	6.309E-05	6.443E-05	6.576E-05	6.708E-05	6.838E-05	7.022E-05	0.000E+00	
sm150	1.558E+01	1.674E+01	1.800E+01	1.927E+01	2.056E+01	2.187E+01	2.317E+01	2.449E+01	2.582E+01	2.851E+01	2.851E+01	
eu150	2.769E-08	3.225E-08	3.593E-08	3.903E-08	4.176E-08	4.425E-08	4.661E-08	4.889E-08	5.113E-08	5.560E-08	5.551E-08	
ba151	0.000E+00	3.981E-13	4.018E-13	4.043E-13	4.070E-13	4.096E-13	4.124E-13	4.153E-13	4.182E-13	4.229E-13	0.000E+00	
la151	0.000E+00	7.255E-10	7.321E-10	7.370E-10	7.424E-10	7.483E-10	7.545E-10	7.611E-10	7.681E-10	7.805E-10	0.000E+00	
ce151	0.000E+00	4.599E-08	4.631E-08	4.653E-08	4.678E-08	4.706E-08	4.737E-08	4.771E-08	4.808E-08	4.872E-08	0.000E+00	
pr151	0.000E+00	3.338E-06	3.369E-06	3.391E-06	3.413E-06	3.436E-06	3.459E-06	3.484E-06	3.509E-06	3.550E-06	0.000E+00	
nd151	0.000E+00	2.175E-04	2.202E-04	2.222E-04	2.242E-04	2.262E-04	2.281E-04	2.300E-04	2.319E-04	2.349E-04	0.000E+00	
pm151	1.548E-17	3.008E-02	3.046E-02	3.074E-02	3.102E-02	3.130E-02	3.157E-02	3.183E-02	3.210E-02	3.252E-02	4.228E-10	
sm151	1.705E+00	1.695E+00	1.720E+00	1.748E+00	1.778E+00	1.810E+00	1.843E+00	1.877E+00	1.911E+00	1.981E+00	2.013E+00	
eu151	6.708E-03	5.265E-03	4.320E-03	3.712E-03	3.325E-03	3.085E-03	2.940E-03	2.858E-03	2.816E-03	2.803E-03	4.118E-03	
ba152	0.000E+00	2.242E-15	2.312E-15	2.387E-15	2.473E-15	2.568E-15	2.672E-15	2.784E-15	2.902E-15	3.145E-15	0.000E+00	
la152	0.000E+00	3.607E-12	3.675E-12	3.746E-12	3.830E-12	3.924E-12	4.029E-12	4.142E-12	4.263E-12	4.510E-12	0.000E+00	
ce152	0.000E+00	3.860E-08	3.898E-08	3.931E-08	3.972E-08	4.019E-08	4.073E-08	4.131E-08	4.194E-08	4.319E-08	0.000E+00	
pr152	0.000E+00	3.802E-07	3.847E-07	3.882E-07	3.920E-07	3.960E-07	4.002E-07	4.045E-07	4.090E-07	4.171E-07	0.000E+00	
nd152	0.000E+00	1.323E-04	1.342E-04	1.357E-04	1.371E-04	1.386E-04	1.400E-04	1.414E-04	1.428E-04	1.452E-04	0.000E+00	
pm152	0.000E+00	4.932E-05	5.005E-05	5.061E-05	5.117E-05	5.172E-05	5.226E-05	5.280E-05	5.333E-05	5.421E-05	0.000E+00	
pm152m	0.000E+00	3.189E-06	3.266E-06	3.327E-06	3.385E-06	3.440E-06	3.492E-06	3.542E-06	3.588E-06	3.664E-06	0.000E+00	

case 2 fission products page 48
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
sm152	8.299E+00	8.971E+00	9.629E+00	1.027E+01	1.091E+01	1.153E+01	1.215E+01	1.275E+01	1.335E+01	1.452E+01	1.452E+01
eu152	5.939E-03	6.836E-03	7.329E-03	7.566E-03	7.647E-03	7.636E-03	7.577E-03	7.493E-03	7.403E-03	7.237E-03	7.205E-03
eu152m	0.000E+00	1.474E-05	1.222E-05	1.057E-05	9.538E-06	8.912E-06	8.555E-06	8.376E-06	8.313E-06	8.354E-06	0.000E+00
gd152	3.845E-03	4.460E-03	4.961E-03	5.376E-03	5.736E-03	6.060E-03	6.363E-03	6.653E-03	6.936E-03	7.492E-03	7.507E-03
la153	0.000E+00	2.624E-12	2.651E-12	2.670E-12	2.690E-12	2.710E-12	2.732E-12	2.755E-12	2.778E-12	2.817E-12	0.000E+00
ce153	0.000E+00	2.989E-09	3.021E-09	3.045E-09	3.071E-09	3.100E-09	3.130E-09	3.162E-09	3.195E-09	3.255E-09	0.000E+00
pr153	0.000E+00	1.065E-07	1.077E-07	1.088E-07	1.099E-07	1.111E-07	1.123E-07	1.137E-07	1.150E-07	1.176E-07	0.000E+00
nd153	0.000E+00	7.401E-06	7.508E-06	7.593E-06	7.679E-06	7.765E-06	7.852E-06	7.940E-06	8.028E-06	8.182E-06	0.000E+00
pm153	0.000E+00	4.270E-05	4.339E-05	4.393E-05	4.448E-05	4.502E-05	4.556E-05	4.609E-05	4.662E-05	4.754E-05	0.000E+00
sm153	1.865E-11	5.896E-02	6.240E-02	6.564E-02	6.886E-02	7.208E-02	7.530E-02	7.852E-02	8.173E-02	8.790E-02	1.272E-06
eu153	4.554E+00	4.966E+00	5.453E+00	5.957E+00	6.477E+00	7.013E+00	7.563E+00	8.127E+00	8.703E+00	9.892E+00	9.980E+00
gd153	7.090E-05	9.607E-05	1.236E-04	1.525E-04	1.822E-04	2.122E-04	2.425E-04	2.728E-04	3.031E-04	3.639E-04	3.329E-04

la154	0.000E+00	3.151E-14	3.184E-14	3.208E-14	3.233E-14	3.260E-14	3.287E-14	3.315E-14	3.344E-14	3.394E-14	0.000E+00
ce154	0.000E+00	4.144E-10	4.195E-10	4.235E-10	4.279E-10	4.325E-10	4.373E-10	4.424E-10	4.477E-10	4.573E-10	0.000E+00
pr154	0.000E+00	4.562E-09	4.642E-09	4.713E-09	4.789E-09	4.870E-09	4.956E-09	5.045E-09	5.137E-09	5.313E-09	0.000E+00
nd154	0.000E+00	2.065E-06	2.106E-06	2.142E-06	2.179E-06	2.216E-06	2.253E-06	2.291E-06	2.329E-06	2.398E-06	0.000E+00
pm154	0.000E+00	6.704E-06	6.850E-06	6.975E-06	7.100E-06	7.224E-06	7.349E-06	7.474E-06	7.598E-06	7.821E-06	0.000E+00
pm154m	0.000E+00	2.145E-06	2.205E-06	2.256E-06	2.304E-06	2.350E-06	2.394E-06	2.437E-06	2.477E-06	2.547E-06	0.000E+00
sm154	1.686E+00	1.837E+00	1.993E+00	2.151E+00	2.313E+00	2.477E+00	2.644E+00	2.815E+00	2.988E+00	3.343E+00	3.343E+00
eu154	5.123E-01	5.921E-01	6.764E-01	7.651E-01	8.582E-01	9.557E-01	1.057E+00	1.163E+00	1.273E+00	1.504E+00	1.494E+00
gd154	3.718E-02	4.062E-02	4.458E-02	4.909E-02	5.417E-02	5.986E-02	6.616E-02	7.312E-02	8.074E-02	9.806E-02	1.083E-01
la155	0.000E+00	1.626E-16	1.641E-16	1.651E-16	1.662E-16	1.673E-16	1.684E-16	1.696E-16	1.707E-16	1.726E-16	0.000E+00
ce155	0.000E+00	9.429E-12	9.540E-12	9.627E-12	9.719E-12	9.816E-12	9.917E-12	1.002E-11	1.013E-11	1.032E-11	0.000E+00
pr155	0.000E+00	1.048E-09	1.067E-09	1.084E-09	1.102E-09	1.122E-09	1.142E-09	1.164E-09	1.186E-09	1.228E-09	0.000E+00
nd155	0.000E+00	3.150E-07	3.221E-07	3.285E-07	3.350E-07	3.418E-07	3.487E-07	3.558E-07	3.630E-07	3.765E-07	0.000E+00
pm155	0.000E+00	1.910E-06	1.960E-06	2.003E-06	2.047E-06	2.090E-06	2.133E-06	2.176E-06	2.218E-06	2.296E-06	0.000E+00
sm155	0.000E+00	6.362E-05	6.542E-05	6.700E-05	6.857E-05	7.012E-05	7.166E-05	7.318E-05	7.469E-05	7.744E-05	0.000E+00
eu155	1.943E-01	2.179E-01	2.397E-01	2.611E-01	2.827E-01	3.048E-01	3.277E-01	3.513E-01	3.758E-01	4.271E-01	4.218E-01
gd155m	0.000E+00	2.400E-14	1.898E-14	1.917E-14	2.078E-14	2.286E-14	2.517E-14	2.767E-14	3.035E-14	3.617E-14	0.000E+00
gd155	1.594E-02	5.598E-03	3.127E-03	2.661E-03	2.699E-03	2.865E-03	3.067E-03	3.285E-03	3.512E-03	3.997E-03	9.332E-03
ce156	0.000E+00	8.333E-13	8.434E-13	8.512E-13	8.595E-13	8.682E-13	8.773E-13	8.867E-13	8.963E-13	9.136E-13	0.000E+00
pr156	0.000E+00	4.915E-11	5.020E-11	5.117E-11	5.222E-11	5.334E-11	5.451E-11	5.574E-11	5.701E-11	5.950E-11	0.000E+00
nd156	0.000E+00	1.141E-07	1.173E-07	1.203E-07	1.234E-07	1.266E-07	1.299E-07	1.334E-07	1.369E-07	1.438E-07	0.000E+00
pm156	0.000E+00	2.493E-07	2.573E-07	2.645E-07	2.717E-07	2.790E-07	2.863E-07	2.936E-07	3.009E-07	3.145E-07	0.000E+00
sm156	0.000E+00	9.977E-04	1.031E-03	1.060E-03	1.089E-03	1.117E-03	1.145E-03	1.173E-03	1.200E-03	1.250E-03	0.000E+00
eu156	4.915E-03	1.073E-01	1.417E-01	1.594E-01	1.731E-01	1.863E-01	1.996E-01	2.134E-01	2.277E-01	2.577E-01	6.292E-02
gd156	1.580E+00	1.684E+00	1.865E+00	2.078E+00	2.311E+00	2.563E+00	2.834E+00	3.123E+00	3.431E+00	4.111E+00	4.307E+00
ce157	0.000E+00	1.440E-14	1.457E-14	1.470E-14	1.483E-14	1.497E-14	1.511E-14	1.526E-14	1.541E-14	1.569E-14	0.000E+00
pr157	0.000E+00	7.575E-12	7.723E-12	7.859E-12	8.004E-12	8.159E-12	8.323E-12	8.493E-12	8.670E-12	9.012E-12	0.000E+00
nd157	0.000E+00	3.472E-09	3.575E-09	3.674E-09	3.779E-09	3.891E-09	4.007E-09	4.128E-09	4.253E-09	4.500E-09	0.000E+00
pm157	0.000E+00	4.945E-07	5.122E-07	5.289E-07	5.459E-07	5.634E-07	5.811E-07	5.991E-07	6.172E-07	6.521E-07	0.000E+00
sm157	0.000E+00	8.569E-06	8.881E-06	9.166E-06	9.449E-06	9.731E-06	1.001E-05	1.029E-05	1.057E-05	1.108E-05	0.000E+00
eu157	0.000E+00	1.151E-03	1.237E-03	1.296E-03	1.350E-03	1.402E-03	1.455E-03	1.509E-03	1.563E-03	1.666E-03	2.960E-18
gd157	2.790E-02	6.793E-03	7.233E-03	7.579E-03	7.889E-03	8.192E-03	8.498E-03	8.808E-03	9.123E-03	1.005E-02	1.173E-02
pr158	0.000E+00	1.774E-13	1.806E-13	1.836E-13	1.867E-13	1.901E-13	1.936E-13	1.973E-13	2.011E-13	2.085E-13	0.000E+00
nd158	0.000E+00	6.296E-10	6.473E-10	6.644E-10	6.828E-10	7.025E-10	7.231E-10	7.447E-10	7.670E-10	8.112E-10	0.000E+00
pm158	0.000E+00	7.839E-09	8.144E-09	8.439E-09	8.746E-09	9.065E-09	9.394E-09	9.731E-09	1.007E-08	1.075E-08	0.000E+00
sm158	0.000E+00	2.942E-06	3.057E-06	3.162E-06	3.268E-06	3.375E-06	3.481E-06	3.588E-06	3.695E-06	3.896E-06	0.000E+00
eu158	0.000E+00	2.785E-05	2.893E-05	2.992E-05	3.092E-05	3.191E-05	3.289E-05	3.388E-05	3.486E-05	3.670E-05	0.000E+00
gd158	5.498E-01	6.272E-01	6.889E-01	7.539E-01	8.218E-01	8.926E-01	9.661E-01	1.043E+00	1.122E+00	1.292E+00	1.292E+00

case 2 fission products page 49
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d	
pr159	0.000E+00	7.926E-15	8.054E-15	8.164E-15	8.282E-15	8.408E-15	8.539E-15	8.676E-15	8.817E-15	9.085E-15	0.000E+00
nd159	0.000E+00	1.345E-11	1.381E-11	1.416E-11	1.453E-11	1.493E-11	1.535E-11	1.579E-11	1.625E-11	1.715E-11	0.000E+00
pm159	0.000E+00	1.344E-09	1.401E-09	1.457E-09	1.516E-09	1.578E-09	1.643E-09	1.710E-09	1.779E-09	1.916E-09	0.000E+00
sm159	0.000E+00	5.631E-07	5.869E-07	6.094E-07	6.324E-07	6.557E-07	6.793E-07	7.032E-07	7.272E-07	7.733E-07	0.000E+00
eu159	0.000E+00	5.387E-06	5.611E-06	5.819E-06	6.028E-06	6.238E-06	6.448E-06	6.658E-06	6.868E-06	7.265E-06	0.000E+00
gd159	0.000E+00	3.604E-04	3.768E-04	3.922E-04	4.078E-04	4.235E-04	4.394E-04	4.555E-04	4.716E-04	5.028E-04	4.384E-16
tb159	7.993E-02	8.858E-02	9.793E-02	1.076E-01	1.176E-01	1.280E-01	1.386E-01	1.497E-01	1.610E-01	1.847E-01	1.852E-01
nd160	0.000E+00	1.012E-12	1.034E-12	1.055E-12	1.077E-12	1.100E-12	1.125E-12	1.151E-12	1.178E-12	1.231E-12	0.000E+00
pm160	0.000E+00	3.627E-11	3.776E-11	3.926E-11	4.085E-11	4.253E-11	4.429E-11	4.611E-11	4.799E-11	5.173E-11	0.000E+00
sm160	0.000E+00	7.382E-08	7.702E-08	8.007E-08	8.320E-08	8.640E-08	8.966E-08	9.296E-08	9.629E-08	1.027E-07	0.000E+00
eu160	0.000E+00	8.854E-08	9.228E-08	9.575E-08	9.922E-08	1.027E-07	1.062E-07	1.096E-07	1.131E-07	1.196E-07	0.000E+00
gd160	3.579E-02	3.990E-02	4.417E-02	4.861E-02	5.321E-02	5.796E-02	6.288E-02	6.795E-02	7.318E-02	8.411E-02	8.411E-02
tb160	5.751E-04	1.068E-03	1.499E-03	1.886E-03	2.246E-03	2.590E-03	2.926E-03	3.261E-03	3.597E-03	4.290E-03	3.187E-03
dy160	2.933E-03	3.080E-03	3.355E-03	3.738E-03	4.216E-03	4.779E-03	5.420E-03	6.136E-03	6.924E-03	8.712E-03	9.815E-03
nd161	0.000E+00	1.585E-14	1.615E-14	1.641E-14	1.670E-14	1.700E-14	1.732E-14	1.765E-14	1.799E-14	1.865E-14	0.000E+00
pm161	0.000E+00	4.539E-12	4.710E-12	4.880E-12	5.064E-12	5.258E-12	5.463E-12	5.676E-12	5.897E-12	6.337E-12	0.000E+00
sm161	0.000E+00	9.996E-10	1.045E-09	1.090E-09	1.136E-09	1.184E-09	1.233E-09	1.283E-09	1.335E-09	1.435E-09	0.000E+00
eu161	0.000E+00	3.196E-08	3.337E-08	3.468E-08	3.600E-08	3.732E-08	3.865E-08	3.998E-08	4.130E-08	4.381E-08	0.000E+00
gd161	0.000E+00	2.373E-07	2.476E-07	2.570E-07	2.664E-07	2.757E-07	2.849E-07	2.941E-07	3.031E-07	3.200E-07	0.000E+00
tb161	9.203E-07	6.272E-04	6.881E-04	7.209E-04	7.518E-04	7.823E-04	8.124E-04	8.424E-04	8.722E-04	9.286E-04	4.127E-05
dy161	1.422E-02	1.506E-02	1.651E-02	1.803E-02	1.958E-02	2.117E-02	2.280E-02	2.446E-02	2.615E-02	2.965E-02	3.053E-02
pm162	0.000E+00	1.059E-13	1.089E-13	1.117E-13	1.146E-13	1.178E-13	1.212E-13	1.246E-13	1.282E-13	1.353E-13	0.000E+00
sm162	0.000E+00	1.653E-10	1.719E-10	1.782E-10	1.848E-10	1.916E-10	1.986E-10	2.058E-10	2.132E-10	2.276E-10	0.000E+00
eu162	0.000E+00	3.175E-08	3.311E-08	3.436E-08	3.561E-08	3.686E-08	3.809E-08	3.933E-08	4.055E-08	4.285E-08	0.000E+00
gd162	0.000E+00	2.392E-07	2.492E-07	2.581E-07	2.668E-07	2.753E-07	2.836E-07	2.918E-07	2.997E-07	3.141E-07	0.000E+00
tb162	0.000E+00	2.253E-07	2.347E-07	2.431E-07	2.513E-07	2.593E-07	2.671E-07	2.747E-07	2.821E-07	2.956E-07	0.000E+00
tb162m	0.000E+00	7.449E-08	7.744E-08	7.998E-08	8.237E-08	8.462E-08	8.674E-08	8.875E-08	9.064E-08	9.387E-08	0.000E+00
dy162	8.892E-03	9.977E-03	1.111E-02	1.228E-02	1.350E-02	1.477E-02	1.607E-02	1.742E-02	1.882E-02	2.172E-02	2.172E-02
sm163	0.000E+00	3.121E-12	3.240E-12	3.357E-12	3.480E-12	3.608E-12	3.742E-12	3.879E-12	4.020E-12	4.298E-12	0.000E+00
eu163	0.000E+00	2.891E-10	3.018E-10	3.136E-10	3.255E-10	3.374E-10	3.494E-10	3.613E-10	3.733E-10	3.959E-10	0.000E+00
gd163	0.000E+00	1.562E-08	1.627E-08	1.686E-08	1.743E-08	1.799E-08	1.854E-08	1.907E-08	1.959E-08	2.053E-08	0.000E+00

tb163	0.000E+00	2.281E-07	2.376E-07	2.461E-07	2.544E-07	2.624E-07	2.701E-07	2.777E-07	2.851E-07	2.984E-07	0.000E+00
tb163m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy163	4.556E-03	5.212E-03	5.917E-03	6.672E-03	7.476E-03	8.330E-03	9.234E-03	1.019E-02	1.120E-02	1.337E-02	1.338E-02
sm164	0.000E+00	2.326E-13	2.399E-13	2.470E-13	2.544E-13	2.623E-13	2.705E-13	2.790E-13	2.877E-13	3.048E-13	0.000E+00
eu164	0.000E+00	6.826E-12	7.125E-12	7.406E-12	7.691E-12	7.978E-12	8.268E-12	8.560E-12	8.853E-12	9.413E-12	0.000E+00
gd164	0.000E+00	6.531E-08	6.804E-08	7.051E-08	7.290E-08	7.524E-08	7.752E-08	7.975E-08	8.192E-08	8.588E-08	0.000E+00
tb164	0.000E+00	1.280E-08	1.333E-08	1.380E-08	1.426E-08	1.470E-08	1.513E-08	1.554E-08	1.594E-08	1.666E-08	0.000E+00
dy164	1.200E-03	1.351E-03	1.513E-03	1.685E-03	1.868E-03	2.062E-03	2.268E-03	2.486E-03	2.716E-03	3.215E-03	3.215E-03
sm165	0.000E+00	3.625E-15	3.711E-15	3.792E-15	3.877E-15	3.967E-15	4.061E-15	4.159E-15	4.260E-15	4.456E-15	0.000E+00
eu165	0.000E+00	6.580E-13	6.847E-13	7.102E-13	7.362E-13	7.629E-13	7.900E-13	8.175E-13	8.454E-13	8.991E-13	0.000E+00
gd165	0.000E+00	4.615E-10	4.806E-10	4.979E-10	5.148E-10	5.314E-10	5.477E-10	5.636E-10	5.793E-10	6.080E-10	0.000E+00
tb165	0.000E+00	3.117E-09	3.243E-09	3.356E-09	3.464E-09	3.568E-09	3.669E-09	3.766E-09	3.861E-09	4.029E-09	0.000E+00
dy165	0.000E+00	8.938E-07	9.897E-07	1.089E-06	1.194E-06	1.307E-06	1.426E-06	1.553E-06	1.687E-06	1.975E-06	0.000E+00
dy165m	0.000E+00	6.138E-09	6.791E-09	7.466E-09	8.183E-09	8.947E-09	9.758E-09	1.062E-08	1.153E-08	1.348E-08	0.000E+00
ho165	1.005E-03	1.178E-03	1.368E-03	1.577E-03	1.806E-03	2.054E-03	2.325E-03	2.617E-03	2.934E-03	3.646E-03	3.648E-03
dy166	4.083E-12	1.290E-06	1.344E-06	1.392E-06	1.438E-06	1.481E-06	1.523E-06	1.563E-06	1.602E-06	1.697E-06	3.057E-09
ho166	1.997E-12	1.354E-06	1.533E-06	1.723E-06	1.930E-06	2.155E-06	2.400E-06	2.667E-06	2.956E-06	3.606E-06	1.495E-09
ho166m	2.002E-06	2.365E-06	2.776E-06	3.240E-06	3.761E-06	4.343E-06	4.993E-06	5.716E-06	6.519E-06	8.393E-06	8.392E-06
er166	1.334E-04	1.550E-04	1.822E-04	2.128E-04	2.470E-04	2.852E-04	3.277E-04	3.749E-04	4.271E-04	5.478E-04	5.531E-04

case 2 fission products page 50
power= 4.61mw, burnup= 3369.mwd, flux= 3.52E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	30.6 d	61.2 d	91.8 d	122.4 d	153.0 d	183.6 d	214.2 d	244.8 d	306.0 d	337.0 d
er167	1.557E-06	1.909E-06	2.318E-06	2.789E-06	3.329E-06	3.945E-06	4.644E-06	5.435E-06	6.326E-06	8.449E-06	8.449E-06
er167m	0.000E+00	3.190E-16	3.315E-16	3.422E-16	3.522E-16	3.616E-16	3.704E-16	3.787E-16	3.865E-16	3.997E-16	0.000E+00
er168	7.708E-07	1.002E-06	1.286E-06	1.630E-06	2.044E-06	2.538E-06	3.124E-06	3.815E-06	4.625E-06	6.673E-06	6.673E-06
er169	4.159E-11	5.467E-09	6.250E-09	6.527E-09	6.740E-09	6.937E-09	7.122E-09	7.298E-09	7.465E-09	7.752E-09	7.883E-10
er170	1.257E-07	1.404E-07	1.557E-07	1.715E-07	1.879E-07	2.047E-07	2.221E-07	2.399E-07	2.582E-07	2.960E-07	2.960E-07
er171	0.000E+00	2.848E-10	2.962E-10	3.062E-10	3.157E-10	3.248E-10	3.334E-10	3.417E-10	3.496E-10	3.633E-10	0.000E+00
er172	1.380E-18	1.161E-09	1.209E-09	1.252E-09	1.293E-09	1.333E-09	1.372E-09	1.409E-09	1.446E-09	1.509E-09	4.327E-14
totals	2.007E+03	2.152E+03	2.296E+03	2.441E+03	2.585E+03	2.730E+03	2.874E+03	3.018E+03	3.162E+03	3.449E+03	3.449E+03
flux	3.412E+13	3.444E+13	3.465E+13	3.488E+13	3.510E+13	3.533E+13	3.556E+13	3.580E+13	3.617E+13	0.000E+00	

```
library information...

    cross-section data taken from position number  3 of library on unit 33.

    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
     pass 0 applies start-up fuel densiities
     pass n applies mid time densities of nth library interval
    first library updated was...
    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
     pass 0 applies start-up fuel densiities
     pass n applies mid time densities of nth library interval
    first library updated was...
    ********************************************************************************
    *                                                                              *
    *        prelim lwr origen-s binary working library--id = 1143                 *
    *      made from modified card-image origen-s libraries of scale 4.2           *
    *    data from the light element, actinide, and fission product libraries      *
    *     decay data, including gamma and total energy, are from endf/b-vi         *
    *                                                                              *
    *   neutron flux spectrum factors and cross sections were produced from        *
    *  the "presas2" case updating all nuclides on the scale "burnup" library      *
    *                                                                              *
    *             fission product yields are from endf/b-v                         *
    *                                                                              *
    *          photon libraries use an 18-energy-group structure                   *
    *         the photon data are from the master photon data base,                *
    *          produced to include bremsstrahlung from uo2 matrix                  *
    *                                                                              *
    *     see information above this box (if present) for later updates            *
    *                                                                              *
    ********************************************************************************
    *                                                                              *
```

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*******************************************************************************

      .other identification and sizes of library.

       data set name:  C:\scale5\tmpdir\ft33f001

     8/15/  94    date library was produced

        1697   total number of nuclides in library
         689   number of light-element nuclides
         129   number of actinide nuclides
         879   number of fission product nuclides

        8025   number of nonzero off-diagonal matrix elements

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case 3                                                  light elements      page  51
power=  3.46mw, burnup=  3937.mwd, flux= 2.77E+13n/cm**2-sec

                        nuclide concentrations, grams
                        basis = fuel assembly (.1902 mtu)
     charge   16.4 d   32.8 d   49.2 d   65.6 d   82.0 d   98.4 d  114.8 d  131.2 d  147.6 d  164.0 d
 h  1  3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03 3.097E+03
 h  2  4.417E+00 4.478E+00 4.540E+00 4.602E+00 4.664E+00 4.726E+00 4.788E+00 4.851E+00 4.914E+00 4.977E+00 5.040E+00
 h  3  2.756E-06 2.838E-06 2.922E-06 3.008E-06 3.095E-06 3.183E-06 3.273E-06 3.364E-06 3.456E-06 3.550E-06 3.645E-06
 h  4  0.000E+00 4.222E-25 4.400E-25 4.541E-25 4.686E-25 4.833E-25 4.983E-25 5.137E-25 5.293E-25 5.452E-25 5.614E-25
he  3  4.773E-08 4.872E-08 4.972E-08 5.078E-08 5.191E-08 5.308E-08 5.431E-08 5.558E-08 5.690E-08 5.826E-08 5.965E-08
he  4  1.612E+00 1.624E+00 1.637E+00 1.649E+00 1.661E+00 1.673E+00 1.685E+00 1.698E+00 1.710E+00 1.722E+00 1.735E+00
he  6  0.000E+00 8.072E-16 8.171E-16 8.195E-16 8.220E-16 8.244E-16 8.269E-16 8.293E-16 8.318E-16 8.342E-16 8.366E-16
li  6  1.815E-07 1.837E-07 1.860E-07 1.882E-07 1.903E-07 1.925E-07 1.946E-07 1.966E-07 1.986E-07 2.006E-07 2.025E-07
li  7  1.683E+00 1.683E+00 1.683E+00 1.684E+00 1.684E+00 1.684E+00 1.684E+00 1.684E+00 1.684E+00 1.684E+00 1.685E+00
li  8  0.000E+00 1.335E-12 1.352E-12 1.356E-12 1.360E-12 1.364E-12 1.368E-12 1.372E-12 1.376E-12 1.380E-12 1.384E-12
be  8  0.000E+00 3.187E-18 3.226E-18 3.236E-18 3.246E-18 3.255E-18 3.265E-18 3.275E-18 3.284E-18 3.294E-18 3.303E-18
be  9  1.607E-06 1.610E-06 1.613E-06 1.616E-06 1.619E-06 1.622E-06 1.626E-06 1.629E-06 1.632E-06 1.635E-06 1.638E-06
be 10  2.340E-05 2.378E-05 2.417E-05 2.457E-05 2.498E-05 2.539E-05 2.582E-05 2.625E-05 2.669E-05 2.714E-05 2.760E-05
be 11  0.000E+00 5.558E-15 5.626E-15 5.642E-15 5.658E-15 5.675E-15 5.691E-15 5.708E-15 5.724E-15 5.740E-15 5.756E-15
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b 10	3.608E-03	3.221E-03	2.871E-03	2.558E-03	2.278E-03	2.029E-03	1.806E-03	1.607E-03	1.429E-03	1.271E-03	1.130E-03
b 11	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01
b 12	0.000E+00	3.369E-14	3.410E-14	3.420E-14	3.430E-14	3.440E-14	3.449E-14	3.459E-14	3.469E-14	3.479E-14	3.489E-14
c 12	9.082E-05	9.246E-05	9.411E-05	9.578E-05	9.744E-05	9.912E-05	1.008E-04	1.025E-04	1.042E-04	1.059E-04	1.076E-04
c 13	2.092E+00	2.130E+00	2.169E+00	2.208E+00	2.247E+00	2.286E+00	2.325E+00	2.364E+00	2.404E+00	2.443E+00	2.483E+00
c 14	5.173E-03	5.267E-03	5.361E-03	5.455E-03	5.550E-03	5.645E-03	5.741E-03	5.836E-03	5.932E-03	6.029E-03	6.125E-03
c 15	0.000E+00	3.238E-11	3.277E-11	3.287E-11	3.296E-11	3.306E-11	3.315E-11	3.325E-11	3.334E-11	3.343E-11	3.353E-11
n 13	0.000E+00	5.491E-20	5.728E-20	5.918E-20	6.113E-20	6.312E-20	6.515E-20	6.722E-20	6.934E-20	7.149E-20	7.369E-20
n 14	9.099E-07	9.382E-07	9.670E-07	9.963E-07	1.026E-06	1.056E-06	1.087E-06	1.119E-06	1.151E-06	1.183E-06	1.216E-06
n 15	1.976E-03	2.012E-03	2.049E-03	2.086E-03	2.123E-03	2.160E-03	2.197E-03	2.235E-03	2.272E-03	2.310E-03	2.347E-03
n 16	0.000E+00	8.865E-10	8.973E-10	8.998E-10	9.024E-10	9.050E-10	9.076E-10	9.102E-10	9.128E-10	9.154E-10	9.180E-10
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04
o 17	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01
o 18	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02
o 19	0.000E+00	4.130E-11	4.180E-11	4.191E-11	4.204E-11	4.216E-11	4.228E-11	4.240E-11	4.252E-11	4.264E-11	4.276E-11
f 19	8.498E-05	8.649E-05	8.802E-05	8.955E-05	9.108E-05	9.262E-05	9.416E-05	9.571E-05	9.726E-05	9.882E-05	1.004E-04
f 20	0.000E+00	3.282E-16	3.380E-16	3.449E-16	3.518E-16	3.588E-16	3.658E-16	3.729E-16	3.800E-16	3.872E-16	3.944E-16
ti 46	9.662E-16	1.036E-15	1.113E-15	1.197E-15	1.290E-15	1.390E-15	1.498E-15	1.615E-15	1.740E-15	1.874E-15	2.018E-15
ti 47	5.723E-05	5.824E-05	5.926E-05	6.028E-05	6.130E-05	6.232E-05	6.335E-05	6.438E-05	6.541E-05	6.644E-05	6.748E-05
ti 48	1.082E-07	1.120E-07	1.160E-07	1.201E-07	1.243E-07	1.286E-07	1.329E-07	1.373E-07	1.419E-07	1.464E-07	1.511E-07
ti 49	1.310E-04	1.333E-04	1.356E-04	1.380E-04	1.404E-04	1.427E-04	1.451E-04	1.475E-04	1.499E-04	1.523E-04	1.547E-04
ti 50	6.172E-04	6.281E-04	6.392E-04	6.502E-04	6.613E-04	6.724E-04	6.836E-04	6.948E-04	7.060E-04	7.172E-04	7.285E-04
ti 51	0.000E+00	2.871E-11	2.927E-11	2.957E-11	2.989E-11	3.021E-11	3.054E-11	3.088E-11	3.122E-11	3.156E-11	3.191E-11
v 49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
v 50	2.245E-03	2.283E-03	2.320E-03	2.358E-03	2.395E-03	2.433E-03	2.470E-03	2.508E-03	2.545E-03	2.583E-03	2.621E-03
v 51	3.905E-01	3.954E-01	4.010E-01	4.071E-01	4.136E-01	4.204E-01	4.273E-01	4.343E-01	4.414E-01	4.486E-01	4.559E-01
v 52	0.000E+00	1.952E-08	1.995E-08	2.021E-08	2.050E-08	2.079E-08	2.108E-08	2.139E-08	2.169E-08	2.200E-08	2.232E-08
v 53	0.000E+00	3.755E-11	3.800E-11	3.810E-11	3.820E-11	3.830E-11	3.840E-11	3.850E-11	3.860E-11	3.870E-11	3.879E-11
v 54	0.000E+00	2.203E-13	2.234E-13	2.244E-13	2.254E-13	2.264E-13	2.274E-13	2.284E-13	2.295E-13	2.305E-13	2.315E-13
cr 50	1.841E+01	1.840E+01	1.839E+01	1.838E+01	1.838E+01	1.837E+01	1.836E+01	1.836E+01	1.835E+01	1.834E+01	1.833E+01
cr 51	1.064E-02	1.294E-02	1.453E-02	1.560E-02	1.633E-02	1.682E-02	1.717E-02	1.741E-02	1.759E-02	1.772E-02	1.782E-02
cr 52	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.762E+02	3.761E+02	3.761E+02
cr 53	4.292E+01	4.291E+01	4.290E+01	4.289E+01	4.288E+01	4.287E+01	4.286E+01	4.285E+01	4.284E+01	4.282E+01	4.281E+01
cr 54	1.210E+01	1.212E+01	1.214E+01	1.216E+01	1.218E+01	1.219E+01	1.221E+01	1.223E+01	1.225E+01	1.227E+01	1.229E+01
cr 55	0.000E+00	2.357E-08	2.390E-08	2.400E-08	2.411E-08	2.422E-08	2.432E-08	2.443E-08	2.454E-08	2.465E-08	2.476E-08
mn 54	8.977E-03	9.046E-03	9.117E-03	9.187E-03	9.255E-03	9.322E-03	9.387E-03	9.451E-03	9.515E-03	9.577E-03	9.637E-03

case 3 light elements page 52
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
mn 55	2.834E+01	2.833E+01	2.832E+01	2.831E+01	2.829E+01	2.828E+01	2.827E+01	2.826E+01	2.825E+01	2.824E+01	2.823E+01
mn 56	0.000E+00	1.251E-04	1.266E-04	1.269E-04	1.272E-04	1.275E-04	1.279E-04	1.282E-04	1.285E-04	1.288E-04	1.291E-04
mn 57	0.000E+00	9.692E-11	9.833E-11	9.884E-11	9.936E-11	9.988E-11	1.004E-10	1.009E-10	1.015E-10	1.020E-10	1.025E-10
mn 58	0.000E+00	2.268E-13	2.298E-13	2.306E-13	2.315E-13	2.324E-13	2.333E-13	2.342E-13	2.351E-13	2.360E-13	2.368E-13
fe 54	6.711E+01	6.710E+01	6.710E+01	6.709E+01	6.709E+01	6.709E+01	6.708E+01	6.708E+01	6.707E+01	6.707E+01	6.706E+01
fe 55	1.504E-01	1.524E-01	1.545E-01	1.566E-01	1.586E-01	1.607E-01	1.627E-01	1.648E-01	1.668E-01	1.688E-01	1.708E-01
fe 56	1.100E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03
fe 57	3.024E+01	3.031E+01	3.038E+01	3.045E+01	3.052E+01	3.059E+01	3.067E+01	3.074E+01	3.081E+01	3.088E+01	3.096E+01
fe 58	3.802E+00	3.805E+00	3.808E+00	3.812E+00	3.815E+00	3.819E+00	3.822E+00	3.826E+00	3.830E+00	3.833E+00	3.837E+00
fe 59	4.270E-04	4.507E-04	4.706E-04	4.865E-04	4.993E-04	5.096E-04	5.181E-04	5.251E-04	5.310E-04	5.361E-04	5.405E-04
co 58m	0.000E+00	1.507E-09	1.522E-09	1.524E-09	1.527E-09	1.529E-09	1.531E-09	1.533E-09	1.536E-09	1.538E-09	1.540E-09
co 58	9.422E-03	9.800E-03	1.011E-02	1.034E-02	1.053E-02	1.067E-02	1.079E-02	1.088E-02	1.095E-02	1.101E-02	1.106E-02
co 59	4.681E+00	4.675E+00	4.670E+00	4.664E+00	4.659E+00	4.653E+00	4.648E+00	4.643E+00	4.637E+00	4.632E+00	4.626E+00
co 60	3.266E-01	3.314E-01	3.363E-01	3.412E-01	3.460E-01	3.509E-01	3.557E-01	3.605E-01	3.653E-01	3.701E-01	3.748E-01
co 60m	0.000E+00	2.351E-06	2.376E-06	2.380E-06	2.384E-06	2.388E-06	2.392E-06	2.396E-06	2.401E-06	2.405E-06	2.408E-06
co 61	0.000E+00	1.819E-07	1.867E-07	1.899E-07	1.931E-07	1.963E-07	1.995E-07	2.027E-07	2.059E-07	2.091E-07	2.123E-07
co 62	0.000E+00	1.377E-11	1.393E-11	1.396E-11	1.400E-11	1.404E-11	1.407E-11	1.411E-11	1.414E-11	1.418E-11	1.422E-11
ni 58	3.012E+02	3.012E+02	3.012E+02	3.011E+02	3.011E+02	3.011E+02	3.010E+02	3.010E+02	3.010E+02	3.009E+02	3.009E+02
ni 59	1.710E+00	1.738E+00	1.766E+00	1.794E+00	1.822E+00	1.850E+00	1.878E+00	1.905E+00	1.933E+00	1.961E+00	1.989E+00
ni 60	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02	1.197E+02
ni 61	5.727E+00	5.735E+00	5.743E+00	5.751E+00	5.760E+00	5.768E+00	5.776E+00	5.784E+00	5.793E+00	5.801E+00	5.809E+00
ni 62	1.675E+01	1.674E+01	1.674E+01	1.673E+01	1.673E+01	1.672E+01	1.672E+01	1.671E+01	1.670E+01	1.670E+01	1.669E+01
ni 63	3.178E-01	3.234E-01	3.290E-01	3.346E-01	3.403E-01	3.459E-01	3.516E-01	3.572E-01	3.629E-01	3.686E-01	3.743E-01
ni 64	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00
ni 65	0.000E+00	1.680E-06	1.700E-06	1.705E-06	1.710E-06	1.714E-06	1.719E-06	1.724E-06	1.729E-06	1.734E-06	1.739E-06
ni 66	2.737E-14	1.932E-10	1.993E-10	2.004E-10	2.016E-10	2.028E-10	2.039E-10	2.051E-10	2.063E-10	2.074E-10	2.086E-10
cu 62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cu 63	3.229E-03	3.328E-03	3.429E-03	3.532E-03	3.636E-03	3.742E-03	3.850E-03	3.960E-03	4.071E-03	4.184E-03	4.299E-03
cu 64	6.183E-26	2.201E-08	2.295E-08	2.370E-08	2.448E-08	2.526E-08	2.606E-08	2.688E-08	2.772E-08	2.857E-08	2.943E-08
cu 65	1.012E-02	1.029E-02	1.048E-02	1.066E-02	1.085E-02	1.103E-02	1.122E-02	1.140E-02	1.159E-02	1.178E-02	1.196E-02
cu 66	4.267E-17	2.210E-10	2.277E-10	2.323E-10	2.370E-10	2.417E-10	2.465E-10	2.513E-10	2.561E-10	2.610E-10	2.659E-10

cu 67	5.222E-17	1.245E-13	1.313E-13	1.344E-13	1.375E-13	1.407E-13	1.439E-13	1.471E-13	1.504E-13	1.537E-13	1.570E-13	
zn 63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
zn 64	3.665E-06	3.829E-06	4.009E-06	4.195E-06	4.387E-06	4.585E-06	4.790E-06	5.001E-06	5.218E-06	5.442E-06	5.673E-06	
zn 65	1.089E-09	1.153E-09	1.221E-09	1.292E-09	1.366E-09	1.443E-09	1.523E-09	1.606E-09	1.693E-09	1.783E-09	1.877E-09	
zn 66	1.947E-05	2.017E-05	2.090E-05	2.164E-05	2.239E-05	2.316E-05	2.394E-05	2.474E-05	2.556E-05	2.639E-05	2.723E-05	
zn 67	9.137E-09	9.636E-09	1.016E-08	1.070E-08	1.126E-08	1.185E-08	1.246E-08	1.308E-08	1.374E-08	1.441E-08	1.511E-08	
zn 68	4.652E-11	4.993E-11	5.357E-11	5.742E-11	6.149E-11	6.578E-11	7.030E-11	7.507E-11	8.009E-11	8.537E-11	9.093E-11	
zn 69	4.779E-35	1.010E-17	1.097E-17	1.179E-17	1.267E-17	1.359E-17	1.457E-17	1.560E-17	1.669E-17	1.784E-17	1.905E-17	
zn 69m	6.528E-34	9.952E-18	1.081E-17	1.162E-17	1.248E-17	1.338E-17	1.435E-17	1.536E-17	1.644E-17	1.757E-17	1.877E-17	
zn 70	2.523E-19	2.804E-19	3.116E-19	3.456E-19	3.829E-19	4.235E-19	4.678E-19	5.161E-19	5.686E-19	6.256E-19	6.876E-19	
zn 71	0.000E+00	6.512E-29	7.323E-29	8.146E-29	9.050E-29	1.004E-28	1.112E-28	1.230E-28	1.359E-28	1.500E-28	1.653E-28	
zn 71m	0.000E+00	6.623E-28	7.448E-28	8.285E-28	9.205E-28	1.021E-27	1.131E-27	1.251E-27	1.383E-27	1.526E-27	1.681E-27	
sr 84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 87	8.532E-04	8.679E-04	8.828E-04	8.977E-04	9.126E-04	9.276E-04	9.426E-04	9.576E-04	9.727E-04	9.877E-04	1.003E-03	
sr 87m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 88	8.013E-02	8.155E-02	8.299E-02	8.444E-02	8.589E-02	8.734E-02	8.880E-02	9.026E-02	9.172E-02	9.319E-02	9.467E-02	

case 3 light elements page 53
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d		
sr 89	4.098E-04	4.247E-04	4.377E-04	4.484E-04	4.572E-04	4.646E-04	4.708E-04	4.760E-04	4.804E-04	4.842E-04	4.876E-04	
sr 90	1.896E-06	1.959E-06	2.023E-06	2.089E-06	2.157E-06	2.225E-06	2.295E-06	2.367E-06	2.439E-06	2.513E-06	2.588E-06	
sr 91	0.000E+00	2.358E-07	2.386E-07	2.393E-07	2.400E-07	2.407E-07	2.414E-07	2.420E-07	2.427E-07	2.434E-07	2.441E-07	
sr 93	0.000E+00	3.410E-11	3.451E-11	3.461E-11	3.471E-11	3.481E-11	3.490E-11	3.500E-11	3.510E-11	3.520E-11	3.529E-11	
y 89	5.694E-03	5.787E-03	5.884E-03	5.984E-03	6.085E-03	6.189E-03	6.294E-03	6.400E-03	6.507E-03	6.615E-03	6.725E-03	
y 89m	1.401E-13	1.452E-13	1.497E-13	1.533E-13	1.564E-13	1.589E-13	1.610E-13	1.627E-13	1.643E-13	1.656E-13	1.667E-13	
y 90	4.022E-07	9.319E-04	9.564E-04	9.594E-04	9.622E-04	9.649E-04	9.677E-04	9.705E-04	9.732E-04	9.760E-04	9.787E-04	
y 90m	0.000E+00	1.730E-12	1.780E-12	1.816E-12	1.852E-12	1.889E-12	1.926E-12	1.965E-12	2.003E-12	2.042E-12	2.082E-12	
y 91	1.267E-03	1.295E-03	1.321E-03	1.343E-03	1.362E-03	1.378E-03	1.393E-03	1.405E-03	1.416E-03	1.426E-03	1.434E-03	
y 92	0.000E+00	3.156E-06	3.194E-06	3.203E-06	3.213E-06	3.222E-06	3.232E-06	3.241E-06	3.250E-06	3.260E-06	3.269E-06	
y 93	0.000E+00	1.821E-09	1.843E-09	1.848E-09	1.853E-09	1.858E-09	1.863E-09	1.869E-09	1.874E-09	1.879E-09	1.884E-09	
y 94	0.000E+00	1.707E-08	1.728E-08	1.733E-08	1.738E-08	1.743E-08	1.748E-08	1.753E-08	1.758E-08	1.763E-08	1.768E-08	

y 96	0.000E+00	6.206E-13	6.281E-13	6.299E-13	6.317E-13	6.335E-13	6.352E-13	6.370E-13	6.388E-13	6.406E-13	6.424E-13
zr 89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zr 90	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04
zr 91	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04
zr 92	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04
zr 93	1.358E+01	1.382E+01	1.406E+01	1.430E+01	1.454E+01	1.479E+01	1.503E+01	1.528E+01	1.552E+01	1.577E+01	1.602E+01
zr 94	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04
zr 95	4.437E-01	4.506E-01	4.574E-01	4.632E-01	4.684E-01	4.729E-01	4.769E-01	4.806E-01	4.838E-01	4.868E-01	4.895E-01
zr 96	2.883E+03	2.883E+03	2.883E+03	2.882E+03	2.882E+03	2.882E+03	2.882E+03	2.882E+03	2.882E+03	2.882E+03	2.881E+03
zr 97	6.335E-16	8.533E-03	8.636E-03	8.660E-03	8.685E-03	8.709E-03	8.734E-03	8.759E-03	8.783E-03	8.807E-03	8.832E-03
nb 91	4.902E-16	5.189E-16	5.492E-16	5.808E-16	6.138E-16	6.483E-16	6.842E-16	7.217E-16	7.608E-16	8.015E-16	8.439E-16
nb 92	9.419E-13	9.971E-13	1.055E-12	1.116E-12	1.179E-12	1.246E-12	1.315E-12	1.387E-12	1.462E-12	1.540E-12	1.622E-12
nb 93	3.971E-07	4.139E-07	4.313E-07	4.492E-07	4.676E-07	4.866E-07	5.061E-07	5.261E-07	5.467E-07	5.679E-07	5.897E-07
nb 93m	8.639E-06	8.901E-06	9.167E-06	9.437E-06	9.712E-06	9.992E-06	1.028E-05	1.056E-05	1.086E-05	1.115E-05	1.145E-05
nb 94	7.510E-10	7.946E-10	8.406E-10	8.887E-10	9.388E-10	9.911E-10	1.046E-09	1.103E-09	1.162E-09	1.224E-09	1.288E-09
nb 95	3.060E-01	2.888E-01	2.774E-01	2.702E-01	2.657E-01	2.633E-01	2.621E-01	2.619E-01	2.622E-01	2.629E-01	2.639E-01
nb 95m	2.943E-04	2.815E-04	2.850E-04	2.888E-04	2.922E-04	2.951E-04	2.978E-04	3.001E-04	3.022E-04	3.041E-04	3.059E-04
nb 96	2.179E-15	5.766E-06	5.604E-06	5.470E-06	5.395E-06	5.359E-06	5.351E-06	5.361E-06	5.383E-06	5.413E-06	5.447E-06
nb 97	4.854E-17	6.067E-04	6.141E-04	6.158E-04	6.175E-04	6.193E-04	6.210E-04	6.228E-04	6.245E-04	6.262E-04	6.280E-04
nb 97m	5.929E-19	7.978E-06	8.074E-06	8.096E-06	8.119E-06	8.142E-06	8.165E-06	8.188E-06	8.211E-06	8.234E-06	8.257E-06
nb 98	0.000E+00	8.634E-17	9.048E-17	9.390E-17	9.741E-17	1.010E-16	1.047E-16	1.084E-16	1.123E-16	1.162E-16	1.202E-16
nb100	0.000E+00	5.180E-25	5.488E-25	5.761E-25	6.046E-25	6.344E-25	6.654E-25	6.978E-25	7.315E-25	7.666E-25	8.031E-25
mo 92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 94	1.523E-14	1.641E-14	1.766E-14	1.899E-14	2.039E-14	2.187E-14	2.343E-14	2.508E-14	2.681E-14	2.864E-14	3.056E-14
mo 95	4.003E+00	4.096E+00	4.183E+00	4.267E+00	4.350E+00	4.431E+00	4.511E+00	4.591E+00	4.671E+00	4.751E+00	4.832E+00
mo 96	1.169E-01	1.215E-01	1.261E-01	1.309E-01	1.358E-01	1.408E-01	1.459E-01	1.511E-01	1.564E-01	1.618E-01	1.674E-01
mo 97	7.786E+00	7.913E+00	8.051E+00	8.189E+00	8.328E+00	8.467E+00	8.606E+00	8.746E+00	8.886E+00	9.027E+00	9.168E+00
mo 98	3.995E-02	4.138E-02	4.284E-02	4.434E-02	4.586E-02	4.741E-02	4.900E-02	5.061E-02	5.226E-02	5.393E-02	5.564E-02
mo 99	3.293E-10	6.246E-07	6.646E-07	6.900E-07	7.159E-07	7.424E-07	7.695E-07	7.972E-07	8.255E-07	8.545E-07	8.841E-07
mo100	3.660E-09	3.789E-09	3.966E-09	4.151E-09	4.344E-09	4.545E-09	4.754E-09	4.971E-09	5.196E-09	5.430E-09	5.673E-09
mo101	0.000E+00	1.332E-16	1.411E-16	1.481E-16	1.554E-16	1.631E-16	1.711E-16	1.794E-16	1.881E-16	1.971E-16	2.065E-16
cd106	4.753E-42	6.536E-42	8.615E-42	1.114E-41	1.426E-41	1.797E-41	2.228E-41	2.733E-41	3.342E-41	4.055E-41	4.887E-41
cd107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd108	5.363E-36	7.303E-36	9.653E-36	1.247E-35	1.584E-35	1.985E-35	2.462E-35	3.028E-35	3.697E-35	4.484E-35	5.409E-35
cd109	1.252E-39	1.613E-39	2.106E-39	2.752E-39	3.578E-39	4.617E-39	5.909E-39	7.498E-39	9.438E-39	1.179E-38	1.462E-38
cd110	5.172E-32	6.607E-32	8.421E-32	1.069E-31	1.350E-31	1.698E-31	2.126E-31	2.650E-31	3.290E-31	4.066E-31	5.004E-31

case 3 light elements page 54
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
cd111	9.416E-07	9.579E-07	9.744E-07	9.909E-07	1.007E-06	1.024E-06	1.041E-06	1.057E-06	1.074E-06	1.091E-06	1.107E-06
cd111m	0.000E+00	6.544E-40	1.309E-39	1.309E-39	1.963E-39	2.617E-39	3.272E-39	3.926E-39	5.235E-39	5.889E-39	7.852E-39
cd112	8.079E-06	8.217E-06	8.357E-06	8.497E-06	8.637E-06	8.777E-06	8.918E-06	9.058E-06	9.199E-06	9.341E-06	9.482E-06
cd113	4.514E-08	4.519E-08	4.521E-08	4.523E-08	4.525E-08	4.526E-08	4.528E-08	4.529E-08	4.530E-08	4.532E-08	4.533E-08
cd113m	1.168E-08	1.208E-08	1.250E-08	1.292E-08	1.336E-08	1.380E-08	1.424E-08	1.470E-08	1.516E-08	1.564E-08	1.612E-08
cd114	3.333E-04	3.437E-04	3.549E-04	3.667E-04	3.790E-04	3.918E-04	4.051E-04	4.188E-04	4.329E-04	4.474E-04	4.623E-04
cd115	9.896E-13	1.239E-08	1.298E-08	1.340E-08	1.384E-08	1.431E-08	1.479E-08	1.528E-08	1.580E-08	1.633E-08	1.687E-08
cd115m	1.631E-08	1.856E-08	2.056E-08	2.233E-08	2.393E-08	2.542E-08	2.682E-08	2.817E-08	2.949E-08	3.078E-08	3.208E-08
cd116	5.894E-06	5.999E-06	6.105E-06	6.212E-06	6.319E-06	6.426E-06	6.534E-06	6.641E-06	6.750E-06	6.858E-06	6.967E-06
cd117	0.000E+00	8.371E-10	8.473E-10	8.497E-10	8.522E-10	8.547E-10	8.572E-10	8.597E-10	8.621E-10	8.646E-10	8.671E-10
cd117m	0.000E+00	7.446E-13	7.670E-13	7.825E-13	7.983E-13	8.142E-13	8.302E-13	8.463E-13	8.626E-13	8.789E-13	8.954E-13
cd119	0.000E+00	4.343E-13	4.395E-13	4.408E-13	4.420E-13	4.433E-13	4.446E-13	4.459E-13	4.471E-13	4.484E-13	4.496E-13
cd121	0.000E+00	1.121E-14	1.134E-14	1.137E-14	1.141E-14	1.144E-14	1.147E-14	1.150E-14	1.154E-14	1.157E-14	1.160E-14
in113	2.001E-01	2.040E-01	2.080E-01	2.119E-01	2.159E-01	2.198E-01	2.238E-01	2.277E-01	2.317E-01	2.357E-01	2.397E-01
in113m	2.553E-05	2.560E-05	2.569E-05	2.577E-05	2.586E-05	2.594E-05	2.603E-05	2.611E-05	2.619E-05	2.627E-05	2.634E-05
in114	1.303E-08	2.397E-08	2.521E-08	2.626E-08	2.723E-08	2.813E-08	2.898E-08	2.979E-08	3.057E-08	3.132E-08	3.206E-08
in114m	8.103E-04	8.740E-04	9.320E-04	9.833E-04	1.029E-03	1.071E-03	1.110E-03	1.146E-03	1.180E-03	1.213E-03	1.244E-03
in115	4.285E-06	4.313E-06	4.341E-06	4.369E-06	4.396E-06	4.423E-06	4.449E-06	4.474E-06	4.499E-06	4.524E-06	4.548E-06
in116	0.000E+00	1.513E-11	1.531E-11	1.536E-11	1.540E-11	1.545E-11	1.550E-11	1.554E-11	1.559E-11	1.563E-11	1.568E-11
in116m	0.000E+00	3.214E-10	3.274E-10	3.305E-10	3.335E-10	3.365E-10	3.394E-10	3.423E-10	3.452E-10	3.481E-10	3.509E-10
in117	0.000E+00	2.766E-09	2.800E-09	2.807E-09	2.816E-09	2.824E-09	2.832E-09	2.840E-09	2.848E-09	2.856E-09	2.864E-09
in117m	0.000E+00	5.940E-10	6.013E-10	6.030E-10	6.047E-10	6.065E-10	6.083E-10	6.100E-10	6.118E-10	6.135E-10	6.153E-10
in118	0.000E+00	1.763E-12	1.785E-12	1.790E-12	1.795E-12	1.800E-12	1.806E-12	1.811E-12	1.816E-12	1.821E-12	1.826E-12
in119	0.000E+00	3.642E-11	3.686E-11	3.697E-11	3.708E-11	3.719E-11	3.730E-11	3.741E-11	3.752E-11	3.764E-11	3.775E-11
in119m	0.000E+00	2.615E-12	2.647E-12	2.654E-12	2.662E-12	2.670E-12	2.677E-12	2.685E-12	2.693E-12	2.700E-12	2.708E-12
in120	0.000E+00	9.099E-22	9.322E-22	9.375E-22	9.430E-22	9.486E-22	9.542E-22	9.597E-22	9.653E-22	9.709E-22	9.765E-22
in120m	0.000E+00	2.047E-20	2.097E-20	2.109E-20	2.122E-20	2.134E-20	2.147E-20	2.159E-20	2.172E-20	2.185E-20	2.197E-20
in121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sn112	1.484E+01	1.483E+01	1.483E+01	1.482E+01	1.482E+01	1.481E+01	1.481E+01	1.481E+01	1.480E+01	1.480E+01	1.479E+01
sn113	4.251E-02	4.262E-02	4.277E-02	4.292E-02	4.306E-02	4.320E-02	4.333E-02	4.347E-02	4.360E-02	4.373E-02	4.386E-02
sn113m	0.000E+00	1.764E-06	1.785E-06	1.789E-06	1.794E-06	1.799E-06	1.803E-06	1.808E-06	1.813E-06	1.817E-06	1.822E-06

sn114	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01
sn115	5.475E+00	5.468E+00	5.461E+00	5.454E+00	5.447E+00	5.440E+00	5.433E+00	5.426E+00	5.419E+00	5.412E+00	5.405E+00
sn116	2.288E+02	2.288E+02	2.288E+02	2.287E+02	2.287E+02	2.287E+02	2.287E+02	2.287E+02	2.287E+02	2.286E+02	2.286E+02
sn117	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02
sn117m	9.497E-03	2.383E-02	3.028E-02	3.313E-02	3.443E-02	3.504E-02	3.537E-02	3.556E-02	3.571E-02	3.582E-02	3.593E-02
sn118	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02
sn119	1.383E+02	1.383E+02	1.383E+02	1.383E+02	1.383E+02	1.384E+02	1.384E+02	1.384E+02	1.384E+02	1.384E+02	1.384E+02
sn119m	7.077E-01	7.128E-01	7.181E-01	7.233E-01	7.284E-01	7.335E-01	7.384E-01	7.432E-01	7.479E-01	7.526E-01	7.571E-01
sn120	5.239E+02	5.239E+02	5.239E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02
sn121	1.486E-07	8.509E-04	8.613E-04	8.637E-04	8.662E-04	8.687E-04	8.712E-04	8.737E-04	8.762E-04	8.787E-04	8.812E-04
sn121m	3.411E-03	3.470E-03	3.531E-03	3.591E-03	3.651E-03	3.712E-03	3.772E-03	3.833E-03	3.894E-03	3.955E-03	4.017E-03
sn122	7.554E+01	7.554E+01	7.554E+01	7.554E+01	7.554E+01	7.554E+01	7.553E+01	7.553E+01	7.553E+01	7.553E+01	7.553E+01
sn123	1.032E-02	1.035E-02	1.039E-02	1.042E-02	1.046E-02	1.049E-02	1.053E-02	1.056E-02	1.059E-02	1.063E-02	1.066E-02
sn123m	0.000E+00	1.270E-08	1.285E-08	1.289E-08	1.292E-08	1.296E-08	1.300E-08	1.303E-08	1.307E-08	1.311E-08	1.314E-08
sn124	9.320E+01	9.320E+01	9.319E+01	9.319E+01	9.318E+01	9.317E+01	9.317E+01	9.316E+01	9.316E+01	9.315E+01	9.314E+01
sn125	2.144E-05	1.107E-04	1.394E-04	1.485E-04	1.516E-04	1.529E-04	1.536E-04	1.541E-04	1.545E-04	1.550E-04	1.554E-04
sn125m	0.000E+00	3.346E-06	3.386E-06	3.395E-06	3.405E-06	3.414E-06	3.424E-06	3.434E-06	3.443E-06	3.453E-06	3.462E-06
sb121	4.660E-01	4.731E-01	4.810E-01	4.890E-01	4.970E-01	5.050E-01	5.130E-01	5.210E-01	5.290E-01	5.370E-01	5.451E-01
sb122	7.750E-08	1.666E-04	1.739E-04	1.773E-04	1.807E-04	1.842E-04	1.876E-04	1.911E-04	1.946E-04	1.982E-04	2.017E-04

case 3 light elements page 55
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
sb122m	0.000E+00	1.616E-09	1.663E-09	1.696E-09	1.728E-09	1.761E-09	1.794E-09	1.828E-09	1.861E-09	1.895E-09	1.928E-09
sb123	4.208E-02	4.295E-02	4.383E-02	4.470E-02	4.558E-02	4.646E-02	4.734E-02	4.822E-02	4.911E-02	5.000E-02	5.089E-02
sb124	1.731E-04	1.828E-04	1.922E-04	2.009E-04	2.090E-04	2.167E-04	2.240E-04	2.311E-04	2.379E-04	2.445E-04	2.510E-04
sb124m	0.000E+00	1.039E-11	1.073E-11	1.097E-11	1.122E-11	1.147E-11	1.172E-11	1.198E-11	1.223E-11	1.249E-11	1.275E-11
sb125	2.368E-01	2.399E-01	2.430E-01	2.462E-01	2.494E-01	2.525E-01	2.556E-01	2.588E-01	2.618E-01	2.649E-01	2.680E-01
sb126	6.430E-06	1.920E-05	2.472E-05	2.720E-05	2.847E-05	2.925E-05	2.984E-05	3.035E-05	3.082E-05	3.129E-05	3.175E-05
sb126m	0.000E+00	2.602E-08	2.668E-08	2.711E-08	2.753E-08	2.796E-08	2.839E-08	2.882E-08	2.924E-08	2.967E-08	3.009E-08
te120	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te122	1.953E-02	2.005E-02	2.074E-02	2.145E-02	2.217E-02	2.290E-02	2.365E-02	2.442E-02	2.519E-02	2.599E-02	2.679E-02
te123	1.151E-04	1.201E-04	1.254E-04	1.308E-04	1.363E-04	1.421E-04	1.480E-04	1.540E-04	1.603E-04	1.667E-04	1.732E-04

te123m	3.488E-05	3.647E-05	3.812E-05	3.982E-05	4.154E-05	4.331E-05	4.511E-05	4.696E-05	4.884E-05	5.077E-05	5.274E-05	
te124	1.024E-03	1.064E-03	1.105E-03	1.149E-03	1.195E-03	1.242E-03	1.291E-03	1.342E-03	1.394E-03	1.448E-03	1.504E-03	
te125	9.351E-02	9.616E-02	9.886E-02	1.016E-01	1.043E-01	1.071E-01	1.100E-01	1.128E-01	1.157E-01	1.187E-01	1.216E-01	
te125m	2.983E-03	3.019E-03	3.057E-03	3.096E-03	3.135E-03	3.175E-03	3.215E-03	3.255E-03	3.296E-03	3.336E-03	3.377E-03	
te126	1.845E-03	1.899E-03	1.962E-03	2.030E-03	2.101E-03	2.173E-03	2.248E-03	2.323E-03	2.401E-03	2.479E-03	2.560E-03	
te127	6.112E-10	7.009E-09	7.333E-09	7.614E-09	7.908E-09	8.210E-09	8.519E-09	8.836E-09	9.161E-09	9.493E-09	9.833E-09	
te127m	1.746E-07	1.833E-07	1.923E-07	2.014E-07	2.106E-07	2.201E-07	2.297E-07	2.395E-07	2.496E-07	2.598E-07	2.703E-07	
te128	6.150E-09	6.581E-09	7.041E-09	7.526E-09	8.038E-09	8.578E-09	9.147E-09	9.745E-09	1.037E-08	1.104E-08	1.173E-08	
te129	1.935E-17	8.223E-16	8.929E-16	9.592E-16	1.029E-15	1.102E-15	1.179E-15	1.261E-15	1.347E-15	1.437E-15	1.532E-15	
te129m	2.099E-14	2.656E-14	3.148E-14	3.591E-14	4.002E-14	4.398E-14	4.787E-14	5.179E-14	5.578E-14	5.989E-14	6.416E-14	
te130	3.011E-17	3.190E-17	3.412E-17	3.671E-17	3.962E-17	4.286E-17	4.641E-17	5.027E-17	5.444E-17	5.895E-17	6.379E-17	
te131	2.982E-34	4.240E-25	4.589E-25	4.951E-25	5.360E-25	5.814E-25	6.313E-25	6.858E-25	7.449E-25	8.088E-25	8.778E-25	
te131m	9.538E-32	2.226E-24	2.410E-24	2.599E-24	2.814E-24	3.053E-24	3.315E-24	3.601E-24	3.911E-24	4.247E-24	4.609E-24	
sm144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sm145	6.409E-21	6.540E-21	6.674E-21	6.808E-21	6.941E-21	7.074E-21	7.206E-21	7.339E-21	7.470E-21	7.602E-21	7.733E-21	
sm146	1.328E-19	1.369E-19	1.410E-19	1.452E-19	1.494E-19	1.537E-19	1.580E-19	1.624E-19	1.668E-19	1.713E-19	1.759E-19	
sm147	1.731E-15	1.748E-15	1.764E-15	1.780E-15	1.796E-15	1.812E-15	1.828E-15	1.843E-15	1.858E-15	1.873E-15	1.888E-15	
sm148	1.184E-12	1.187E-12	1.190E-12	1.192E-12	1.195E-12	1.197E-12	1.199E-12	1.202E-12	1.203E-12	1.205E-12	1.207E-12	
sm149	3.556E-09	3.354E-09	3.174E-09	3.003E-09	2.841E-09	2.687E-09	2.542E-09	2.404E-09	2.273E-09	2.149E-09	2.031E-09	
sm150	2.259E-06	2.263E-06	2.267E-06	2.271E-06	2.274E-06	2.277E-06	2.280E-06	2.282E-06	2.284E-06	2.286E-06	2.288E-06	
sm151	7.950E-08	7.941E-08	7.953E-08	7.966E-08	7.978E-08	7.990E-08	8.001E-08	8.011E-08	8.021E-08	8.029E-08	8.036E-08	
sm152	2.846E-06	2.875E-06	2.905E-06	2.934E-06	2.963E-06	2.991E-06	3.018E-06	3.045E-06	3.072E-06	3.098E-06	3.123E-06	
sm153	1.085E-12	5.677E-08	5.768E-08	5.791E-08	5.815E-08	5.839E-08	5.863E-08	5.886E-08	5.909E-08	5.932E-08	5.955E-08	
sm154	4.883E-06	5.007E-06	5.133E-06	5.259E-06	5.386E-06	5.513E-06	5.641E-06	5.769E-06	5.898E-06	6.027E-06	6.156E-06	
sm155	0.000E+00	8.705E-11	8.818E-11	8.851E-11	8.885E-11	8.919E-11	8.952E-11	8.986E-11	9.020E-11	9.054E-11	9.088E-11	
eu151	1.371E-09	1.375E-09	1.377E-09	1.379E-09	1.379E-09	1.379E-09	1.378E-09	1.377E-09	1.374E-09	1.372E-09	1.368E-09	
eu152	1.529E-06	1.545E-06	1.560E-06	1.575E-06	1.588E-06	1.600E-06	1.612E-06	1.622E-06	1.632E-06	1.641E-06	1.649E-06	
eu152m	0.000E+00	3.232E-09	3.264E-09	3.265E-09	3.264E-09	3.262E-09	3.259E-09	3.255E-09	3.250E-09	3.243E-09	3.236E-09	
eu153	5.436E-01	5.426E-01	5.414E-01	5.400E-01	5.383E-01	5.365E-01	5.345E-01	5.323E-01	5.299E-01	5.273E-01	5.246E-01	
eu154	1.091E-01	1.099E-01	1.105E-01	1.111E-01	1.117E-01	1.122E-01	1.126E-01	1.130E-01	1.133E-01	1.136E-01	1.138E-01	
eu155	2.253E-02	2.275E-02	2.295E-02	2.314E-02	2.331E-02	2.347E-02	2.361E-02	2.374E-02	2.385E-02	2.395E-02	2.404E-02	
eu156	2.814E-03	5.995E-03	7.571E-03	8.356E-03	8.772E-03	9.014E-03	9.171E-03	9.286E-03	9.379E-03	9.459E-03	9.530E-03	
gd152	4.803E-02	4.546E-02	4.300E-02	4.067E-02	3.846E-02	3.636E-02	3.437E-02	3.248E-02	3.070E-02	2.901E-02	2.740E-02	
gd153	1.534E-01	1.489E-01	1.444E-01	1.401E-01	1.358E-01	1.317E-01	1.276E-01	1.236E-01	1.196E-01	1.158E-01	1.121E-01	
gd154	9.588E+00	9.557E+00	9.526E+00	9.495E+00	9.464E+00	9.433E+00	9.402E+00	9.371E+00	9.340E+00	9.309E+00	9.278E+00	
gd155m	0.000E+00	1.622E-12	1.639E-12	1.641E-12	1.643E-12	1.645E-12	1.647E-12	1.649E-12	1.651E-12	1.652E-12	1.654E-12	
gd155	5.406E-02	5.362E-02	5.330E-02	5.305E-02	5.283E-02	5.264E-02	5.245E-02	5.228E-02	5.210E-02	5.193E-02	5.176E-02	
gd156	1.979E+02	1.978E+02	1.977E+02	1.977E+02	1.976E+02	1.975E+02	1.974E+02	1.973E+02	1.972E+02	1.971E+02	1.970E+02	

case 3 light elements page 56
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
gd157	5.184E-02	5.161E-02	5.157E-02	5.155E-02	5.152E-02	5.150E-02	5.147E-02	5.145E-02	5.142E-02	5.140E-02	5.138E-02
gd158	2.383E+02	2.384E+02	2.384E+02	2.384E+02	2.385E+02	2.385E+02	2.386E+02	2.386E+02	2.386E+02	2.387E+02	2.387E+02
gd159	7.337E-15	6.453E-03	6.534E-03	6.556E-03	6.578E-03	6.600E-03	6.622E-03	6.644E-03	6.666E-03	6.688E-03	6.710E-03
gd160	1.201E+02	1.201E+02	1.201E+02	1.200E+02	1.200E+02	1.200E+02	1.200E+02	1.200E+02	1.200E+02	1.200E+02	1.200E+02
gd161	0.000E+00	2.230E-06	2.257E-06	2.263E-06	2.269E-06	2.276E-06	2.282E-06	2.289E-06	2.295E-06	2.301E-06	2.307E-06
gd162	0.000E+00	6.579E-10	6.738E-10	6.776E-10	6.815E-10	6.854E-10	6.892E-10	6.931E-10	6.970E-10	7.009E-10	7.048E-10
tb157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tb159	4.560E+00	4.631E+00	4.709E+00	4.787E+00	4.864E+00	4.942E+00	5.020E+00	5.098E+00	5.175E+00	5.253E+00	5.330E+00
tb160	8.309E-02	8.619E-02	8.926E-02	9.216E-02	9.493E-02	9.758E-02	1.001E-01	1.026E-01	1.050E-01	1.074E-01	1.097E-01
tb161	4.251E-04	5.696E-03	6.805E-03	7.060E-03	7.150E-03	7.207E-03	7.257E-03	7.305E-03	7.352E-03	7.398E-03	7.444E-03
tb162	0.000E+00	6.077E-10	6.225E-10	6.260E-10	6.295E-10	6.331E-10	6.367E-10	6.403E-10	6.439E-10	6.475E-10	6.511E-10
dy156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy158	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy159	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy160	3.054E-01	3.145E-01	3.239E-01	3.336E-01	3.436E-01	3.539E-01	3.644E-01	3.751E-01	3.861E-01	3.973E-01	4.087E-01
dy161	4.256E-01	4.280E-01	4.347E-01	4.423E-01	4.502E-01	4.582E-01	4.662E-01	4.743E-01	4.824E-01	4.907E-01	4.989E-01
dy162	1.571E-01	1.620E-01	1.668E-01	1.718E-01	1.768E-01	1.818E-01	1.869E-01	1.921E-01	1.974E-01	2.027E-01	2.081E-01
dy163	5.578E-02	5.830E-02	6.093E-02	6.362E-02	6.640E-02	6.924E-02	7.217E-02	7.517E-02	7.824E-02	8.140E-02	8.463E-02
dy164	7.499E-03	7.926E-03	8.373E-03	8.838E-03	9.319E-03	9.819E-03	1.034E-02	1.087E-02	1.143E-02	1.200E-02	1.259E-02
dy165	0.000E+00	3.143E-06	3.360E-06	3.557E-06	3.762E-06	3.975E-06	4.197E-06	4.427E-06	4.667E-06	4.915E-06	5.172E-06
dy165m	0.000E+00	1.800E-08	1.925E-08	2.038E-08	2.155E-08	2.277E-08	2.404E-08	2.535E-08	2.672E-08	2.814E-08	2.961E-08
dy166	9.258E-10	2.912E-07	3.257E-07	3.464E-07	3.676E-07	3.897E-07	4.127E-07	4.367E-07	4.617E-07	4.877E-07	5.148E-07
ho163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ho165	4.335E-03	4.665E-03	5.021E-03	5.397E-03	5.795E-03	6.215E-03	6.657E-03	7.123E-03	7.614E-03	8.130E-03	8.673E-03
ho166	4.527E-10	2.960E-06	3.229E-06	3.479E-06	3.744E-06	4.025E-06	4.322E-06	4.636E-06	4.968E-06	5.317E-06	5.686E-06
ho166m	1.158E-05	1.272E-05	1.396E-05	1.530E-05	1.674E-05	1.829E-05	1.995E-05	2.174E-05	2.366E-05	2.571E-05	2.791E-05
cr162	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cr163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cr164	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cr165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

er166	3.004E-04	3.259E-04	3.569E-04	3.904E-04	4.264E-04	4.652E-04	5.068E-04	5.515E-04	5.993E-04	6.506E-04	7.054E-04
er167	3.136E-06	3.488E-06	3.875E-06	4.297E-06	4.755E-06	5.254E-06	5.795E-06	6.382E-06	7.017E-06	7.704E-06	8.446E-06
er167m	0.000E+00	5.552E-13	6.154E-13	6.751E-13	7.395E-13	8.091E-13	8.840E-13	9.647E-13	1.051E-12	1.145E-12	1.244E-12
er168	1.372E-06	1.556E-06	1.763E-06	1.994E-06	2.250E-06	2.534E-06	2.848E-06	3.196E-06	3.579E-06	4.001E-06	4.466E-06
er169	6.118E-11	4.102E-10	5.721E-10	6.810E-10	7.812E-10	8.864E-10	1.002E-09	1.129E-09	1.270E-09	1.425E-09	1.597E-09
er170	2.334E-13	2.701E-13	3.144E-13	3.671E-13	4.292E-13	5.019E-13	5.868E-13	6.855E-13	7.997E-13	9.317E-13	1.084E-12
er171	0.000E+00	2.519E-18	2.968E-18	3.475E-18	4.074E-18	4.778E-18	5.602E-18	6.563E-18	7.679E-18	8.972E-18	1.047E-17
er172	7.302E-26	2.230E-21	2.668E-21	3.131E-21	3.681E-21	4.330E-21	5.092E-21	5.983E-21	7.022E-21	8.229E-21	9.629E-21
totals	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05

flux	2.710E+13	2.743E+13	2.751E+13	2.759E+13	2.767E+13	2.775E+13	2.783E+13	2.791E+13	2.799E+13	2.807E+13

case 3 actinides page 57
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
he 4	1.859E-02	1.964E-02	2.074E-02	2.188E-02	2.307E-02	2.431E-02	2.560E-02	2.694E-02	2.833E-02	2.977E-02	3.127E-02
th226	5.090E-17	8.160E-17	1.021E-16	1.162E-16	1.268E-16	1.353E-16	1.427E-16	1.495E-16	1.561E-16	1.625E-16	1.689E-16
th227	4.969E-12	5.165E-12	5.364E-12	5.565E-12	5.771E-12	5.980E-12	6.193E-12	6.410E-12	6.630E-12	6.855E-12	7.083E-12
th228	1.553E-07	1.633E-07	1.716E-07	1.802E-07	1.890E-07	1.981E-07	2.076E-07	2.173E-07	2.274E-07	2.377E-07	2.484E-07
th229	7.015E-09	7.405E-09	7.817E-09	8.250E-09	8.703E-09	9.178E-09	9.675E-09	1.020E-08	1.074E-08	1.131E-08	1.190E-08
th230	2.292E-04	2.302E-04	2.312E-04	2.321E-04	2.330E-04	2.338E-04	2.347E-04	2.354E-04	2.361E-04	2.368E-04	2.375E-04
th231	8.472E-09	2.682E-07	2.723E-07	2.740E-07	2.757E-07	2.773E-07	2.789E-07	2.804E-07	2.819E-07	2.834E-07	2.848E-07
th232	2.517E-05	2.579E-05	2.642E-05	2.705E-05	2.769E-05	2.833E-05	2.898E-05	2.963E-05	3.029E-05	3.095E-05	3.162E-05
th233	0.000E+00	2.827E-11	2.931E-11	3.009E-11	3.089E-11	3.170E-11	3.252E-11	3.334E-11	3.418E-11	3.503E-11	3.589E-11
th234	2.655E-06	2.654E-06	2.654E-06	2.653E-06	2.653E-06	2.652E-06	2.651E-06	2.651E-06	2.650E-06	2.649E-06	2.649E-06
pa231	9.475E-05	9.646E-05	9.843E-05	1.004E-04	1.024E-04	1.043E-04	1.063E-04	1.083E-04	1.102E-04	1.122E-04	1.141E-04
pa232	1.010E-14	1.033E-07	1.067E-07	1.092E-07	1.116E-07	1.141E-07	1.166E-07	1.191E-07	1.216E-07	1.241E-07	1.266E-07
pa233	1.191E-06	1.215E-06	1.237E-06	1.261E-06	1.286E-06	1.311E-06	1.338E-06	1.365E-06	1.392E-06	1.419E-06	1.447E-06
pa234m	8.951E-11	8.981E-11	8.980E-11	8.979E-11	8.977E-11	8.976E-11	8.974E-11	8.973E-11	8.972E-11	8.970E-11	8.969E-11
pa234	3.998E-11	1.423E-10	1.455E-10	1.478E-10	1.502E-10	1.527E-10	1.553E-10	1.580E-10	1.607E-10	1.634E-10	1.661E-10
pa235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
u230	5.015E-14	8.046E-14	1.007E-13	1.146E-13	1.250E-13	1.334E-13	1.407E-13	1.474E-13	1.539E-13	1.602E-13	1.666E-13
u231	1.684E-14	2.072E-12	2.314E-12	2.419E-12	2.517E-12	2.617E-12	2.720E-12	2.825E-12	2.932E-12	3.042E-12	3.154E-12
u232	2.456E-05	2.543E-05	2.642E-05	2.744E-05	2.848E-05	2.954E-05	3.063E-05	3.174E-05	3.286E-05	3.401E-05	3.519E-05
u233	2.084E-04	2.100E-04	2.116E-04	2.132E-04	2.147E-04	2.162E-04	2.176E-04	2.190E-04	2.204E-04	2.217E-04	2.230E-04

u234	3.042E+01	3.025E+01	3.008E+01	2.991E+01	2.974E+01	2.957E+01	2.941E+01	2.924E+01	2.907E+01	2.891E+01	2.874E+01
u235	2.084E+03	2.053E+03	2.022E+03	1.992E+03	1.962E+03	1.933E+03	1.903E+03	1.875E+03	1.846E+03	1.818E+03	1.790E+03
u236	4.869E+02	4.917E+02	4.965E+02	5.012E+02	5.057E+02	5.103E+02	5.147E+02	5.190E+02	5.233E+02	5.275E+02	5.316E+02
u237	3.692E-02	5.469E-01	6.524E-01	6.777E-01	6.881E-01	6.958E-01	7.028E-01	7.097E-01	7.166E-01	7.233E-01	7.300E-01
u238	1.828E+05	1.828E+05	1.827E+05	1.827E+05	1.826E+05	1.826E+05	1.825E+05	1.825E+05	1.824E+05	1.824E+05	1.823E+05
u239	0.000E+00	5.870E-02	5.940E-02	5.955E-02	5.971E-02	5.987E-02	6.002E-02	6.018E-02	6.034E-02	6.049E-02	6.065E-02
u240	3.937E-24	4.613E-24	5.399E-24	6.312E-24	7.369E-24	8.591E-24	1.000E-23	1.162E-23	1.348E-23	1.561E-23	1.804E-23
u241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
np235	4.521E-07	4.689E-07	4.860E-07	5.032E-07	5.208E-07	5.385E-07	5.566E-07	5.748E-07	5.933E-07	6.121E-07	6.311E-07
np236m	3.531E-17	2.511E-07	2.589E-07	2.649E-07	2.711E-07	2.774E-07	2.838E-07	2.902E-07	2.966E-07	3.031E-07	3.097E-07
np236	2.485E-05	2.591E-05	2.699E-05	2.811E-05	2.924E-05	3.041E-05	3.160E-05	3.282E-05	3.406E-05	3.534E-05	3.664E-05
np237	3.620E+01	3.646E+01	3.714E+01	3.790E+01	3.867E+01	3.946E+01	4.025E+01	4.104E+01	4.183E+01	4.262E+01	4.342E+01
np238	3.260E-06	6.360E-02	6.577E-02	6.730E-02	6.888E-02	7.048E-02	7.210E-02	7.373E-02	7.537E-02	7.702E-02	7.869E-02
np239	1.237E-03	8.395E+00	8.562E+00	8.585E+00	8.608E+00	8.630E+00	8.653E+00	8.675E+00	8.698E+00	8.720E+00	8.742E+00
np240m	3.360E-26	3.937E-26	4.607E-26	5.387E-26	6.289E-26	7.332E-26	8.534E-26	9.917E-26	1.150E-25	1.332E-25	1.539E-25
np240	3.457E-28	1.884E-04	1.945E-04	1.955E-04	1.966E-04	1.977E-04	1.988E-04	1.999E-04	2.010E-04	2.021E-04	2.032E-04
np241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
pu236	2.777E-05	2.876E-05	2.988E-05	3.102E-05	3.219E-05	3.338E-05	3.459E-05	3.582E-05	3.707E-05	3.834E-05	3.964E-05
pu237	7.864E-06	8.821E-06	9.694E-06	1.048E-05	1.121E-05	1.189E-05	1.254E-05	1.317E-05	1.378E-05	1.439E-05	1.499E-05
pu238	7.942E+00	8.194E+00	8.514E+00	8.841E+00	9.175E+00	9.517E+00	9.866E+00	1.022E+01	1.059E+01	1.096E+01	1.134E+01
pu239	8.317E+02	8.271E+02	8.307E+02	8.342E+02	8.376E+02	8.408E+02	8.439E+02	8.469E+02	8.497E+02	8.524E+02	8.550E+02
pu240	2.735E+02	2.788E+02	2.840E+02	2.891E+02	2.942E+02	2.992E+02	3.041E+02	3.089E+02	3.137E+02	3.183E+02	3.229E+02
pu241	1.320E+02	1.343E+02	1.367E+02	1.391E+02	1.416E+02	1.442E+02	1.467E+02	1.493E+02	1.520E+02	1.547E+02	1.574E+02
pu242	3.120E+01	3.250E+01	3.383E+01	3.518E+01	3.656E+01	3.796E+01	3.938E+01	4.082E+01	4.229E+01	4.378E+01	4.530E+01
pu243	2.998E-16	5.174E-03	5.452E-03	5.686E-03	5.926E-03	6.170E-03	6.420E-03	6.674E-03	6.934E-03	7.198E-03	7.468E-03
pu244	1.993E-13	2.336E-13	2.734E-13	3.196E-13	3.731E-13	4.350E-13	5.063E-13	5.884E-13	6.825E-13	7.902E-13	9.134E-13
pu245	9.853E-41	2.661E-19	3.152E-19	3.695E-19	4.327E-19	5.059E-19	5.906E-19	6.882E-19	8.006E-19	9.296E-19	1.077E-18
pu246	6.432E-22	1.341E-21	1.808E-21	2.198E-21	2.598E-21	3.044E-21	3.557E-21	4.148E-21	4.831E-21	5.619E-21	6.526E-21
am239	2.919E-29	1.814E-10	1.896E-10	1.962E-10	2.028E-10	2.094E-10	2.161E-10	2.229E-10	2.297E-10	2.366E-10	2.435E-10
am240	3.691E-12	8.227E-08	8.638E-08	8.938E-08	9.241E-08	9.546E-08	9.853E-08	1.016E-07	1.048E-07	1.079E-07	1.111E-07

case 3 actinides page 58
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
am241	4.541E+00	4.695E+00	4.848E+00	5.001E+00	5.154E+00	5.308E+00	5.462E+00	5.617E+00	5.773E+00	5.929E+00	6.085E+00
am242m	7.722E-02	8.134E-02	8.533E-02	8.918E-02	9.292E-02	9.657E-02	1.002E-01	1.037E-01	1.072E-01	1.106E-01	1.141E-01
am242	9.962E-07	6.695E-03	6.996E-03	7.237E-03	7.481E-03	7.727E-03	7.974E-03	8.224E-03	8.475E-03	8.729E-03	8.985E-03
am243	3.964E+00	4.189E+00	4.430E+00	4.681E+00	4.942E+00	5.212E+00	5.493E+00	5.784E+00	6.084E+00	6.395E+00	6.717E+00
am244m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
am244	0.000E+00	1.978E-03	2.117E-03	2.243E-03	2.375E-03	2.512E-03	2.655E-03	2.803E-03	2.957E-03	3.117E-03	3.283E-03
am245	1.180E-17	1.407E-17	1.669E-17	1.972E-17	2.321E-17	2.723E-17	3.184E-17	3.712E-17	4.315E-17	5.004E-17	5.788E-17
am246	1.608E-24	3.351E-24	4.521E-24	5.496E-24	6.496E-24	7.612E-24	8.893E-24	1.037E-23	1.208E-23	1.405E-23	1.632E-23
cm241	2.177E-08	2.515E-08	2.807E-08	3.061E-08	3.288E-08	3.499E-08	3.698E-08	3.891E-08	4.080E-08	4.268E-08	4.456E-08
cm242	8.026E-01	8.315E-01	8.675E-01	9.042E-01	9.417E-01	9.800E-01	1.019E+00	1.059E+00	1.099E+00	1.140E+00	1.181E+00
cm243	1.526E-02	1.599E-02	1.675E-02	1.755E-02	1.838E-02	1.924E-02	2.014E-02	2.107E-02	2.203E-02	2.303E-02	2.406E-02
cm244	6.067E-01	6.535E-01	7.056E-01	7.607E-01	8.191E-01	8.807E-01	9.458E-01	1.014E+00	1.087E+00	1.163E+00	1.243E+00
cm245	1.285E-02	1.410E-02	1.545E-02	1.689E-02	1.844E-02	2.010E-02	2.187E-02	2.375E-02	2.576E-02	2.790E-02	3.017E-02
cm246	9.335E-04	1.046E-03	1.172E-03	1.309E-03	1.459E-03	1.624E-03	1.804E-03	1.999E-03	2.212E-03	2.444E-03	2.695E-03
cm247	8.626E-06	9.843E-06	1.122E-05	1.276E-05	1.447E-05	1.639E-05	1.851E-05	2.087E-05	2.348E-05	2.637E-05	2.955E-05
cm248	3.833E-07	4.463E-07	5.190E-07	6.020E-07	6.964E-07	8.038E-07	9.255E-07	1.063E-06	1.219E-06	1.394E-06	1.591E-06
cm249	1.533E-19	3.571E-12	4.203E-12	4.888E-12	5.672E-12	6.565E-12	7.581E-12	8.734E-12	1.004E-11	1.152E-11	1.318E-11
cm250	1.200E-15	1.371E-15	1.575E-15	1.814E-15	2.092E-15	2.416E-15	2.791E-15	3.224E-15	3.725E-15	4.301E-15	4.964E-15
cm251	0.000E+00	5.206E-23	6.055E-23	6.993E-23	8.089E-23	9.366E-23	1.085E-22	1.257E-22	1.457E-22	1.687E-22	1.952E-22
totals	1.867E+05	1.867E+05	1.866E+05	1.866E+05	1.865E+05	1.864E+05	1.864E+05	1.863E+05	1.863E+05	1.862E+05	1.861E+05

flux	2.710E+13	2.743E+13	2.751E+13	2.759E+13	2.767E+13	2.775E+13	2.783E+13	2.791E+13	2.799E+13	2.807E+13

case 3 fission products page 59
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
h 3	4.984E-03	5.065E-03	5.147E-03	5.229E-03	5.311E-03	5.393E-03	5.474E-03	5.556E-03	5.637E-03	5.718E-03	5.799E-03
li 6	2.611E-05	2.630E-05	2.649E-05	2.667E-05	2.685E-05	2.702E-05	2.718E-05	2.734E-05	2.750E-05	2.765E-05	2.779E-05

li 7	1.036E-06	1.053E-06	1.070E-06	1.087E-06	1.104E-06	1.122E-06	1.139E-06	1.156E-06	1.173E-06	1.191E-06	1.208E-06	
be 9	1.995E-06	2.028E-06	2.061E-06	2.094E-06	2.127E-06	2.161E-06	2.194E-06	2.227E-06	2.260E-06	2.293E-06	2.326E-06	
be 10	1.330E-05	1.352E-05	1.375E-05	1.397E-05	1.419E-05	1.441E-05	1.463E-05	1.485E-05	1.507E-05	1.529E-05	1.551E-05	
ga 69	2.831E-08	2.894E-08	2.959E-08	3.025E-08	3.092E-08	3.159E-08	3.226E-08	3.294E-08	3.362E-08	3.430E-08	3.498E-08	
ga 70	0.000E+00	3.267E-14	3.319E-14	3.341E-14	3.362E-14	3.383E-14	3.403E-14	3.423E-14	3.443E-14	3.461E-14	3.480E-14	
ge 70	1.040E-09	1.065E-09	1.091E-09	1.117E-09	1.143E-09	1.169E-09	1.195E-09	1.221E-09	1.248E-09	1.274E-09	1.301E-09	
ga 71	7.398E-06	7.561E-06	7.728E-06	7.896E-06	8.065E-06	8.235E-06	8.405E-06	8.576E-06	8.748E-06	8.921E-06	9.095E-06	
ge 71	7.692E-14	2.676E-13	3.418E-13	3.710E-13	3.835E-13	3.898E-13	3.938E-13	3.969E-13	3.996E-13	4.022E-13	4.046E-13	
ge 71m	0.000E+00	3.921E-21	3.986E-21	4.014E-21	4.042E-21	4.070E-21	4.096E-21	4.122E-21	4.148E-21	4.173E-21	4.197E-21	
ga 72	1.433E-11	4.901E-07	4.982E-07	4.999E-07	5.016E-07	5.032E-07	5.048E-07	5.064E-07	5.079E-07	5.094E-07	5.108E-07	
ge 72	4.755E-04	4.834E-04	4.934E-04	5.036E-04	5.137E-04	5.239E-04	5.341E-04	5.444E-04	5.547E-04	5.650E-04	5.753E-04	
ga 73	0.000E+00	4.879E-07	4.928E-07	4.933E-07	4.939E-07	4.944E-07	4.948E-07	4.952E-07	4.957E-07	4.960E-07	4.964E-07	
ge 73	1.488E-03	1.514E-03	1.540E-03	1.567E-03	1.593E-03	1.619E-03	1.646E-03	1.672E-03	1.699E-03	1.725E-03	1.751E-03	
ge 73m	0.000E+00	1.373E-11	1.387E-11	1.388E-11	1.390E-11	1.391E-11	1.393E-11	1.394E-11	1.395E-11	1.396E-11	1.397E-11	
ga 74	0.000E+00	1.044E-08	1.054E-08	1.054E-08	1.054E-08	1.054E-08	1.054E-08	1.054E-08	1.053E-08	1.053E-08	1.053E-08	
ge 74	1.258E-03	1.281E-03	1.303E-03	1.326E-03	1.349E-03	1.372E-03	1.394E-03	1.417E-03	1.440E-03	1.463E-03	1.486E-03	
ga 75	0.000E+00	2.476E-08	2.494E-08	2.489E-08	2.484E-08	2.479E-08	2.474E-08	2.470E-08	2.465E-08	2.460E-08	2.455E-08	
ge 75	0.000E+00	9.831E-07	9.902E-07	9.883E-07	9.865E-07	9.846E-07	9.827E-07	9.808E-07	9.789E-07	9.769E-07	9.749E-07	
ge 75m	0.000E+00	5.089E-10	5.128E-10	5.121E-10	5.114E-10	5.107E-10	5.099E-10	5.092E-10	5.084E-10	5.076E-10	5.068E-10	
as 75	1.200E-02	1.219E-02	1.238E-02	1.257E-02	1.276E-02	1.294E-02	1.313E-02	1.332E-02	1.350E-02	1.369E-02	1.388E-02	
ga 76	0.000E+00	1.743E-08	1.753E-08	1.746E-08	1.740E-08	1.733E-08	1.727E-08	1.721E-08	1.714E-08	1.708E-08	1.702E-08	
ge 76	3.661E-02	3.716E-02	3.771E-02	3.826E-02	3.881E-02	3.935E-02	3.990E-02	4.044E-02	4.098E-02	4.152E-02	4.205E-02	
as 76	2.793E-15	6.907E-07	7.098E-07	7.226E-07	7.354E-07	7.483E-07	7.612E-07	7.741E-07	7.871E-07	8.000E-07	8.130E-07	
se 76	1.989E-04	2.049E-04	2.118E-04	2.188E-04	2.259E-04	2.332E-04	2.406E-04	2.480E-04	2.557E-04	2.634E-04	2.712E-04	
ga 77	0.000E+00	1.490E-08	1.499E-08	1.495E-08	1.490E-08	1.486E-08	1.482E-08	1.477E-08	1.473E-08	1.469E-08	1.464E-08	
ge 77	3.614E-25	1.783E-05	1.796E-05	1.792E-05	1.788E-05	1.784E-05	1.780E-05	1.776E-05	1.772E-05	1.768E-05	1.764E-05	
ge 77m	0.000E+00	6.126E-08	6.164E-08	6.146E-08	6.128E-08	6.111E-08	6.093E-08	6.075E-08	6.058E-08	6.040E-08	6.022E-08	
as 77	4.910E-10	1.895E-04	1.910E-04	1.905E-04	1.900E-04	1.895E-04	1.889E-04	1.884E-04	1.879E-04	1.874E-04	1.869E-04	
se 77	8.374E-02	8.478E-02	8.603E-02	8.728E-02	8.853E-02	8.977E-02	9.100E-02	9.223E-02	9.345E-02	9.467E-02	9.588E-02	
se 77m	1.961E-16	7.757E-11	7.822E-11	7.809E-11	7.796E-11	7.783E-11	7.770E-11	7.757E-11	7.745E-11	7.732E-11	7.719E-11	
ga 78	0.000E+00	1.303E-08	1.313E-08	1.311E-08	1.309E-08	1.307E-08	1.305E-08	1.303E-08	1.301E-08	1.298E-08	1.296E-08	
ge 78	0.000E+00	2.299E-05	2.319E-05	2.318E-05	2.316E-05	2.315E-05	2.313E-05	2.312E-05	2.310E-05	2.308E-05	2.306E-05	
as 78	0.000E+00	2.402E-05	2.423E-05	2.421E-05	2.420E-05	2.419E-05	2.417E-05	2.416E-05	2.414E-05	2.412E-05	2.410E-05	
se 78	2.616E-01	2.660E-01	2.704E-01	2.749E-01	2.794E-01	2.838E-01	2.883E-01	2.927E-01	2.972E-01	3.016E-01	3.061E-01	
ga 79	0.000E+00	7.726E-09	7.759E-09	7.721E-09	7.684E-09	7.648E-09	7.611E-09	7.575E-09	7.540E-09	7.504E-09	7.469E-09	
ge 79	0.000E+00	1.451E-07	1.462E-07	1.459E-07	1.456E-07	1.454E-07	1.451E-07	1.449E-07	1.446E-07	1.444E-07	1.441E-07	
as 79	0.000E+00	4.465E-06	4.499E-06	4.492E-06	4.485E-06	4.478E-06	4.471E-06	4.464E-06	4.457E-06	4.450E-06	4.443E-06	
se 79	5.044E-01	5.125E-01	5.207E-01	5.288E-01	5.370E-01	5.451E-01	5.532E-01	5.613E-01	5.694E-01	5.775E-01	5.855E-01	

se 79m	0.000E+00	1.920E-06	1.935E-06	1.932E-06	1.929E-06	1.926E-06	1.923E-06	1.920E-06	1.917E-06	1.914E-06	1.911E-06
br 79	1.559E-05	1.605E-05	1.652E-05	1.700E-05	1.748E-05	1.797E-05	1.847E-05	1.897E-05	1.949E-05	2.000E-05	2.053E-05
br 79m	0.000E+00	1.421E-14	1.442E-14	1.449E-14	1.457E-14	1.464E-14	1.471E-14	1.478E-14	1.485E-14	1.492E-14	1.498E-14
kr 79	1.574E-20	2.966E-14	3.043E-14	3.091E-14	3.139E-14	3.188E-14	3.237E-14	3.286E-14	3.335E-14	3.385E-14	3.434E-14
ga 80	0.000E+00	3.492E-09	3.518E-09	3.512E-09	3.506E-09	3.501E-09	3.495E-09	3.489E-09	3.484E-09	3.478E-09	3.472E-09
ge 80	0.000E+00	5.578E-07	5.610E-07	5.591E-07	5.573E-07	5.555E-07	5.537E-07	5.518E-07	5.500E-07	5.482E-07	5.463E-07
as 80	0.000E+00	3.347E-07	3.369E-07	3.360E-07	3.351E-07	3.342E-07	3.333E-07	3.324E-07	3.315E-07	3.306E-07	3.297E-07
se 80	1.411E+00	1.433E+00	1.455E+00	1.477E+00	1.499E+00	1.521E+00	1.542E+00	1.564E+00	1.586E+00	1.607E+00	1.629E+00
br 80	0.000E+00	1.684E-10	1.716E-10	1.732E-10	1.749E-10	1.766E-10	1.782E-10	1.799E-10	1.815E-10	1.832E-10	1.848E-10
br 80m	0.000E+00	1.723E-09	1.752E-09	1.765E-09	1.779E-09	1.791E-09	1.804E-09	1.817E-09	1.829E-09	1.841E-09	1.853E-09

case 3 fission products page 60
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
kr 80	5.511E-06	5.648E-06	5.788E-06	5.930E-06	6.073E-06	6.218E-06	6.364E-06	6.511E-06	6.659E-06	6.808E-06	6.959E-06
ga 81	0.000E+00	1.647E-09	1.658E-09	1.654E-09	1.651E-09	1.647E-09	1.644E-09	1.640E-09	1.637E-09	1.633E-09	1.630E-09
ge 81	0.000E+00	1.537E-07	1.546E-07	1.540E-07	1.535E-07	1.530E-07	1.525E-07	1.519E-07	1.514E-07	1.509E-07	1.504E-07
as 81	0.000E+00	1.073E-06	1.080E-06	1.077E-06	1.075E-06	1.072E-06	1.070E-06	1.067E-06	1.065E-06	1.062E-06	1.060E-06
se 81	0.000E+00	3.757E-05	3.782E-05	3.774E-05	3.765E-05	3.757E-05	3.748E-05	3.740E-05	3.731E-05	3.723E-05	3.714E-05
se 81m	0.000E+00	8.372E-06	8.438E-06	8.427E-06	8.416E-06	8.405E-06	8.394E-06	8.382E-06	8.371E-06	8.359E-06	8.346E-06
br 81	2.106E+00	2.138E+00	2.171E+00	2.203E+00	2.236E+00	2.268E+00	2.300E+00	2.332E+00	2.364E+00	2.396E+00	2.428E+00
kr 81	2.478E-07	2.563E-07	2.650E-07	2.739E-07	2.830E-07	2.922E-07	3.017E-07	3.114E-07	3.212E-07	3.313E-07	3.416E-07
kr 81m	0.000E+00	4.326E-14	4.482E-14	4.600E-14	4.720E-14	4.841E-14	4.965E-14	5.089E-14	5.216E-14	5.344E-14	5.473E-14
ga 82	0.000E+00	5.146E-10	5.157E-10	5.121E-10	5.086E-10	5.051E-10	5.017E-10	4.983E-10	4.949E-10	4.916E-10	4.883E-10
ge 82	0.000E+00	8.997E-08	9.039E-08	8.998E-08	8.959E-08	8.920E-08	8.881E-08	8.843E-08	8.805E-08	8.768E-08	8.731E-08
as 82	0.000E+00	6.112E-07	6.142E-07	6.117E-07	6.092E-07	6.068E-07	6.043E-07	6.019E-07	5.995E-07	5.971E-07	5.948E-07
as 82m	0.000E+00	1.690E-07	1.699E-07	1.693E-07	1.687E-07	1.681E-07	1.675E-07	1.669E-07	1.664E-07	1.658E-07	1.652E-07
se 82	3.416E+00	3.467E+00	3.519E+00	3.570E+00	3.621E+00	3.672E+00	3.722E+00	3.773E+00	3.823E+00	3.873E+00	3.923E+00
br 82	1.003E-10	1.682E-04	1.725E-04	1.752E-04	1.779E-04	1.806E-04	1.833E-04	1.860E-04	1.886E-04	1.913E-04	1.940E-04
br 82m	0.000E+00	3.917E-07	4.021E-07	4.090E-07	4.158E-07	4.227E-07	4.296E-07	4.365E-07	4.434E-07	4.503E-07	4.572E-07
kr 82	4.004E-02	4.112E-02	4.238E-02	4.367E-02	4.498E-02	4.630E-02	4.764E-02	4.900E-02	5.038E-02	5.178E-02	5.320E-02
ga 83	0.000E+00	3.184E-11	3.211E-11	3.210E-11	3.208E-11	3.207E-11	3.207E-11	3.206E-11	3.205E-11	3.205E-11	3.205E-11
ge 83	0.000E+00	1.678E-08	1.687E-08	1.682E-08	1.677E-08	1.671E-08	1.666E-08	1.661E-08	1.657E-08	1.652E-08	1.647E-08
as 83	0.000E+00	6.910E-07	6.942E-07	6.910E-07	6.880E-07	6.850E-07	6.820E-07	6.791E-07	6.761E-07	6.732E-07	6.703E-07
se 83	0.000E+00	5.257E-05	5.288E-05	5.271E-05	5.254E-05	5.238E-05	5.221E-05	5.205E-05	5.188E-05	5.172E-05	5.156E-05
se 83m	0.000E+00	2.905E-06	2.919E-06	2.906E-06	2.894E-06	2.882E-06	2.870E-06	2.858E-06	2.846E-06	2.835E-06	2.823E-06
br 83	0.000E+00	7.177E-04	7.215E-04	7.187E-04	7.160E-04	7.133E-04	7.107E-04	7.080E-04	7.053E-04	7.027E-04	7.001E-04
kr 83	4.809E+00	4.865E+00	4.922E+00	4.978E+00	5.034E+00	5.089E+00	5.144E+00	5.197E+00	5.251E+00	5.303E+00	5.355E+00
kr 83m	0.000E+00	5.472E-04	5.501E-04	5.480E-04	5.459E-04	5.439E-04	5.418E-04	5.398E-04	5.378E-04	5.358E-04	5.338E-04
ga 84	0.000E+00	8.397E-11	8.375E-11	8.276E-11	8.178E-11	8.081E-11	7.985E-11	7.889E-11	7.795E-11	7.700E-11	7.607E-11
ge 84	0.000E+00	6.988E-09	7.032E-09	7.012E-09	6.993E-09	6.974E-09	6.956E-09	6.938E-09	6.921E-09	6.904E-09	6.887E-09
as 84	0.000E+00	2.108E-07	2.118E-07	2.110E-07	2.101E-07	2.093E-07	2.085E-07	2.077E-07	2.069E-07	2.061E-07	2.053E-07
se 84	0.000E+00	2.923E-05	2.937E-05	2.924E-05	2.911E-05	2.899E-05	2.886E-05	2.874E-05	2.862E-05	2.849E-05	2.837E-05
br 84	0.000E+00	2.986E-04	3.000E-04	2.986E-04	2.974E-04	2.961E-04	2.948E-04	2.936E-04	2.923E-04	2.911E-04	2.898E-04
br 84m	0.000E+00	1.516E-06	1.525E-06	1.521E-06	1.517E-06	1.512E-06	1.508E-06	1.503E-06	1.499E-06	1.494E-06	1.490E-06

kr 84	1.175E+01	1.193E+01	1.211E+01	1.230E+01	1.248E+01	1.266E+01	1.285E+01	1.303E+01	1.321E+01	1.339E+01	1.358E+01
ga 85	0.000E+00	1.438E-13	1.452E-13	1.454E-13	1.455E-13	1.457E-13	1.458E-13	1.460E-13	1.461E-13	1.463E-13	1.465E-13
ge 85	0.000E+00	2.536E-10	2.554E-10	2.549E-10	2.543E-10	2.538E-10	2.533E-10	2.528E-10	2.524E-10	2.519E-10	2.515E-10
as 85	0.000E+00	4.540E-08	4.557E-08	4.533E-08	4.509E-08	4.486E-08	4.463E-08	4.441E-08	4.419E-08	4.397E-08	4.375E-08
se 85	0.000E+00	2.309E-06	2.318E-06	2.306E-06	2.294E-06	2.282E-06	2.270E-06	2.259E-06	2.247E-06	2.236E-06	2.224E-06
se 85m	0.000E+00	1.217E-06	1.222E-06	1.215E-06	1.208E-06	1.202E-06	1.196E-06	1.189E-06	1.183E-06	1.177E-06	1.171E-06
br 85	0.000E+00	3.044E-05	3.056E-05	3.041E-05	3.026E-05	3.011E-05	2.996E-05	2.982E-05	2.967E-05	2.953E-05	2.938E-05
kr 85	2.419E+00	2.449E+00	2.480E+00	2.511E+00	2.542E+00	2.572E+00	2.602E+00	2.632E+00	2.661E+00	2.691E+00	2.720E+00
kr 85m	0.000E+00	2.855E-03	2.867E-03	2.853E-03	2.839E-03	2.825E-03	2.811E-03	2.798E-03	2.784E-03	2.771E-03	2.757E-03
rb 85	9.942E+00	1.008E+01	1.023E+01	1.037E+01	1.052E+01	1.066E+01	1.080E+01	1.094E+01	1.109E+01	1.123E+01	1.137E+01
ge 86	0.000E+00	5.365E-11	5.404E-11	5.393E-11	5.384E-11	5.374E-11	5.365E-11	5.356E-11	5.348E-11	5.339E-11	5.331E-11
as 86	0.000E+00	1.143E-08	1.147E-08	1.139E-08	1.132E-08	1.126E-08	1.119E-08	1.112E-08	1.105E-08	1.099E-08	1.092E-08
se 86	0.000E+00	2.697E-06	2.706E-06	2.690E-06	2.674E-06	2.659E-06	2.644E-06	2.629E-06	2.614E-06	2.599E-06	2.584E-06
br 86	0.000E+00	1.199E-05	1.204E-05	1.197E-05	1.190E-05	1.184E-05	1.178E-05	1.171E-05	1.165E-05	1.159E-05	1.153E-05
br 86m	0.000E+00	2.284E-06	2.296E-06	2.287E-06	2.278E-06	2.269E-06	2.261E-06	2.252E-06	2.244E-06	2.235E-06	2.227E-06
kr 86	1.981E+01	2.009E+01	2.037E+01	2.065E+01	2.092E+01	2.120E+01	2.147E+01	2.174E+01	2.202E+01	2.228E+01	2.255E+01
rb 86	4.450E-04	7.480E-04	9.261E-04	1.032E-03	1.098E-03	1.143E-03	1.176E-03	1.203E-03	1.226E-03	1.248E-03	1.269E-03
rb 86m	0.000E+00	3.350E-09	3.440E-09	3.498E-09	3.557E-09	3.616E-09	3.675E-09	3.734E-09	3.793E-09	3.852E-09	3.911E-09
sr 86	1.969E-02	2.006E-02	2.058E-02	2.118E-02	2.182E-02	2.251E-02	2.321E-02	2.394E-02	2.467E-02	2.543E-02	2.619E-02

case 3 fission products page 61
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
ge 87	0.000E+00	2.503E-10	2.496E-10	2.466E-10	2.436E-10	2.407E-10	2.377E-10	2.348E-10	2.320E-10	2.291E-10	2.263E-10
as 87	0.000E+00	2.241E-09	2.240E-09	2.220E-09	2.199E-09	2.179E-09	2.159E-09	2.139E-09	2.120E-09	2.100E-09	2.081E-09
se 87	0.000E+00	5.840E-07	5.858E-07	5.821E-07	5.786E-07	5.751E-07	5.716E-07	5.681E-07	5.647E-07	5.613E-07	5.580E-07
br 87	0.000E+00	1.598E-05	1.604E-05	1.595E-05	1.586E-05	1.578E-05	1.569E-05	1.561E-05	1.553E-05	1.544E-05	1.536E-05
kr 87	0.000E+00	1.665E-03	1.672E-03	1.663E-03	1.654E-03	1.646E-03	1.637E-03	1.629E-03	1.621E-03	1.612E-03	1.604E-03
rb 87	2.586E+01	2.622E+01	2.658E+01	2.695E+01	2.731E+01	2.766E+01	2.802E+01	2.837E+01	2.873E+01	2.908E+01	2.942E+01
sr 87	1.043E-04	1.075E-04	1.107E-04	1.140E-04	1.174E-04	1.209E-04	1.244E-04	1.280E-04	1.317E-04	1.355E-04	1.393E-04
sr 87m	0.000E+00	2.331E-08	2.412E-08	2.481E-08	2.556E-08	2.635E-08	2.717E-08	2.801E-08	2.888E-08	2.976E-08	3.066E-08
ge 88	0.000E+00	4.269E-13	4.276E-13	4.244E-13	4.212E-13	4.181E-13	4.151E-13	4.120E-13	4.090E-13	4.060E-13	4.030E-13
as 88	0.000E+00	4.511E-10	4.503E-10	4.454E-10	4.406E-10	4.358E-10	4.310E-10	4.263E-10	4.216E-10	4.170E-10	4.124E-10
se 88	0.000E+00	8.455E-08	8.489E-08	8.444E-08	8.401E-08	8.359E-08	8.317E-08	8.276E-08	8.235E-08	8.194E-08	8.154E-08
br 88	0.000E+00	4.634E-06	4.648E-06	4.619E-06	4.591E-06	4.563E-06	4.536E-06	4.509E-06	4.482E-06	4.455E-06	4.428E-06

kr 88	0.000E+00	5.221E-03	5.240E-03	5.211E-03	5.183E-03	5.155E-03	5.127E-03	5.100E-03	5.072E-03	5.045E-03	5.018E-03	
rb 88	0.000E+00	5.584E-04	5.605E-04	5.574E-04	5.544E-04	5.514E-04	5.484E-04	5.455E-04	5.426E-04	5.397E-04	5.368E-04	
sr 88	3.704E+01	3.755E+01	3.807E+01	3.859E+01	3.910E+01	3.961E+01	4.012E+01	4.062E+01	4.112E+01	4.162E+01	4.212E+01	
as 89	0.000E+00	7.304E-12	7.368E-12	7.366E-12	7.364E-12	7.362E-12	7.361E-12	7.360E-12	7.359E-12	7.358E-12	7.358E-12	
sc 89	0.000E+00	8.213E-09	8.246E-09	8.204E-09	8.162E-09	8.122E-09	8.081E-09	8.042E-09	8.002E-09	7.963E-09	7.925E-09	
br 89	0.000E+00	8.601E-07	8.632E-07	8.584E-07	8.538E-07	8.491E-07	8.445E-07	8.400E-07	8.355E-07	8.310E-07	8.266E-07	
kr 89	0.000E+00	1.223E-04	1.227E-04	1.219E-04	1.212E-04	1.205E-04	1.197E-04	1.190E-04	1.183E-04	1.176E-04	1.169E-04	
rb 89	0.000E+00	6.311E-04	6.333E-04	6.296E-04	6.260E-04	6.225E-04	6.189E-04	6.154E-04	6.120E-04	6.085E-04	6.051E-04	
sr 89	2.741E+00	2.803E+00	2.855E+00	2.893E+00	2.920E+00	2.938E+00	2.949E+00	2.954E+00	2.955E+00	2.952E+00	2.947E+00	
y 89	4.694E+01	4.756E+01	4.820E+01	4.884E+01	4.950E+01	5.015E+01	5.081E+01	5.148E+01	5.214E+01	5.280E+01	5.346E+01	
y 89m	9.373E-10	9.642E-10	9.821E-10	9.951E-10	1.004E-09	1.010E-09	1.014E-09	1.016E-09	1.016E-09	1.015E-09	1.013E-09	
as 90	0.000E+00	5.370E-14	5.428E-14	5.436E-14	5.444E-14	5.453E-14	5.462E-14	5.471E-14	5.480E-14	5.489E-14	5.499E-14	
sc 90	0.000E+00	1.909E-09	1.918E-09	1.910E-09	1.902E-09	1.895E-09	1.887E-09	1.880E-09	1.872E-09	1.865E-09	1.858E-09	
br 90	0.000E+00	2.075E-07	2.084E-07	2.074E-07	2.065E-07	2.055E-07	2.046E-07	2.036E-07	2.027E-07	2.018E-07	2.008E-07	
kr 90	0.000E+00	2.247E-05	2.253E-05	2.239E-05	2.225E-05	2.211E-05	2.197E-05	2.184E-05	2.170E-05	2.156E-05	2.143E-05	
rb 90	0.000E+00	9.842E-05	9.871E-05	9.810E-05	9.751E-05	9.692E-05	9.634E-05	9.576E-05	9.518E-05	9.461E-05	9.404E-05	
rb 90m	0.000E+00	5.264E-05	5.288E-05	5.264E-05	5.240E-05	5.216E-05	5.193E-05	5.169E-05	5.146E-05	5.122E-05	5.099E-05	
sr 90	5.834E+01	5.911E+01	5.989E+01	6.066E+01	6.142E+01	6.218E+01	6.293E+01	6.368E+01	6.442E+01	6.516E+01	6.589E+01	
y 90	1.517E-02	1.567E-02	1.589E-02	1.610E-02	1.630E-02	1.650E-02	1.671E-02	1.691E-02	1.711E-02	1.731E-02	1.750E-02	
y 90m	0.000E+00	1.823E-08	1.870E-08	1.900E-08	1.931E-08	1.962E-08	1.994E-08	2.026E-08	2.058E-08	2.090E-08	2.122E-08	
zr 90	2.354E+00	2.419E+00	2.487E+00	2.555E+00	2.624E+00	2.693E+00	2.764E+00	2.836E+00	2.908E+00	2.981E+00	3.055E+00	
zr 90m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
se 91	0.000E+00	1.228E-10	1.237E-10	1.235E-10	1.233E-10	1.231E-10	1.229E-10	1.227E-10	1.225E-10	1.223E-10	1.221E-10	
br 91	0.000E+00	2.152E-08	2.158E-08	2.144E-08	2.130E-08	2.117E-08	2.104E-08	2.091E-08	2.078E-08	2.066E-08	2.053E-08	
kr 91	0.000E+00	4.130E-06	4.142E-06	4.115E-06	4.090E-06	4.064E-06	4.039E-06	4.014E-06	3.990E-06	3.965E-06	3.941E-06	
rb 91	0.000E+00	5.019E-05	5.038E-05	5.011E-05	4.986E-05	4.960E-05	4.934E-05	4.909E-05	4.884E-05	4.859E-05	4.834E-05	
sr 91	0.000E+00	3.164E-02	3.177E-02	3.161E-02	3.146E-02	3.131E-02	3.116E-02	3.101E-02	3.086E-02	3.072E-02	3.057E-02	
y 91	4.433E+00	4.447E+00	4.490E+00	4.522E+00	4.543E+00	4.557E+00	4.565E+00	4.567E+00	4.565E+00	4.560E+00	4.552E+00	
y 91m	0.000E+00	1.597E-03	1.604E-03	1.596E-03	1.588E-03	1.581E-03	1.573E-03	1.566E-03	1.558E-03	1.551E-03	1.543E-03	
zr 91	5.961E+01	6.047E+01	6.133E+01	6.221E+01	6.309E+01	6.397E+01	6.486E+01	6.574E+01	6.663E+01	6.751E+01	6.839E+01	
nb 91	9.860E-11	1.008E-10	1.030E-10	1.052E-10	1.074E-10	1.096E-10	1.118E-10	1.141E-10	1.163E-10	1.186E-10	1.208E-10	
sc 92	0.000E+00	6.356E-12	6.413E-12	6.411E-12	6.410E-12	6.410E-12	6.409E-12	6.409E-12	6.409E-12	6.409E-12	6.409E-12	
br 92	0.000E+00	2.246E-09	2.255E-09	2.244E-09	2.233E-09	2.222E-09	2.212E-09	2.201E-09	2.191E-09	2.181E-09	2.170E-09	
kr 92	0.000E+00	4.794E-07	4.809E-07	4.781E-07	4.754E-07	4.727E-07	4.700E-07	4.673E-07	4.647E-07	4.621E-07	4.595E-07	
rb 92	0.000E+00	3.454E-06	3.468E-06	3.451E-06	3.435E-06	3.419E-06	3.402E-06	3.386E-06	3.370E-06	3.355E-06	3.339E-06	
sr 92	0.000E+00	9.665E-03	9.714E-03	9.674E-03	9.635E-03	9.597E-03	9.559E-03	9.521E-03	9.483E-03	9.446E-03	9.408E-03	
y 92	0.000E+00	1.271E-02	1.278E-02	1.273E-02	1.267E-02	1.262E-02	1.257E-02	1.252E-02	1.247E-02	1.242E-02	1.238E-02	
zr 92	6.771E+01	6.868E+01	6.967E+01	7.066E+01	7.165E+01	7.263E+01	7.361E+01	7.458E+01	7.555E+01	7.652E+01	7.748E+01	

case 3 fission products page 62
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
nb 92	1.211E-08	1.237E-08	1.263E-08	1.290E-08	1.317E-08	1.344E-08	1.371E-08	1.398E-08	1.425E-08	1.452E-08	1.480E-08
se 93	0.000E+00	2.772E-14	2.804E-14	2.811E-14	2.818E-14	2.825E-14	2.832E-14	2.839E-14	2.846E-14	2.853E-14	2.860E-14
br 93	0.000E+00	3.077E-10	3.119E-10	3.133E-10	3.147E-10	3.161E-10	3.175E-10	3.189E-10	3.203E-10	3.218E-10	3.232E-10
kr 93	0.000E+00	1.150E-07	1.154E-07	1.148E-07	1.143E-07	1.137E-07	1.131E-07	1.126E-07	1.120E-07	1.115E-07	1.109E-07
rb 93	0.000E+00	3.661E-06	3.682E-06	3.669E-06	3.656E-06	3.643E-06	3.631E-06	3.618E-06	3.606E-06	3.594E-06	3.582E-06
sr 93	0.000E+00	5.026E-04	5.055E-04	5.038E-04	5.022E-04	5.006E-04	4.990E-04	4.974E-04	4.959E-04	4.943E-04	4.927E-04
y 93	0.000E+00	2.786E-02	2.803E-02	2.794E-02	2.785E-02	2.776E-02	2.767E-02	2.759E-02	2.750E-02	2.742E-02	2.733E-02
zr 93	4.979E+01	5.050E+01	5.124E+01	5.198E+01	5.271E+01	5.345E+01	5.418E+01	5.491E+01	5.563E+01	5.636E+01	5.708E+01
nb 93	2.570E-06	2.656E-06	2.745E-06	2.836E-06	2.928E-06	3.023E-06	3.119E-06	3.218E-06	3.319E-06	3.422E-06	3.527E-06
nb 93m	3.362E-05	3.458E-05	3.555E-05	3.654E-05	3.754E-05	3.855E-05	3.958E-05	4.061E-05	4.166E-05	4.273E-05	4.380E-05
br 94	0.000E+00	9.945E-12	1.005E-11	1.006E-11	1.007E-11	1.008E-11	1.010E-11	1.011E-11	1.012E-11	1.014E-11	1.015E-11
kr 94	0.000E+00	8.667E-09	8.710E-09	8.674E-09	8.639E-09	8.604E-09	8.571E-09	8.537E-09	8.504E-09	8.472E-09	8.440E-09
rb 94	0.000E+00	9.032E-07	9.086E-07	9.058E-07	9.032E-07	9.005E-07	8.979E-07	8.954E-07	8.928E-07	8.903E-07	8.879E-07
sr 94	0.000E+00	8.538E-05	8.592E-05	8.567E-05	8.543E-05	8.520E-05	8.497E-05	8.473E-05	8.450E-05	8.427E-05	8.405E-05
y 94	0.000E+00	1.377E-03	1.386E-03	1.382E-03	1.379E-03	1.375E-03	1.372E-03	1.368E-03	1.365E-03	1.361E-03	1.358E-03
zr 94	7.993E+01	8.116E+01	8.240E+01	8.364E+01	8.488E+01	8.611E+01	8.734E+01	8.856E+01	8.979E+01	9.101E+01	9.223E+01
nb 94	4.604E-05	4.698E-05	4.793E-05	4.889E-05	4.984E-05	5.080E-05	5.176E-05	5.273E-05	5.369E-05	5.466E-05	5.563E-05
nb 94m	0.000E+00	1.557E-10	1.578E-10	1.584E-10	1.590E-10	1.596E-10	1.602E-10	1.608E-10	1.613E-10	1.619E-10	1.624E-10
br 95	0.000E+00	1.086E-13	1.098E-13	1.101E-13	1.103E-13	1.106E-13	1.109E-13	1.111E-13	1.114E-13	1.117E-13	1.120E-13
kr 95	0.000E+00	3.040E-09	3.073E-09	3.078E-09	3.084E-09	3.089E-09	3.095E-09	3.101E-09	3.107E-09	3.114E-09	3.120E-09
rb 95	0.000E+00	6.274E-08	6.315E-08	6.298E-08	6.282E-08	6.267E-08	6.252E-08	6.237E-08	6.222E-08	6.207E-08	6.193E-08
sr 95	0.000E+00	2.578E-05	2.594E-05	2.587E-05	2.580E-05	2.573E-05	2.566E-05	2.559E-05	2.552E-05	2.546E-05	2.539E-05
y 95	0.000E+00	8.120E-04	8.176E-04	8.157E-04	8.139E-04	8.122E-04	8.104E-04	8.087E-04	8.070E-04	8.052E-04	8.035E-04
zr 95	6.892E+00	6.951E+00	7.008E+00	7.053E+00	7.089E+00	7.116E+00	7.136E+00	7.150E+00	7.160E+00	7.165E+00	7.167E+00
nb 95	4.801E+00	4.517E+00	4.320E+00	4.186E+00	4.095E+00	4.034E+00	3.993E+00	3.967E+00	3.949E+00	3.938E+00	3.930E+00
nb 95m	4.571E-03	4.355E-03	4.381E-03	4.411E-03	4.435E-03	4.453E-03	4.467E-03	4.477E-03	4.484E-03	4.488E-03	4.490E-03
mo 95	6.905E+01	7.049E+01	7.185E+01	7.315E+01	7.441E+01	7.565E+01	7.687E+01	7.808E+01	7.928E+01	8.047E+01	8.166E+01
br 96	0.000E+00	2.038E-14	2.062E-14	2.066E-14	2.070E-14	2.075E-14	2.080E-14	2.084E-14	2.089E-14	2.094E-14	2.099E-14
kr 96	0.000E+00	1.998E-10	2.017E-10	2.018E-10	2.019E-10	2.020E-10	2.021E-10	2.023E-10	2.024E-10	2.025E-10	2.027E-10
rb 96	0.000E+00	8.179E-09	8.230E-09	8.207E-09	8.185E-09	8.163E-09	8.142E-09	8.122E-09	8.102E-09	8.082E-09	8.063E-09
sr 96	0.000E+00	8.047E-07	8.099E-07	8.077E-07	8.056E-07	8.036E-07	8.016E-07	7.996E-07	7.976E-07	7.957E-07	7.938E-07

y 96	0.000E+00	7.397E-06	7.450E-06	7.435E-06	7.422E-06	7.408E-06	7.394E-06	7.381E-06	7.368E-06	7.354E-06	7.341E-06
zr 96	8.322E+01	8.454E+01	8.586E+01	8.718E+01	8.850E+01	8.982E+01	9.114E+01	9.245E+01	9.376E+01	9.507E+01	9.637E+01
nb 96	5.255E-14	1.435E-04	1.416E-04	1.397E-04	1.386E-04	1.381E-04	1.381E-04	1.384E-04	1.388E-04	1.394E-04	1.400E-04
mo 96	2.099E+00	2.177E+00	2.258E+00	2.341E+00	2.425E+00	2.511E+00	2.599E+00	2.688E+00	2.779E+00	2.871E+00	2.965E+00
kr 97	0.000E+00	9.238E-13	9.344E-13	9.365E-13	9.387E-13	9.409E-13	9.432E-13	9.454E-13	9.477E-13	9.500E-13	9.523E-13
rb 97	0.000E+00	1.968E-09	1.974E-09	1.961E-09	1.950E-09	1.938E-09	1.927E-09	1.915E-09	1.904E-09	1.893E-09	1.882E-09
sr 97	0.000E+00	1.625E-07	1.635E-07	1.630E-07	1.625E-07	1.621E-07	1.616E-07	1.612E-07	1.607E-07	1.603E-07	1.599E-07
y 97	0.000E+00	3.632E-06	3.659E-06	3.652E-06	3.646E-06	3.639E-06	3.633E-06	3.627E-06	3.621E-06	3.615E-06	3.609E-06
zr 97	5.852E-15	7.832E-02	7.895E-02	7.887E-02	7.879E-02	7.871E-02	7.863E-02	7.855E-02	7.847E-02	7.839E-02	7.832E-02
nb 97	4.484E-16	5.609E-03	5.655E-03	5.648E-03	5.643E-03	5.638E-03	5.632E-03	5.627E-03	5.621E-03	5.616E-03	5.610E-03
nb 97m	5.476E-18	7.333E-05	7.392E-05	7.384E-05	7.377E-05	7.369E-05	7.362E-05	7.355E-05	7.347E-05	7.340E-05	7.333E-05
mo 97	7.823E+01	7.941E+01	8.068E+01	8.195E+01	8.322E+01	8.449E+01	8.576E+01	8.702E+01	8.829E+01	8.955E+01	9.081E+01
kr 98	0.000E+00	5.329E-13	5.392E-13	5.406E-13	5.420E-13	5.435E-13	5.449E-13	5.464E-13	5.479E-13	5.493E-13	5.508E-13
rb 98	0.000E+00	1.303E-10	1.317E-10	1.319E-10	1.321E-10	1.324E-10	1.326E-10	1.328E-10	1.331E-10	1.333E-10	1.335E-10
sr 98	0.000E+00	1.035E-07	1.043E-07	1.041E-07	1.039E-07	1.038E-07	1.036E-07	1.035E-07	1.033E-07	1.032E-07	1.031E-07
y 98	0.000E+00	4.970E-07	5.006E-07	4.997E-07	4.989E-07	4.981E-07	4.973E-07	4.965E-07	4.957E-07	4.950E-07	4.942E-07
zr 98	0.000E+00	4.235E-05	4.271E-05	4.267E-05	4.265E-05	4.262E-05	4.259E-05	4.256E-05	4.253E-05	4.250E-05	4.247E-05
nb 98	0.000E+00	3.977E-06	4.010E-06	4.007E-06	4.004E-06	4.002E-06	3.999E-06	3.997E-06	3.994E-06	3.991E-06	3.989E-06
nb 98m	0.000E+00	3.341E-05	3.384E-05	3.395E-05	3.407E-05	3.419E-05	3.430E-05	3.441E-05	3.452E-05	3.462E-05	3.473E-05

case 3 fission products page 63
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
mo 98	8.406E+01	8.545E+01	8.685E+01	8.825E+01	8.965E+01	9.105E+01	9.244E+01	9.384E+01	9.524E+01	9.663E+01	9.803E+01
tc 98	3.140E-04	3.250E-04	3.364E-04	3.480E-04	3.598E-04	3.718E-04	3.840E-04	3.964E-04	4.090E-04	4.218E-04	4.348E-04
rb 99	0.000E+00	1.998E-12	2.021E-12	2.026E-12	2.030E-12	2.035E-12	2.040E-12	2.045E-12	2.050E-12	2.055E-12	2.060E-12
sr 99	0.000E+00	1.701E-08	1.709E-08	1.701E-08	1.693E-08	1.685E-08	1.678E-08	1.670E-08	1.663E-08	1.656E-08	1.648E-08
y 99	0.000E+00	7.265E-07	7.316E-07	7.300E-07	7.286E-07	7.272E-07	7.258E-07	7.244E-07	7.231E-07	7.218E-07	7.206E-07
zr 99	0.000E+00	2.873E-06	2.897E-06	2.896E-06	2.894E-06	2.893E-06	2.892E-06	2.890E-06	2.889E-06	2.888E-06	2.886E-06
nb 99	0.000E+00	1.328E-05	1.340E-05	1.339E-05	1.338E-05	1.338E-05	1.337E-05	1.336E-05	1.336E-05	1.335E-05	1.335E-05
nb 99m	0.000E+00	9.506E-05	9.590E-05	9.587E-05	9.584E-05	9.582E-05	9.580E-05	9.578E-05	9.576E-05	9.573E-05	9.571E-05
mo 99	1.923E-04	3.531E-01	3.618E-01	3.618E-01	3.616E-01	3.615E-01	3.614E-01	3.613E-01	3.611E-01	3.610E-01	3.609E-01
tc 99	8.409E+01	8.503E+01	8.635E+01	8.767E+01	8.899E+01	9.030E+01	9.162E+01	9.292E+01	9.422E+01	9.552E+01	9.682E+01
tc 99m	1.698E-05	2.843E-02	2.917E-02	2.917E-02	2.916E-02	2.915E-02	2.915E-02	2.914E-02	2.913E-02	2.912E-02	2.911E-02
ru 99	3.246E-03	3.292E-03	3.351E-03	3.410E-03	3.469E-03	3.528E-03	3.587E-03	3.647E-03	3.706E-03	3.766E-03	3.825E-03

rb100	0.000E+00	1.031E-12	1.043E-12	1.046E-12	1.049E-12	1.052E-12	1.056E-12	1.059E-12	1.062E-12	1.065E-12	1.068E-12
sr100	0.000E+00	1.648E-09	1.666E-09	1.669E-09	1.673E-09	1.676E-09	1.679E-09	1.683E-09	1.687E-09	1.690E-09	1.694E-09
y100	0.000E+00	1.168E-07	1.179E-07	1.180E-07	1.181E-07	1.182E-07	1.183E-07	1.184E-07	1.186E-07	1.187E-07	1.188E-07
zr100	0.000E+00	9.650E-06	9.727E-06	9.716E-06	9.707E-06	9.697E-06	9.688E-06	9.679E-06	9.670E-06	9.661E-06	9.652E-06
nb100	0.000E+00	2.218E-06	2.236E-06	2.235E-06	2.234E-06	2.232E-06	2.231E-06	2.230E-06	2.229E-06	2.228E-06	2.226E-06
nb100m	0.000E+00	3.556E-07	3.604E-07	3.619E-07	3.634E-07	3.650E-07	3.664E-07	3.679E-07	3.693E-07	3.707E-07	3.720E-07
mo100	9.499E+01	9.658E+01	9.818E+01	9.978E+01	1.014E+02	1.030E+02	1.046E+02	1.062E+02	1.078E+02	1.094E+02	1.110E+02
tc100	0.000E+00	3.234E-06	3.324E-06	3.385E-06	3.445E-06	3.506E-06	3.568E-06	3.629E-06	3.690E-06	3.752E-06	3.813E-06
ru100	5.935E+00	6.133E+00	6.337E+00	6.545E+00	6.756E+00	6.971E+00	7.190E+00	7.412E+00	7.639E+00	7.869E+00	8.103E+00
rb101	0.000E+00	7.959E-15	8.054E-15	8.076E-15	8.098E-15	8.121E-15	8.144E-15	8.167E-15	8.190E-15	8.213E-15	8.236E-15
sr101	0.000E+00	2.410E-10	2.432E-10	2.432E-10	2.432E-10	2.432E-10	2.433E-10	2.433E-10	2.434E-10	2.435E-10	2.436E-10
y101	0.000E+00	4.030E-08	4.055E-08	4.042E-08	4.030E-08	4.018E-08	4.007E-08	3.996E-08	3.985E-08	3.974E-08	3.964E-08
zr101	0.000E+00	1.583E-06	1.597E-06	1.597E-06	1.596E-06	1.596E-06	1.596E-06	1.596E-06	1.596E-06	1.597E-06	1.597E-06
nb101	0.000E+00	9.434E-06	9.521E-06	9.522E-06	9.523E-06	9.525E-06	9.527E-06	9.529E-06	9.530E-06	9.532E-06	9.534E-06
mo101	0.000E+00	1.224E-03	1.236E-03	1.236E-03	1.236E-03	1.237E-03	1.237E-03	1.238E-03	1.238E-03	1.238E-03	1.239E-03
tc101	0.000E+00	1.191E-03	1.202E-03	1.202E-03	1.203E-03	1.203E-03	1.204E-03	1.204E-03	1.204E-03	1.205E-03	1.205E-03
ru101	7.901E+01	8.032E+01	8.165E+01	8.297E+01	8.429E+01	8.562E+01	8.694E+01	8.826E+01	8.958E+01	9.090E+01	9.222E+01
sr102	0.000E+00	6.114E-11	6.151E-11	6.132E-11	6.114E-11	6.097E-11	6.079E-11	6.062E-11	6.046E-11	6.029E-11	6.013E-11
y102	0.000E+00	3.402E-08	3.408E-08	3.383E-08	3.358E-08	3.334E-08	3.310E-08	3.286E-08	3.263E-08	3.239E-08	3.216E-08
zr102	0.000E+00	1.602E-06	1.615E-06	1.613E-06	1.612E-06	1.610E-06	1.609E-06	1.607E-06	1.606E-06	1.605E-06	1.604E-06
nb102	0.000E+00	1.466E-06	1.480E-06	1.481E-06	1.482E-06	1.483E-06	1.485E-06	1.486E-06	1.487E-06	1.488E-06	1.489E-06
mo102	0.000E+00	9.015E-04	9.108E-04	9.119E-04	9.131E-04	9.143E-04	9.155E-04	9.166E-04	9.178E-04	9.189E-04	9.201E-04
tc102	0.000E+00	7.028E-06	7.101E-06	7.109E-06	7.118E-06	7.128E-06	7.137E-06	7.146E-06	7.155E-06	7.164E-06	7.173E-06
tc102m	0.000E+00	3.564E-07	3.612E-07	3.627E-07	3.642E-07	3.657E-07	3.672E-07	3.686E-07	3.699E-07	3.713E-07	3.726E-07
ru102	7.564E+01	7.700E+01	7.839E+01	7.977E+01	8.116E+01	8.255E+01	8.394E+01	8.534E+01	8.674E+01	8.814E+01	8.954E+01
rh102	5.688E-05	5.888E-05	6.092E-05	6.299E-05	6.507E-05	6.717E-05	6.930E-05	7.144E-05	7.362E-05	7.581E-05	7.803E-05
pd102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr103	0.000E+00	2.043E-13	2.069E-13	2.075E-13	2.082E-13	2.088E-13	2.095E-13	2.102E-13	2.108E-13	2.115E-13	2.122E-13
y103	0.000E+00	2.951E-09	2.953E-09	2.929E-09	2.905E-09	2.881E-09	2.857E-09	2.834E-09	2.811E-09	2.788E-09	2.766E-09
zr103	0.000E+00	2.651E-07	2.678E-07	2.681E-07	2.684E-07	2.688E-07	2.691E-07	2.695E-07	2.699E-07	2.703E-07	2.707E-07
nb103	0.000E+00	1.248E-06	1.263E-06	1.266E-06	1.269E-06	1.272E-06	1.274E-06	1.277E-06	1.280E-06	1.283E-06	1.286E-06
mo103	0.000E+00	8.680E-05	8.786E-05	8.813E-05	8.840E-05	8.866E-05	8.893E-05	8.919E-05	8.945E-05	8.971E-05	8.996E-05
tc103	0.000E+00	7.098E-05	7.185E-05	7.206E-05	7.228E-05	7.249E-05	7.270E-05	7.292E-05	7.312E-05	7.333E-05	7.354E-05
ru103	3.391E+00	3.659E+00	3.872E+00	4.034E+00	4.160E+00	4.257E+00	4.333E+00	4.393E+00	4.442E+00	4.481E+00	4.514E+00
rh103	5.044E+01	5.099E+01	5.159E+01	5.224E+01	5.292E+01	5.363E+01	5.436E+01	5.509E+01	5.584E+01	5.658E+01	5.733E+01
rh103m	3.360E-03	3.627E-03	3.838E-03	3.999E-03	4.124E-03	4.220E-03	4.295E-03	4.355E-03	4.403E-03	4.443E-03	4.475E-03
sr104	0.000E+00	8.868E-14	8.979E-14	9.008E-14	9.038E-14	9.068E-14	9.098E-14	9.128E-14	9.159E-14	9.189E-14	9.220E-14
y104	0.000E+00	4.030E-11	4.084E-11	4.100E-11	4.117E-11	4.134E-11	4.152E-11	4.170E-11	4.188E-11	4.206E-11	4.224E-11

case 3 fission products page 64
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
zr104	0.000E+00	1.542E-07	1.561E-07	1.567E-07	1.572E-07	1.578E-07	1.584E-07	1.590E-07	1.596E-07	1.602E-07	1.608E-07
nb104	0.000E+00	1.825E-06	1.850E-06	1.858E-06	1.867E-06	1.875E-06	1.884E-06	1.892E-06	1.901E-06	1.909E-06	1.918E-06
mo104	0.000E+00	6.073E-05	6.157E-05	6.186E-05	6.215E-05	6.244E-05	6.272E-05	6.301E-05	6.329E-05	6.357E-05	6.385E-05
tc104	0.000E+00	1.168E-03	1.184E-03	1.189E-03	1.195E-03	1.201E-03	1.206E-03	1.212E-03	1.217E-03	1.222E-03	1.228E-03
ru104	5.081E+01	5.186E+01	5.292E+01	5.398E+01	5.505E+01	5.613E+01	5.721E+01	5.829E+01	5.938E+01	6.048E+01	6.158E+01
rh104	0.000E+00	2.092E-05	2.142E-05	2.175E-05	2.210E-05	2.246E-05	2.283E-05	2.321E-05	2.359E-05	2.397E-05	2.436E-05
rh104m	0.000E+00	9.401E-06	9.628E-06	9.777E-06	9.934E-06	1.010E-05	1.026E-05	1.043E-05	1.060E-05	1.077E-05	1.095E-05
pd104	1.339E+01	1.387E+01	1.436E+01	1.486E+01	1.536E+01	1.588E+01	1.640E+01	1.693E+01	1.747E+01	1.802E+01	1.857E+01
y105	0.000E+00	5.740E-13	5.818E-13	5.843E-13	5.868E-13	5.894E-13	5.920E-13	5.947E-13	5.973E-13	6.000E-13	6.027E-13
zr105	0.000E+00	8.668E-09	8.713E-09	8.679E-09	8.646E-09	8.615E-09	8.583E-09	8.553E-09	8.523E-09	8.493E-09	8.465E-09
nb105	0.000E+00	4.508E-07	4.573E-07	4.596E-07	4.620E-07	4.645E-07	4.669E-07	4.694E-07	4.719E-07	4.744E-07	4.769E-07
mo105	0.000E+00	2.629E-05	2.669E-05	2.684E-05	2.700E-05	2.716E-05	2.732E-05	2.748E-05	2.763E-05	2.779E-05	2.794E-05
tc105	0.000E+00	4.007E-04	4.068E-04	4.093E-04	4.118E-04	4.144E-04	4.168E-04	4.193E-04	4.218E-04	4.242E-04	4.266E-04
ru105	0.000E+00	1.418E-02	1.440E-02	1.449E-02	1.458E-02	1.467E-02	1.476E-02	1.485E-02	1.494E-02	1.502E-02	1.511E-02
rh105	7.543E-08	1.073E-01	1.090E-01	1.096E-01	1.103E-01	1.110E-01	1.116E-01	1.123E-01	1.129E-01	1.136E-01	1.142E-01
rh105m	0.000E+00	1.134E-05	1.152E-05	1.159E-05	1.166E-05	1.173E-05	1.180E-05	1.188E-05	1.195E-05	1.202E-05	1.209E-05
pd105	3.648E+01	3.716E+01	3.797E+01	3.878E+01	3.959E+01	4.041E+01	4.123E+01	4.206E+01	4.289E+01	4.373E+01	4.457E+01
y106	0.000E+00	6.345E-15	6.432E-15	6.462E-15	6.492E-15	6.522E-15	6.553E-15	6.584E-15	6.615E-15	6.647E-15	6.678E-15
zr106	0.000E+00	7.418E-10	7.538E-10	7.589E-10	7.643E-10	7.697E-10	7.752E-10	7.807E-10	7.863E-10	7.920E-10	7.976E-10
nb106	0.000E+00	2.901E-08	2.955E-08	2.982E-08	3.011E-08	3.039E-08	3.068E-08	3.097E-08	3.127E-08	3.156E-08	3.186E-08
mo106	0.000E+00	3.407E-06	3.465E-06	3.492E-06	3.520E-06	3.547E-06	3.575E-06	3.602E-06	3.630E-06	3.658E-06	3.686E-06
tc106	0.000E+00	2.229E-05	2.268E-05	2.286E-05	2.304E-05	2.322E-05	2.341E-05	2.359E-05	2.377E-05	2.395E-05	2.413E-05
ru106	1.432E+01	1.454E+01	1.477E+01	1.500E+01	1.523E+01	1.545E+01	1.568E+01	1.590E+01	1.612E+01	1.634E+01	1.655E+01
rh106	1.329E-05	1.442E-05	1.465E-05	1.487E-05	1.509E-05	1.531E-05	1.553E-05	1.574E-05	1.595E-05	1.616E-05	1.638E-05
rh106m	0.000E+00	1.081E-04	1.111E-04	1.121E-04	1.131E-04	1.141E-04	1.151E-04	1.161E-04	1.171E-04	1.181E-04	1.191E-04
pd106	1.604E+01	1.655E+01	1.708E+01	1.762E+01	1.817E+01	1.872E+01	1.928E+01	1.986E+01	2.043E+01	2.102E+01	2.162E+01
ag106	0.000E+00	1.102E-15	1.137E-15	1.162E-15	1.188E-15	1.214E-15	1.241E-15	1.268E-15	1.296E-15	1.324E-15	1.353E-15
y107	0.000E+00	5.986E-17	6.069E-17	6.096E-17	6.124E-17	6.152E-17	6.181E-17	6.210E-17	6.238E-17	6.268E-17	6.297E-17
zr107	0.000E+00	1.972E-12	2.004E-12	2.018E-12	2.032E-12	2.047E-12	2.062E-12	2.077E-12	2.092E-12	2.108E-12	2.123E-12
nb107	0.000E+00	3.973E-09	4.052E-09	4.094E-09	4.138E-09	4.183E-09	4.227E-09	4.273E-09	4.319E-09	4.365E-09	4.412E-09
mo107	0.000E+00	5.712E-07	5.819E-07	5.873E-07	5.929E-07	5.985E-07	6.041E-07	6.098E-07	6.155E-07	6.212E-07	6.269E-07

tc107	0.000E+00	8.933E-06	9.099E-06	9.183E-06	9.268E-06	9.353E-06	9.438E-06	9.523E-06	9.607E-06	9.692E-06	9.776E-06
ru107	0.000E+00	1.146E-04	1.167E-04	1.178E-04	1.188E-04	1.199E-04	1.209E-04	1.220E-04	1.230E-04	1.240E-04	1.251E-04
rh107	0.000E+00	6.649E-04	6.770E-04	6.831E-04	6.892E-04	6.953E-04	7.014E-04	7.075E-04	7.135E-04	7.195E-04	7.255E-04
pd107	1.913E+01	1.962E+01	2.011E+01	2.061E+01	2.112E+01	2.162E+01	2.214E+01	2.265E+01	2.317E+01	2.370E+01	2.423E+01
pd107m	0.000E+00	2.628E-08	2.745E-08	2.839E-08	2.935E-08	3.034E-08	3.134E-08	3.236E-08	3.339E-08	3.445E-08	3.552E-08
ag107	2.245E-06	2.335E-06	2.426E-06	2.519E-06	2.615E-06	2.713E-06	2.814E-06	2.916E-06	3.021E-06	3.129E-06	3.238E-06
zr108	0.000E+00	1.245E-13	1.265E-13	1.273E-13	1.282E-13	1.291E-13	1.300E-13	1.309E-13	1.318E-13	1.328E-13	1.337E-13
nb108	0.000E+00	3.889E-11	3.969E-11	4.015E-11	4.061E-11	4.109E-11	4.157E-11	4.205E-11	4.255E-11	4.304E-11	4.355E-11
mo108	0.000E+00	3.518E-08	3.592E-08	3.635E-08	3.679E-08	3.723E-08	3.768E-08	3.814E-08	3.860E-08	3.906E-08	3.953E-08
tc108	0.000E+00	7.445E-07	7.594E-07	7.676E-07	7.760E-07	7.843E-07	7.928E-07	8.012E-07	8.097E-07	8.182E-07	8.267E-07
ru108	0.000E+00	8.885E-05	9.054E-05	9.142E-05	9.230E-05	9.319E-05	9.407E-05	9.496E-05	9.584E-05	9.672E-05	9.759E-05
rh108	0.000E+00	5.558E-06	5.664E-06	5.718E-06	5.773E-06	5.829E-06	5.884E-06	5.939E-06	5.993E-06	6.048E-06	6.103E-06
rh108m	0.000E+00	1.933E-06	1.966E-06	1.981E-06	1.996E-06	2.010E-06	2.025E-06	2.039E-06	2.053E-06	2.067E-06	2.080E-06
pd108	1.220E+01	1.252E+01	1.285E+01	1.318E+01	1.351E+01	1.384E+01	1.418E+01	1.452E+01	1.487E+01	1.521E+01	1.556E+01
ag108	4.310E-14	9.351E-11	9.678E-11	9.920E-11	1.017E-10	1.041E-10	1.066E-10	1.091E-10	1.117E-10	1.142E-10	1.168E-10
ag108m	1.396E-05	1.457E-05	1.521E-05	1.586E-05	1.652E-05	1.720E-05	1.790E-05	1.862E-05	1.935E-05	2.010E-05	2.087E-05
cd108	1.446E-05	1.508E-05	1.572E-05	1.638E-05	1.705E-05	1.775E-05	1.845E-05	1.918E-05	1.992E-05	2.068E-05	2.145E-05
zr109	0.000E+00	3.058E-17	3.101E-17	3.116E-17	3.131E-17	3.147E-17	3.162E-17	3.178E-17	3.194E-17	3.210E-17	3.226E-17
nb109	0.000E+00	2.015E-12	2.055E-12	2.077E-12	2.099E-12	2.121E-12	2.144E-12	2.167E-12	2.191E-12	2.215E-12	2.239E-12

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power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
mo109	0.000E+00	3.483E-09	3.557E-09	3.600E-09	3.643E-09	3.687E-09	3.732E-09	3.777E-09	3.822E-09	3.868E-09	3.914E-09
tc109	0.000E+00	6.810E-08	6.946E-08	7.021E-08	7.097E-08	7.173E-08	7.250E-08	7.326E-08	7.403E-08	7.480E-08	7.557E-08
ru109	0.000E+00	7.833E-06	7.979E-06	8.053E-06	8.127E-06	8.201E-06	8.275E-06	8.348E-06	8.422E-06	8.494E-06	8.566E-06
rh109	0.000E+00	2.089E-05	2.128E-05	2.147E-05	2.166E-05	2.186E-05	2.205E-05	2.224E-05	2.243E-05	2.261E-05	2.280E-05
rh109m	0.000E+00	6.529E-06	6.649E-06	6.709E-06	6.770E-06	6.830E-06	6.890E-06	6.949E-06	7.008E-06	7.067E-06	7.125E-06
pd109	8.430E-19	1.414E-02	1.442E-02	1.457E-02	1.473E-02	1.489E-02	1.504E-02	1.520E-02	1.535E-02	1.551E-02	1.566E-02
pd109m	0.000E+00	3.389E-07	3.477E-07	3.534E-07	3.592E-07	3.650E-07	3.708E-07	3.767E-07	3.825E-07	3.884E-07	3.944E-07
ag109	8.292E+00	8.472E+00	8.667E+00	8.863E+00	9.060E+00	9.258E+00	9.456E+00	9.655E+00	9.854E+00	1.005E+01	1.026E+01
ag109m	1.063E-14	1.135E-05	1.158E-05	1.170E-05	1.183E-05	1.195E-05	1.208E-05	1.220E-05	1.233E-05	1.245E-05	1.257E-05
cd109	1.073E-08	1.126E-08	1.182E-08	1.240E-08	1.299E-08	1.361E-08	1.425E-08	1.490E-08	1.558E-08	1.628E-08	1.700E-08
nb110	0.000E+00	3.303E-14	3.363E-14	3.392E-14	3.423E-14	3.455E-14	3.486E-14	3.518E-14	3.551E-14	3.584E-14	3.617E-14
mo110	0.000E+00	7.161E-10	7.308E-10	7.390E-10	7.475E-10	7.561E-10	7.648E-10	7.737E-10	7.826E-10	7.917E-10	8.009E-10

tc110	0.000E+00	6.216E-09	6.348E-09	6.425E-09	6.503E-09	6.582E-09	6.661E-09	6.742E-09	6.823E-09	6.905E-09	6.988E-09
ru110	0.000E+00	1.059E-06	1.080E-06	1.091E-06	1.102E-06	1.113E-06	1.124E-06	1.135E-06	1.146E-06	1.157E-06	1.169E-06
rh110	0.000E+00	3.848E-08	3.915E-08	3.947E-08	3.979E-08	4.011E-08	4.042E-08	4.073E-08	4.104E-08	4.134E-08	4.164E-08
rh110m	0.000E+00	2.360E-06	2.405E-06	2.428E-06	2.452E-06	2.476E-06	2.500E-06	2.524E-06	2.548E-06	2.572E-06	2.596E-06
pd110	3.605E+00	3.700E+00	3.796E+00	3.894E+00	3.992E+00	4.092E+00	4.192E+00	4.294E+00	4.396E+00	4.499E+00	4.603E+00
ag110	6.479E-10	2.162E-06	2.239E-06	2.296E-06	2.354E-06	2.412E-06	2.471E-06	2.530E-06	2.590E-06	2.650E-06	2.710E-06
ag110m	4.179E-02	4.323E-02	4.473E-02	4.624E-02	4.778E-02	4.934E-02	5.092E-02	5.251E-02	5.414E-02	5.578E-02	5.744E-02
cd110	1.967E+00	2.053E+00	2.142E+00	2.233E+00	2.326E+00	2.422E+00	2.521E+00	2.621E+00	2.724E+00	2.830E+00	2.937E+00
nb111	0.000E+00	3.011E-16	3.054E-16	3.069E-16	3.085E-16	3.101E-16	3.117E-16	3.133E-16	3.149E-16	3.166E-16	3.182E-16
mo111	0.000E+00	1.050E-11	1.069E-11	1.079E-11	1.089E-11	1.099E-11	1.109E-11	1.119E-11	1.130E-11	1.140E-11	1.151E-11
tc111	0.000E+00	2.850E-09	2.909E-09	2.942E-09	2.976E-09	3.011E-09	3.046E-09	3.082E-09	3.118E-09	3.154E-09	3.191E-09
ru111	0.000E+00	3.740E-08	3.813E-08	3.852E-08	3.891E-08	3.932E-08	3.972E-08	4.012E-08	4.053E-08	4.094E-08	4.135E-08
rh111	0.000E+00	5.113E-07	5.208E-07	5.257E-07	5.306E-07	5.355E-07	5.404E-07	5.453E-07	5.502E-07	5.551E-07	5.600E-07
pd111	0.000E+00	6.951E-05	7.080E-05	7.146E-05	7.213E-05	7.279E-05	7.346E-05	7.412E-05	7.479E-05	7.545E-05	7.611E-05
pd111m	0.000E+00	4.410E-05	4.486E-05	4.521E-05	4.556E-05	4.590E-05	4.624E-05	4.657E-05	4.690E-05	4.722E-05	4.754E-05
ag111	2.370E-03	2.549E-02	3.098E-02	3.241E-02	3.295E-02	3.331E-02	3.363E-02	3.394E-02	3.424E-02	3.455E-02	3.485E-02
ag111m	0.000E+00	3.214E-06	3.274E-06	3.304E-06	3.335E-06	3.366E-06	3.396E-06	3.427E-06	3.458E-06	3.488E-06	3.519E-06
cd111	1.886E+00	1.911E+00	1.955E+00	2.004E+00	2.054E+00	2.104E+00	2.155E+00	2.207E+00	2.259E+00	2.311E+00	2.364E+00
cd111m	0.000E+00	1.068E-07	1.128E-07	1.179E-07	1.232E-07	1.287E-07	1.343E-07	1.400E-07	1.460E-07	1.520E-07	1.583E-07
nb112	0.000E+00	5.202E-18	5.267E-18	5.285E-18	5.303E-18	5.321E-18	5.339E-18	5.357E-18	5.376E-18	5.394E-18	5.412E-18
mo112	0.000E+00	2.802E-12	2.844E-12	2.860E-12	2.876E-12	2.892E-12	2.909E-12	2.926E-12	2.943E-12	2.960E-12	2.977E-12
tc112	0.000E+00	9.991E-11	1.017E-10	1.027E-10	1.036E-10	1.046E-10	1.056E-10	1.065E-10	1.076E-10	1.086E-10	1.096E-10
ru112	0.000E+00	2.781E-08	2.831E-08	2.856E-08	2.882E-08	2.907E-08	2.933E-08	2.959E-08	2.985E-08	3.012E-08	3.038E-08
rh112	0.000E+00	2.809E-08	2.859E-08	2.882E-08	2.906E-08	2.930E-08	2.954E-08	2.978E-08	3.002E-08	3.025E-08	3.049E-08
pd112	5.322E-14	1.759E-03	1.789E-03	1.804E-03	1.818E-03	1.833E-03	1.847E-03	1.861E-03	1.876E-03	1.890E-03	1.904E-03
ag112	9.330E-15	2.632E-04	2.678E-04	2.699E-04	2.721E-04	2.743E-04	2.764E-04	2.786E-04	2.808E-04	2.829E-04	2.850E-04
cd112	9.790E-01	1.001E+00	1.026E+00	1.051E+00	1.076E+00	1.102E+00	1.128E+00	1.154E+00	1.180E+00	1.206E+00	1.233E+00
mo113	0.000E+00	1.222E-14	1.238E-14	1.242E-14	1.247E-14	1.252E-14	1.257E-14	1.262E-14	1.267E-14	1.271E-14	1.276E-14
tc113	0.000E+00	3.418E-11	3.472E-11	3.495E-11	3.518E-11	3.542E-11	3.567E-11	3.591E-11	3.616E-11	3.642E-11	3.667E-11
ru113	0.000E+00	7.291E-09	7.411E-09	7.465E-09	7.522E-09	7.579E-09	7.637E-09	7.696E-09	7.755E-09	7.815E-09	7.876E-09
rh113	0.000E+00	8.116E-09	8.249E-09	8.308E-09	8.369E-09	8.430E-09	8.492E-09	8.554E-09	8.616E-09	8.679E-09	8.742E-09
pd113	0.000E+00	1.255E-06	1.275E-06	1.284E-06	1.293E-06	1.302E-06	1.311E-06	1.320E-06	1.329E-06	1.338E-06	1.348E-06
ag113	0.000E+00	2.537E-04	2.578E-04	2.596E-04	2.614E-04	2.632E-04	2.651E-04	2.669E-04	2.687E-04	2.706E-04	2.724E-04
ag113m	0.000E+00	1.809E-07	1.838E-07	1.851E-07	1.864E-07	1.877E-07	1.890E-07	1.903E-07	1.916E-07	1.929E-07	1.942E-07
cd113	1.437E-02	1.406E-02	1.406E-02	1.410E-02	1.415E-02	1.421E-02	1.427E-02	1.433E-02	1.439E-02	1.445E-02	1.451E-02
cd113m	1.034E-02	1.058E-02	1.084E-02	1.109E-02	1.135E-02	1.161E-02	1.188E-02	1.214E-02	1.241E-02	1.268E-02	1.296E-02
in113	6.007E-04	6.226E-04	6.450E-04	6.679E-04	6.913E-04	7.152E-04	7.397E-04	7.647E-04	7.902E-04	8.163E-04	8.429E-04
in113m	0.000E+00	8.399E-14	8.538E-14	8.599E-14	8.659E-14	8.718E-14	8.776E-14	8.832E-14	8.887E-14	8.941E-14	8.994E-14

case 3 fission products page 66
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
mo114	0.000E+00	1.010E-14	1.023E-14	1.026E-14	1.029E-14	1.033E-14	1.036E-14	1.040E-14	1.043E-14	1.046E-14	1.050E-14
tc114	0.000E+00	1.591E-12	1.613E-12	1.620E-12	1.628E-12	1.636E-12	1.644E-12	1.652E-12	1.660E-12	1.668E-12	1.676E-12
ru114	0.000E+00	7.059E-09	7.160E-09	7.196E-09	7.234E-09	7.273E-09	7.312E-09	7.352E-09	7.392E-09	7.432E-09	7.473E-09
rh114	0.000E+00	7.807E-09	7.923E-09	7.967E-09	8.013E-09	8.058E-09	8.104E-09	8.150E-09	8.197E-09	8.243E-09	8.289E-09
pd114	0.000E+00	1.579E-06	1.603E-06	1.612E-06	1.621E-06	1.630E-06	1.639E-06	1.648E-06	1.657E-06	1.666E-06	1.675E-06
ag114	0.000E+00	5.133E-08	5.210E-08	5.239E-08	5.269E-08	5.298E-08	5.328E-08	5.357E-08	5.386E-08	5.415E-08	5.444E-08
cd114	1.081E+00	1.105E+00	1.130E+00	1.154E+00	1.179E+00	1.204E+00	1.229E+00	1.254E+00	1.280E+00	1.305E+00	1.331E+00
in114	4.010E-11	6.817E-11	7.328E-11	7.788E-11	8.228E-11	8.654E-11	9.071E-11	9.481E-11	9.890E-11	1.030E-10	1.071E-10
in114m	2.493E-06	2.755E-06	3.000E-06	3.227E-06	3.439E-06	3.641E-06	3.836E-06	4.025E-06	4.211E-06	4.395E-06	4.579E-06
sn114	1.984E-05	2.073E-05	2.170E-05	2.272E-05	2.381E-05	2.496E-05	2.616E-05	2.742E-05	2.873E-05	3.010E-05	3.153E-05
mo115	0.000E+00	1.481E-17	1.499E-17	1.503E-17	1.507E-17	1.512E-17	1.516E-17	1.520E-17	1.524E-17	1.528E-17	1.532E-17
tc115	0.000E+00	7.190E-14	7.280E-14	7.304E-14	7.328E-14	7.353E-14	7.378E-14	7.402E-14	7.427E-14	7.452E-14	7.477E-14
ru115	0.000E+00	1.721E-10	1.744E-10	1.751E-10	1.758E-10	1.765E-10	1.772E-10	1.779E-10	1.787E-10	1.794E-10	1.802E-10
rh115	0.000E+00	1.565E-08	1.586E-08	1.593E-08	1.600E-08	1.608E-08	1.615E-08	1.623E-08	1.630E-08	1.638E-08	1.645E-08
pd115	0.000E+00	2.495E-07	2.530E-07	2.541E-07	2.553E-07	2.565E-07	2.577E-07	2.589E-07	2.601E-07	2.613E-07	2.624E-07
ag115	0.000E+00	6.243E-06	6.330E-06	6.360E-06	6.390E-06	6.420E-06	6.450E-06	6.480E-06	6.510E-06	6.539E-06	6.569E-06
ag115m	0.000E+00	3.927E-08	3.983E-08	4.002E-08	4.021E-08	4.041E-08	4.060E-08	4.079E-08	4.098E-08	4.117E-08	4.135E-08
cd115	1.213E-07	1.391E-03	1.419E-03	1.427E-03	1.435E-03	1.442E-03	1.450E-03	1.457E-03	1.465E-03	1.472E-03	1.480E-03
cd115m	1.016E-03	1.076E-03	1.126E-03	1.167E-03	1.201E-03	1.228E-03	1.252E-03	1.271E-03	1.289E-03	1.304E-03	1.317E-03
in115	1.801E-01	1.806E-01	1.826E-01	1.846E-01	1.865E-01	1.884E-01	1.903E-01	1.922E-01	1.940E-01	1.958E-01	1.976E-01
in115m	1.158E-08	1.167E-04	1.192E-04	1.198E-04	1.204E-04	1.211E-04	1.217E-04	1.223E-04	1.230E-04	1.236E-04	1.242E-04
sn115	1.652E-02	1.678E-02	1.712E-02	1.747E-02	1.781E-02	1.816E-02	1.851E-02	1.886E-02	1.921E-02	1.956E-02	1.992E-02
tc116	0.000E+00	1.292E-14	1.308E-14	1.311E-14	1.315E-14	1.319E-14	1.322E-14	1.326E-14	1.330E-14	1.333E-14	1.337E-14
ru116	0.000E+00	1.082E-10	1.094E-10	1.097E-10	1.100E-10	1.103E-10	1.106E-10	1.108E-10	1.111E-10	1.114E-10	1.117E-10
rh116	0.000E+00	8.895E-10	8.997E-10	9.018E-10	9.039E-10	9.061E-10	9.083E-10	9.105E-10	9.127E-10	9.150E-10	9.172E-10
pd116	0.000E+00	9.248E-08	9.360E-08	9.386E-08	9.413E-08	9.439E-08	9.465E-08	9.491E-08	9.516E-08	9.542E-08	9.567E-08
ag116	0.000E+00	1.342E-06	1.359E-06	1.363E-06	1.367E-06	1.371E-06	1.376E-06	1.380E-06	1.384E-06	1.387E-06	1.391E-06
ag116m	0.000E+00	1.099E-08	1.114E-08	1.119E-08	1.125E-08	1.130E-08	1.135E-08	1.140E-08	1.145E-08	1.149E-08	1.154E-08
cd116	4.775E-01	4.868E-01	4.963E-01	5.058E-01	5.153E-01	5.249E-01	5.345E-01	5.441E-01	5.538E-01	5.635E-01	5.732E-01
in116	0.000E+00	1.579E-08	1.615E-08	1.637E-08	1.659E-08	1.681E-08	1.703E-08	1.724E-08	1.746E-08	1.767E-08	1.788E-08
in116m	0.000E+00	1.368E-05	1.400E-05	1.419E-05	1.438E-05	1.457E-05	1.476E-05	1.495E-05	1.513E-05	1.532E-05	1.550E-05

sn116	1.617E-01	1.669E-01	1.722E-01	1.777E-01	1.831E-01	1.887E-01	1.943E-01	2.000E-01	2.058E-01	2.116E-01	2.175E-01	
tc117	0.000E+00	2.094E-16	2.119E-16	2.125E-16	2.131E-16	2.137E-16	2.143E-16	2.149E-16	2.155E-16	2.161E-16	2.167E-16	
ru117	0.000E+00	3.437E-12	3.478E-12	3.488E-12	3.498E-12	3.508E-12	3.518E-12	3.528E-12	3.539E-12	3.549E-12	3.559E-12	
rh117	0.000E+00	4.455E-10	4.509E-10	4.523E-10	4.537E-10	4.552E-10	4.566E-10	4.580E-10	4.595E-10	4.609E-10	4.624E-10	
pd117	0.000E+00	2.472E-08	2.504E-08	2.513E-08	2.522E-08	2.531E-08	2.540E-08	2.549E-08	2.558E-08	2.567E-08	2.576E-08	
ag117	0.000E+00	3.204E-07	3.249E-07	3.264E-07	3.279E-07	3.294E-07	3.309E-07	3.323E-07	3.338E-07	3.352E-07	3.366E-07	
ag117m	0.000E+00	2.351E-08	2.383E-08	2.394E-08	2.405E-08	2.416E-08	2.427E-08	2.438E-08	2.448E-08	2.459E-08	2.469E-08	
cd117	0.000E+00	6.910E-05	7.007E-05	7.039E-05	7.072E-05	7.105E-05	7.137E-05	7.168E-05	7.199E-05	7.230E-05	7.260E-05	
cd117m	0.000E+00	2.132E-05	2.163E-05	2.173E-05	2.184E-05	2.195E-05	2.205E-05	2.216E-05	2.226E-05	2.236E-05	2.245E-05	
in117	0.000E+00	1.511E-05	1.532E-05	1.540E-05	1.547E-05	1.554E-05	1.561E-05	1.568E-05	1.575E-05	1.582E-05	1.589E-05	
in117m	0.000E+00	4.922E-05	4.991E-05	5.015E-05	5.038E-05	5.061E-05	5.084E-05	5.106E-05	5.129E-05	5.150E-05	5.172E-05	
sn117	4.371E-01	4.462E-01	4.555E-01	4.649E-01	4.744E-01	4.839E-01	4.934E-01	5.030E-01	5.126E-01	5.223E-01	5.319E-01	
sn117m	1.674E-05	4.296E-05	5.554E-05	6.177E-05	6.526E-05	6.757E-05	6.937E-05	7.098E-05	7.249E-05	7.399E-05	7.548E-05	
tc118	0.000E+00	3.361E-18	3.401E-18	3.409E-18	3.419E-18	3.428E-18	3.437E-18	3.446E-18	3.456E-18	3.465E-18	3.474E-18	
ru118	0.000E+00	1.080E-12	1.094E-12	1.097E-12	1.100E-12	1.103E-12	1.107E-12	1.110E-12	1.113E-12	1.116E-12	1.120E-12	
rh118	0.000E+00	2.755E-11	2.790E-11	2.799E-11	2.810E-11	2.820E-11	2.830E-11	2.841E-11	2.851E-11	2.862E-11	2.872E-11	
pd118	0.000E+00	7.343E-09	7.439E-09	7.468E-09	7.497E-09	7.526E-09	7.555E-09	7.584E-09	7.613E-09	7.642E-09	7.671E-09	
ag118	0.000E+00	1.543E-08	1.563E-08	1.568E-08	1.574E-08	1.579E-08	1.585E-08	1.590E-08	1.596E-08	1.601E-08	1.606E-08	
ag118m	0.000E+00	5.821E-09	5.895E-09	5.916E-09	5.937E-09	5.958E-09	5.979E-09	5.999E-09	6.020E-09	6.040E-09	6.060E-09	

case 3 fission products page 67
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
cd118	0.000E+00	2.171E-05	2.199E-05	2.207E-05	2.216E-05	2.224E-05	2.232E-05	2.240E-05	2.248E-05	2.256E-05	2.264E-05
in118	0.000E+00	3.601E-08	3.648E-08	3.662E-08	3.676E-08	3.690E-08	3.703E-08	3.717E-08	3.730E-08	3.743E-08	3.756E-08
in118m	0.000E+00	2.506E-09	2.545E-09	2.561E-09	2.576E-09	2.592E-09	2.607E-09	2.621E-09	2.635E-09	2.649E-09	2.663E-09
sn118	3.556E-01	3.627E-01	3.700E-01	3.773E-01	3.846E-01	3.919E-01	3.993E-01	4.067E-01	4.141E-01	4.216E-01	4.291E-01
ru119	0.000E+00	4.097E-14	4.145E-14	4.154E-14	4.163E-14	4.173E-14	4.183E-14	4.192E-14	4.202E-14	4.211E-14	4.221E-14
rh119	0.000E+00	1.393E-11	1.407E-11	1.409E-11	1.410E-11	1.412E-11	1.413E-11	1.415E-11	1.416E-11	1.418E-11	1.419E-11
pd119	0.000E+00	2.111E-09	2.130E-09	2.131E-09	2.131E-09	2.131E-09	2.132E-09	2.132E-09	2.132E-09	2.132E-09	2.132E-09
ag119	0.000E+00	9.800E-09	9.909E-09	9.928E-09	9.947E-09	9.965E-09	9.983E-09	1.000E-08	1.002E-08	1.003E-08	1.005E-08
cd119	0.000E+00	8.169E-07	8.270E-07	8.295E-07	8.321E-07	8.346E-07	8.371E-07	8.395E-07	8.419E-07	8.442E-07	8.465E-07
cd119m	0.000E+00	3.232E-07	3.276E-07	3.290E-07	3.304E-07	3.318E-07	3.332E-07	3.346E-07	3.360E-07	3.373E-07	3.386E-07
in119	0.000E+00	4.591E-07	4.653E-07	4.673E-07	4.694E-07	4.714E-07	4.734E-07	4.754E-07	4.774E-07	4.793E-07	4.812E-07
in119m	0.000E+00	4.950E-06	5.011E-06	5.027E-06	5.043E-06	5.058E-06	5.073E-06	5.088E-06	5.103E-06	5.118E-06	5.132E-06

sn119	3.766E-01	3.841E-01	3.917E-01	3.993E-01	4.070E-01	4.147E-01	4.224E-01	4.301E-01	4.379E-01	4.457E-01	4.535E-01
sn119m	1.272E-03	1.299E-03	1.326E-03	1.354E-03	1.382E-03	1.410E-03	1.438E-03	1.466E-03	1.494E-03	1.523E-03	1.552E-03
ru120	0.000E+00	9.450E-15	9.563E-15	9.588E-15	9.615E-15	9.641E-15	9.668E-15	9.694E-15	9.721E-15	9.747E-15	9.774E-15
rh120	0.000E+00	1.207E-12	1.222E-12	1.225E-12	1.229E-12	1.232E-12	1.236E-12	1.240E-12	1.243E-12	1.247E-12	1.251E-12
pd120	0.000E+00	2.647E-09	2.677E-09	2.684E-09	2.690E-09	2.697E-09	2.704E-09	2.711E-09	2.717E-09	2.724E-09	2.732E-09
ag120	0.000E+00	3.716E-09	3.761E-09	3.772E-09	3.783E-09	3.794E-09	3.805E-09	3.816E-09	3.827E-09	3.838E-09	3.849E-09
cd120	0.000E+00	3.635E-07	3.681E-07	3.693E-07	3.706E-07	3.719E-07	3.731E-07	3.744E-07	3.756E-07	3.768E-07	3.780E-07
in120	0.000E+00	2.244E-08	2.272E-08	2.280E-08	2.288E-08	2.296E-08	2.304E-08	2.311E-08	2.319E-08	2.326E-08	2.334E-08
in120m	0.000E+00	5.974E-09	6.063E-09	6.097E-09	6.130E-09	6.163E-09	6.194E-09	6.226E-09	6.256E-09	6.286E-09	6.315E-09
sn120	3.692E-01	3.765E-01	3.839E-01	3.914E-01	3.988E-01	4.063E-01	4.138E-01	4.213E-01	4.289E-01	4.365E-01	4.441E-01
rh121	0.000E+00	4.825E-13	4.883E-13	4.896E-13	4.909E-13	4.923E-13	4.937E-13	4.951E-13	4.964E-13	4.978E-13	4.992E-13
pd121	0.000E+00	1.822E-10	1.844E-10	1.848E-10	1.853E-10	1.857E-10	1.862E-10	1.867E-10	1.871E-10	1.876E-10	1.881E-10
ag121	0.000E+00	1.822E-09	1.843E-09	1.848E-09	1.853E-09	1.857E-09	1.862E-09	1.867E-09	1.872E-09	1.876E-09	1.881E-09
cd121	0.000E+00	9.718E-08	9.839E-08	9.870E-08	9.901E-08	9.932E-08	9.963E-08	9.994E-08	1.002E-07	1.005E-07	1.008E-07
in121	0.000E+00	1.614E-08	1.637E-08	1.645E-08	1.653E-08	1.661E-08	1.669E-08	1.676E-08	1.683E-08	1.690E-08	1.697E-08
in121m	0.000E+00	1.709E-06	1.730E-06	1.736E-06	1.742E-06	1.747E-06	1.753E-06	1.758E-06	1.763E-06	1.769E-06	1.774E-06
sn121	1.736E-07	7.683E-04	7.780E-04	7.806E-04	7.832E-04	7.859E-04	7.884E-04	7.909E-04	7.934E-04	7.959E-04	7.983E-04
sn121m	3.987E-03	4.074E-03	4.162E-03	4.250E-03	4.339E-03	4.428E-03	4.517E-03	4.607E-03	4.698E-03	4.788E-03	4.879E-03
sb121	3.806E-01	3.871E-01	3.943E-01	4.016E-01	4.089E-01	4.162E-01	4.235E-01	4.308E-01	4.381E-01	4.455E-01	4.529E-01
rh122	0.000E+00	2.302E-14	2.330E-14	2.336E-14	2.342E-14	2.349E-14	2.355E-14	2.362E-14	2.368E-14	2.375E-14	2.381E-14
pd122	0.000E+00	1.320E-10	1.335E-10	1.338E-10	1.341E-10	1.345E-10	1.348E-10	1.351E-10	1.355E-10	1.358E-10	1.361E-10
ag122	0.000E+00	5.679E-10	5.744E-10	5.758E-10	5.772E-10	5.786E-10	5.800E-10	5.814E-10	5.828E-10	5.842E-10	5.856E-10
cd122	0.000E+00	4.079E-08	4.129E-08	4.142E-08	4.154E-08	4.167E-08	4.179E-08	4.191E-08	4.203E-08	4.215E-08	4.227E-08
in122	0.000E+00	1.303E-08	1.320E-08	1.324E-08	1.328E-08	1.333E-08	1.337E-08	1.341E-08	1.345E-08	1.349E-08	1.353E-08
in122m	0.000E+00	9.319E-09	9.453E-09	9.500E-09	9.547E-09	9.594E-09	9.639E-09	9.683E-09	9.726E-09	9.768E-09	9.809E-09
sn122	4.799E-01	4.895E-01	4.991E-01	5.088E-01	5.185E-01	5.283E-01	5.380E-01	5.479E-01	5.577E-01	5.676E-01	5.775E-01
sb122	6.330E-08	1.363E-04	1.425E-04	1.456E-04	1.487E-04	1.518E-04	1.549E-04	1.580E-04	1.612E-04	1.644E-04	1.676E-04
sb122m	0.000E+00	1.505E-08	1.552E-08	1.585E-08	1.618E-08	1.652E-08	1.685E-08	1.719E-08	1.754E-08	1.788E-08	1.823E-08
te122	1.492E-02	1.535E-02	1.591E-02	1.650E-02	1.709E-02	1.770E-02	1.832E-02	1.895E-02	1.959E-02	2.025E-02	2.092E-02
rh123	0.000E+00	2.464E-15	2.494E-15	2.501E-15	2.508E-15	2.515E-15	2.522E-15	2.529E-15	2.536E-15	2.543E-15	2.550E-15
pd123	0.000E+00	4.925E-12	4.984E-12	4.997E-12	5.011E-12	5.025E-12	5.040E-12	5.054E-12	5.068E-12	5.082E-12	5.097E-12
ag123	0.000E+00	1.841E-10	1.863E-10	1.868E-10	1.874E-10	1.879E-10	1.884E-10	1.890E-10	1.895E-10	1.901E-10	1.906E-10
cd123	0.000E+00	4.484E-08	4.539E-08	4.554E-08	4.568E-08	4.583E-08	4.597E-08	4.612E-08	4.626E-08	4.640E-08	4.654E-08
in123	0.000E+00	3.873E-08	3.924E-08	3.939E-08	3.954E-08	3.968E-08	3.983E-08	3.997E-08	4.012E-08	4.026E-08	4.039E-08
in123m	0.000E+00	8.443E-08	8.552E-08	8.584E-08	8.616E-08	8.648E-08	8.679E-08	8.710E-08	8.740E-08	8.770E-08	8.799E-08
sn123	7.431E-03	7.437E-03	7.449E-03	7.460E-03	7.471E-03	7.481E-03	7.491E-03	7.500E-03	7.509E-03	7.517E-03	7.525E-03
sn123m	0.000E+00	2.037E-05	2.062E-05	2.069E-05	2.076E-05	2.082E-05	2.089E-05	2.096E-05	2.102E-05	2.108E-05	2.114E-05
sb123	4.434E-01	4.519E-01	4.605E-01	4.692E-01	4.778E-01	4.865E-01	4.951E-01	5.038E-01	5.126E-01	5.213E-01	5.300E-01

case 3 fission products page 68
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
te123	8.690E-05	9.097E-05	9.518E-05	9.954E-05	1.040E-04	1.087E-04	1.135E-04	1.184E-04	1.235E-04	1.287E-04	1.340E-04
te123m	2.211E-05	2.318E-05	2.430E-05	2.545E-05	2.663E-05	2.784E-05	2.907E-05	3.033E-05	3.163E-05	3.295E-05	3.431E-05
pd124	0.000E+00	4.589E-12	4.641E-12	4.651E-12	4.662E-12	4.672E-12	4.683E-12	4.694E-12	4.705E-12	4.715E-12	4.726E-12
ag124	0.000E+00	9.131E-11	9.229E-11	9.242E-11	9.257E-11	9.272E-11	9.287E-11	9.302E-11	9.317E-11	9.332E-11	9.347E-11
cd124	0.000E+00	7.025E-09	7.104E-09	7.119E-09	7.134E-09	7.148E-09	7.163E-09	7.177E-09	7.191E-09	7.204E-09	7.218E-09
in124	0.000E+00	4.665E-08	4.722E-08	4.737E-08	4.752E-08	4.766E-08	4.780E-08	4.794E-08	4.807E-08	4.820E-08	4.833E-08
sn124	8.049E-01	8.209E-01	8.371E-01	8.533E-01	8.695E-01	8.858E-01	9.022E-01	9.186E-01	9.351E-01	9.516E-01	9.681E-01
sb124	1.930E-03	2.022E-03	2.112E-03	2.196E-03	2.274E-03	2.349E-03	2.420E-03	2.489E-03	2.556E-03	2.620E-03	2.684E-03
sb124m	0.000E+00	1.089E-09	1.115E-09	1.130E-09	1.146E-09	1.162E-09	1.178E-09	1.194E-09	1.210E-09	1.226E-09	1.242E-09
te124	1.070E-02	1.108E-02	1.147E-02	1.189E-02	1.231E-02	1.276E-02	1.321E-02	1.368E-02	1.417E-02	1.466E-02	1.517E-02
pd125	0.000E+00	3.551E-13	3.591E-13	3.598E-13	3.606E-13	3.613E-13	3.620E-13	3.628E-13	3.635E-13	3.642E-13	3.650E-13
ag125	0.000E+00	5.460E-11	5.515E-11	5.518E-11	5.522E-11	5.526E-11	5.530E-11	5.534E-11	5.537E-11	5.541E-11	5.544E-11
cd125	0.000E+00	7.500E-09	7.580E-09	7.591E-09	7.602E-09	7.613E-09	7.623E-09	7.633E-09	7.642E-09	7.651E-09	7.659E-09
in125	0.000E+00	1.959E-08	1.983E-08	1.990E-08	1.996E-08	2.002E-08	2.008E-08	2.014E-08	2.020E-08	2.025E-08	2.031E-08
in125m	0.000E+00	7.892E-08	7.994E-08	8.024E-08	8.054E-08	8.084E-08	8.112E-08	8.140E-08	8.167E-08	8.194E-08	8.220E-08
sn125	5.970E-04	3.066E-03	3.860E-03	4.114E-03	4.202E-03	4.239E-03	4.260E-03	4.277E-03	4.292E-03	4.306E-03	4.319E-03
sn125m	0.000E+00	8.743E-06	8.858E-06	8.892E-06	8.927E-06	8.960E-06	8.993E-06	9.025E-06	9.057E-06	9.087E-06	9.117E-06
sb125	7.240E-01	7.332E-01	7.441E-01	7.556E-01	7.671E-01	7.787E-01	7.902E-01	8.016E-01	8.130E-01	8.243E-01	8.356E-01
te125	2.505E-01	2.586E-01	2.668E-01	2.752E-01	2.837E-01	2.923E-01	3.010E-01	3.098E-01	3.188E-01	3.279E-01	3.372E-01
te125m	8.957E-03	9.100E-03	9.241E-03	9.384E-03	9.529E-03	9.676E-03	9.824E-03	9.974E-03	1.012E-02	1.027E-02	1.042E-02
pd126	0.000E+00	1.241E-13	1.256E-13	1.259E-13	1.263E-13	1.266E-13	1.270E-13	1.273E-13	1.276E-13	1.280E-13	1.283E-13
ag126	0.000E+00	1.022E-11	1.034E-11	1.036E-11	1.038E-11	1.041E-11	1.043E-11	1.046E-11	1.049E-11	1.051E-11	1.054E-11
cd126	0.000E+00	2.903E-09	2.937E-09	2.943E-09	2.950E-09	2.957E-09	2.963E-09	2.970E-09	2.977E-09	2.983E-09	2.990E-09
in126	0.000E+00	2.902E-08	2.941E-08	2.953E-08	2.965E-08	2.977E-08	2.988E-08	3.000E-08	3.011E-08	3.022E-08	3.033E-08
sn126	1.800E+00	1.838E+00	1.877E+00	1.917E+00	1.956E+00	1.996E+00	2.036E+00	2.076E+00	2.116E+00	2.156E+00	2.196E+00
sb126	8.366E-05	2.483E-04	3.178E-04	3.475E-04	3.613E-04	3.688E-04	3.737E-04	3.776E-04	3.811E-04	3.843E-04	3.874E-04
sb126m	6.501E-10	4.803E-07	4.886E-07	4.925E-07	4.965E-07	5.004E-07	5.042E-07	5.080E-07	5.117E-07	5.154E-07	5.191E-07
te126	2.824E-02	2.882E-02	2.951E-02	3.025E-02	3.101E-02	3.178E-02	3.256E-02	3.336E-02	3.416E-02	3.497E-02	3.579E-02
xe126	3.449E-10	3.616E-10	3.791E-10	3.974E-10	4.163E-10	4.360E-10	4.564E-10	4.776E-10	4.995E-10	5.223E-10	5.459E-10
ag127	0.000E+00	7.123E-12	7.210E-12	7.232E-12	7.255E-12	7.278E-12	7.302E-12	7.326E-12	7.350E-12	7.375E-12	7.399E-12
cd127	0.000E+00	2.515E-09	2.545E-09	2.551E-09	2.558E-09	2.565E-09	2.573E-09	2.580E-09	2.587E-09	2.595E-09	2.602E-09

in127 0.000E+00 2.070E-08 2.096E-08 2.103E-08 2.111E-08 2.118E-08 2.126E-08 2.133E-08 2.140E-08 2.148E-08 2.155E-08
in127m 0.000E+00 6.765E-08 6.851E-08 6.876E-08 6.900E-08 6.925E-08 6.949E-08 6.973E-08 6.997E-08 7.020E-08 7.043E-08
sn127 0.000E+00 2.711E-04 2.747E-04 2.759E-04 2.771E-04 2.783E-04 2.795E-04 2.806E-04 2.817E-04 2.828E-04 2.838E-04
sn127m 0.000E+00 1.188E-05 1.203E-05 1.208E-05 1.213E-05 1.217E-05 1.222E-05 1.227E-05 1.231E-05 1.235E-05 1.240E-05
sb127 1.495E-04 2.786E-02 2.968E-02 2.990E-02 3.002E-02 3.014E-02 3.026E-02 3.038E-02 3.050E-02 3.061E-02 3.072E-02
te127 5.179E-04 2.816E-03 2.983E-03 3.004E-03 3.018E-03 3.030E-03 3.043E-03 3.055E-03 3.068E-03 3.079E-03 3.091E-03
te127m 1.440E-01 1.396E-01 1.401E-01 1.409E-01 1.416E-01 1.424E-01 1.431E-01 1.438E-01 1.445E-01 1.452E-01 1.459E-01
i127 3.985E+00 4.043E+00 4.126E+00 4.210E+00 4.294E+00 4.378E+00 4.463E+00 4.548E+00 4.634E+00 4.719E+00 4.805E+00
xe127 3.432E-08 4.026E-08 4.540E-08 4.982E-08 5.374E-08 5.732E-08 6.066E-08 6.384E-08 6.693E-08 6.998E-08 7.300E-08
ag128 0.000E+00 1.830E-12 1.851E-12 1.855E-12 1.860E-12 1.865E-12 1.869E-12 1.874E-12 1.879E-12 1.883E-12 1.888E-12
cd128 0.000E+00 4.260E-09 4.304E-09 4.308E-09 4.314E-09 4.319E-09 4.325E-09 4.330E-09 4.336E-09 4.342E-09 4.348E-09
in128 0.000E+00 2.898E-08 2.925E-08 2.925E-08 2.925E-08 2.926E-08 2.926E-08 2.927E-08 2.928E-08 2.929E-08 2.930E-08
sn128 0.000E+00 5.219E-04 5.275E-04 5.283E-04 5.291E-04 5.299E-04 5.307E-04 5.314E-04 5.322E-04 5.329E-04 5.336E-04
sb128 0.000E+00 5.066E-04 5.130E-04 5.147E-04 5.165E-04 5.181E-04 5.198E-04 5.214E-04 5.230E-04 5.245E-04 5.260E-04
sb128m 0.000E+00 9.735E-05 9.842E-05 9.858E-05 9.876E-05 9.893E-05 9.909E-05 9.925E-05 9.941E-05 9.957E-05 9.972E-05
te128 8.848E+00 9.011E+00 9.177E+00 9.342E+00 9.509E+00 9.675E+00 9.842E+00 1.001E+01 1.018E+01 1.034E+01 1.051E+01
i128 0.000E+00 8.251E-06 8.521E-06 8.718E-06 8.918E-06 9.120E-06 9.323E-06 9.528E-06 9.734E-06 9.941E-06 1.015E-05
xe128 1.256E-01 1.305E-01 1.356E-01 1.409E-01 1.462E-01 1.517E-01 1.573E-01 1.631E-01 1.689E-01 1.749E-01 1.810E-01
cd129 0.000E+00 6.033E-10 6.099E-10 6.109E-10 6.120E-10 6.131E-10 6.143E-10 6.154E-10 6.166E-10 6.178E-10 6.190E-10

case 3 fission products page 69
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
in129	0.000E+00	2.200E-08	2.221E-08	2.221E-08	2.222E-08	2.223E-08	2.224E-08	2.225E-08	2.227E-08	2.228E-08	2.229E-08
sn129	0.000E+00	1.698E-05	1.717E-05	1.720E-05	1.724E-05	1.728E-05	1.731E-05	1.734E-05	1.738E-05	1.741E-05	1.744E-05
sn129m	0.000E+00	5.138E-05	5.182E-05	5.180E-05	5.177E-05	5.175E-05	5.173E-05	5.171E-05	5.168E-05	5.166E-05	5.163E-05
sb129	0.000E+00	5.374E-03	5.432E-03	5.441E-03	5.450E-03	5.459E-03	5.468E-03	5.477E-03	5.485E-03	5.493E-03	5.501E-03
te129	1.229E-04	1.307E-03	1.330E-03	1.340E-03	1.348E-03	1.355E-03	1.360E-03	1.364E-03	1.368E-03	1.371E-03	1.373E-03
te129m	1.333E-01	1.485E-01	1.607E-01	1.694E-01	1.757E-01	1.804E-01	1.838E-01	1.863E-01	1.882E-01	1.896E-01	1.907E-01
i129	1.800E+01	1.830E+01	1.862E+01	1.894E+01	1.926E+01	1.959E+01	1.991E+01	2.024E+01	2.057E+01	2.090E+01	2.123E+01
xe129	3.634E-04	3.788E-04	3.990E-04	4.210E-04	4.444E-04	4.687E-04	4.940E-04	5.203E-04	5.477E-04	5.761E-04	6.055E-04
xe129m	9.403E-07	6.372E-06	8.202E-06	8.980E-06	9.473E-06	9.895E-06	1.030E-05	1.072E-05	1.114E-05	1.157E-05	1.201E-05
cd130	0.000E+00	3.582E-10	3.619E-10	3.623E-10	3.627E-10	3.632E-10	3.636E-10	3.641E-10	3.645E-10	3.650E-10	3.655E-10
in130	0.000E+00	8.696E-09	8.754E-09	8.733E-09	8.714E-09	8.695E-09	8.676E-09	8.658E-09	8.641E-09	8.624E-09	8.607E-09
sn130	0.000E+00	7.941E-05	8.008E-05	8.001E-05	7.996E-05	7.990E-05	7.985E-05	7.980E-05	7.975E-05	7.970E-05	7.965E-05

sb130	0.000E+00	2.714E-04	2.744E-04	2.749E-04	2.754E-04	2.759E-04	2.764E-04	2.769E-04	2.773E-04	2.777E-04	2.781E-04
sb130m	0.000E+00	1.803E-04	1.818E-04	1.817E-04	1.816E-04	1.815E-04	1.815E-04	1.814E-04	1.813E-04	1.812E-04	1.811E-04
te130	3.662E+01	3.724E+01	3.788E+01	3.851E+01	3.914E+01	3.978E+01	4.041E+01	4.105E+01	4.168E+01	4.231E+01	4.295E+01
i130	6.394E-22	6.443E-04	6.629E-04	6.757E-04	6.887E-04	7.019E-04	7.151E-04	7.285E-04	7.419E-04	7.554E-04	7.690E-04
i130m	0.000E+00	4.102E-06	4.223E-06	4.306E-06	4.391E-06	4.477E-06	4.564E-06	4.651E-06	4.739E-06	4.827E-06	4.916E-06
xe130	4.214E-01	4.361E-01	4.518E-01	4.678E-01	4.841E-01	5.008E-01	5.177E-01	5.350E-01	5.526E-01	5.705E-01	5.888E-01
cd131	0.000E+00	1.242E-11	1.256E-11	1.259E-11	1.262E-11	1.265E-11	1.267E-11	1.270E-11	1.273E-11	1.276E-11	1.279E-11
in131	0.000E+00	3.171E-09	3.199E-09	3.197E-09	3.196E-09	3.195E-09	3.194E-09	3.194E-09	3.193E-09	3.193E-09	3.193E-09
sn131	0.000E+00	1.184E-05	1.195E-05	1.194E-05	1.194E-05	1.194E-05	1.194E-05	1.194E-05	1.194E-05	1.194E-05	1.194E-05
sb131	0.000E+00	1.160E-03	1.170E-03	1.170E-03	1.169E-03	1.168E-03	1.168E-03	1.167E-03	1.167E-03	1.166E-03	1.165E-03
te131	3.292E-12	1.357E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03	1.369E-03
te131m	1.053E-09	2.297E-02	2.324E-02	2.331E-02	2.337E-02	2.343E-02	2.349E-02	2.355E-02	2.360E-02	2.366E-02	2.371E-02
i131	7.133E-02	5.692E-01	7.025E-01	7.351E-01	7.433E-01	7.455E-01	7.463E-01	7.467E-01	7.470E-01	7.473E-01	7.475E-01
xe131	4.961E+01	4.976E+01	5.030E+01	5.093E+01	5.158E+01	5.223E+01	5.288E+01	5.353E+01	5.416E+01	5.479E+01	5.542E+01
xe131m	6.252E-03	7.514E-03	1.053E-02	1.233E-02	1.320E-02	1.360E-02	1.378E-02	1.387E-02	1.393E-02	1.397E-02	1.401E-02
cd132	0.000E+00	1.941E-12	1.963E-12	1.967E-12	1.971E-12	1.976E-12	1.980E-12	1.985E-12	1.989E-12	1.993E-12	1.998E-12
in132	0.000E+00	5.862E-10	5.913E-10	5.910E-10	5.908E-10	5.906E-10	5.905E-10	5.904E-10	5.903E-10	5.902E-10	5.901E-10
sn132	0.000E+00	9.843E-06	9.938E-06	9.942E-06	9.947E-06	9.953E-06	9.959E-06	9.965E-06	9.972E-06	9.978E-06	9.985E-06
sb132	0.000E+00	1.277E-04	1.290E-04	1.291E-04	1.292E-04	1.293E-04	1.294E-04	1.295E-04	1.296E-04	1.297E-04	1.297E-04
sb132m	0.000E+00	8.156E-05	8.222E-05	8.214E-05	8.207E-05	8.200E-05	8.194E-05	8.187E-05	8.181E-05	8.174E-05	8.168E-05
te132	7.980E-04	4.225E-01	4.392E-01	4.397E-01	4.398E-01	4.398E-01	4.399E-01	4.399E-01	4.400E-01	4.400E-01	4.401E-01
i132	2.401E-05	1.257E-02	1.307E-02	1.309E-02	1.310E-02	1.310E-02	1.310E-02	1.310E-02	1.311E-02	1.311E-02	1.311E-02
xe132	1.030E+02	1.045E+02	1.064E+02	1.084E+02	1.104E+02	1.124E+02	1.144E+02	1.164E+02	1.184E+02	1.204E+02	1.224E+02
cs132	5.338E-07	9.705E-06	1.153E-05	1.202E-05	1.228E-05	1.250E-05	1.272E-05	1.294E-05	1.315E-05	1.337E-05	1.358E-05
ba132	1.064E-05	1.085E-05	1.121E-05	1.160E-05	1.200E-05	1.240E-05	1.282E-05	1.324E-05	1.367E-05	1.410E-05	1.454E-05
in133	0.000E+00	1.116E-11	1.129E-11	1.132E-11	1.135E-11	1.138E-11	1.141E-11	1.144E-11	1.147E-11	1.150E-11	1.153E-11
sn133	0.000E+00	9.658E-08	9.748E-08	9.749E-08	9.752E-08	9.755E-08	9.758E-08	9.763E-08	9.767E-08	9.772E-08	9.778E-08
sb133	0.000E+00	1.051E-04	1.059E-04	1.057E-04	1.055E-04	1.054E-04	1.052E-04	1.051E-04	1.050E-04	1.048E-04	1.047E-04
te133	0.000E+00	9.075E-04	9.150E-04	9.140E-04	9.133E-04	9.125E-04	9.117E-04	9.110E-04	9.102E-04	9.095E-04	9.088E-04
te133m	0.000E+00	3.317E-03	3.344E-03	3.340E-03	3.337E-03	3.334E-03	3.331E-03	3.328E-03	3.325E-03	3.322E-03	3.318E-03
i133	3.929E-12	1.678E-01	1.692E-01	1.692E-01	1.691E-01	1.690E-01	1.690E-01	1.689E-01	1.689E-01	1.688E-01	1.687E-01
i133m	0.000E+00	1.538E-06	1.554E-06	1.556E-06	1.558E-06	1.560E-06	1.562E-06	1.564E-06	1.566E-06	1.568E-06	1.569E-06
xe133	2.770E-02	8.337E-01	9.582E-01	9.723E-01	9.736E-01	9.735E-01	9.732E-01	9.729E-01	9.726E-01	9.723E-01	9.720E-01
xe133m	1.574E-06	1.231E-02	1.254E-02	1.254E-02	1.254E-02	1.255E-02	1.255E-02	1.255E-02	1.256E-02	1.256E-02	1.256E-02
cs133	1.233E+02	1.242E+02	1.260E+02	1.279E+02	1.297E+02	1.316E+02	1.335E+02	1.353E+02	1.372E+02	1.390E+02	1.408E+02
ba133	9.562E-09	9.784E-09	1.001E-08	1.023E-08	1.046E-08	1.069E-08	1.092E-08	1.115E-08	1.138E-08	1.161E-08	1.184E-08
in134	0.000E+00	1.353E-12	1.369E-12	1.373E-12	1.376E-12	1.380E-12	1.384E-12	1.388E-12	1.392E-12	1.396E-12	1.400E-12
sn134	0.000E+00	1.179E-08	1.193E-08	1.195E-08	1.197E-08	1.200E-08	1.202E-08	1.205E-08	1.208E-08	1.210E-08	1.213E-08

case 3 fission products page 70
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
sb134	0.000E+00	1.090E-07	1.097E-07	1.095E-07	1.092E-07	1.090E-07	1.088E-07	1.086E-07	1.083E-07	1.081E-07	1.079E-07
sb134m	0.000E+00	9.771E-07	9.858E-07	9.856E-07	9.856E-07	9.856E-07	9.857E-07	9.858E-07	9.860E-07	9.863E-07	9.866E-07
te134	0.000E+00	4.982E-03	5.018E-03	5.009E-03	5.000E-03	4.991E-03	4.983E-03	4.974E-03	4.966E-03	4.958E-03	4.950E-03
i134	0.000E+00	7.894E-03	7.960E-03	7.953E-03	7.947E-03	7.941E-03	7.936E-03	7.930E-03	7.924E-03	7.919E-03	7.913E-03
i134m	0.000E+00	4.839E-05	4.899E-05	4.915E-05	4.931E-05	4.946E-05	4.962E-05	4.976E-05	4.991E-05	5.005E-05	5.019E-05
xe134	1.539E+02	1.565E+02	1.590E+02	1.616E+02	1.641E+02	1.666E+02	1.692E+02	1.717E+02	1.743E+02	1.768E+02	1.793E+02
xe134m	0.000E+00	1.320E-08	1.337E-08	1.342E-08	1.346E-08	1.350E-08	1.355E-08	1.359E-08	1.363E-08	1.366E-08	1.370E-08
cs134	6.987E+00	7.185E+00	7.388E+00	7.592E+00	7.798E+00	8.007E+00	8.218E+00	8.430E+00	8.645E+00	8.861E+00	9.080E+00
cs134m	0.000E+00	2.754E-04	2.827E-04	2.877E-04	2.928E-04	2.979E-04	3.031E-04	3.082E-04	3.133E-04	3.185E-04	3.236E-04
ba134	2.337E+00	2.443E+00	2.553E+00	2.665E+00	2.781E+00	2.899E+00	3.021E+00	3.146E+00	3.274E+00	3.405E+00	3.540E+00
sn135	0.000E+00	4.088E-10	4.135E-10	4.145E-10	4.155E-10	4.165E-10	4.175E-10	4.186E-10	4.196E-10	4.207E-10	4.218E-10
sb135	0.000E+00	1.014E-07	1.023E-07	1.023E-07	1.023E-07	1.024E-07	1.024E-07	1.024E-07	1.025E-07	1.025E-07	1.026E-07
te135	0.000E+00	2.045E-05	2.063E-05	2.061E-05	2.060E-05	2.060E-05	2.059E-05	2.058E-05	2.058E-05	2.057E-05	2.056E-05
i135	0.000E+00	5.109E-02	5.154E-02	5.153E-02	5.152E-02	5.151E-02	5.150E-02	5.149E-02	5.148E-02	5.147E-02	5.147E-02
xe135	0.000E+00	2.648E-02	2.652E-02	2.647E-02	2.642E-02	2.638E-02	2.633E-02	2.629E-02	2.624E-02	2.620E-02	2.615E-02
xe135m	0.000E+00	4.320E-04	4.364E-04	4.368E-04	4.373E-04	4.377E-04	4.381E-04	4.385E-04	4.389E-04	4.393E-04	4.397E-04
cs135	5.235E+01	5.312E+01	5.391E+01	5.470E+01	5.549E+01	5.628E+01	5.707E+01	5.786E+01	5.865E+01	5.943E+01	6.022E+01
cs135m	0.000E+00	4.878E-05	5.076E-05	5.231E-05	5.389E-05	5.549E-05	5.711E-05	5.876E-05	6.042E-05	6.211E-05	6.382E-05
ba135	9.649E-03	1.022E-02	1.084E-02	1.149E-02	1.216E-02	1.287E-02	1.361E-02	1.438E-02	1.519E-02	1.602E-02	1.690E-02
ba135m	1.843E-13	1.014E-05	1.073E-05	1.123E-05	1.175E-05	1.229E-05	1.284E-05	1.341E-05	1.400E-05	1.460E-05	1.522E-05
sn136	0.000E+00	6.179E-11	6.251E-11	6.267E-11	6.283E-11	6.300E-11	6.316E-11	6.332E-11	6.349E-11	6.366E-11	6.382E-11
sb136	0.000E+00	7.616E-09	7.694E-09	7.702E-09	7.712E-09	7.722E-09	7.732E-09	7.743E-09	7.754E-09	7.765E-09	7.777E-09
te136	0.000E+00	8.427E-06	8.492E-06	8.479E-06	8.468E-06	8.457E-06	8.447E-06	8.437E-06	8.428E-06	8.420E-06	8.411E-06
i136	0.000E+00	8.255E-05	8.319E-05	8.307E-05	8.297E-05	8.287E-05	8.277E-05	8.268E-05	8.258E-05	8.249E-05	8.241E-05
i136m	0.000E+00	2.278E-05	2.298E-05	2.296E-05	2.294E-05	2.293E-05	2.291E-05	2.290E-05	2.288E-05	2.287E-05	2.285E-05
xe136	2.143E+02	2.179E+02	2.217E+02	2.254E+02	2.291E+02	2.329E+02	2.366E+02	2.404E+02	2.441E+02	2.479E+02	2.516E+02
cs136	1.323E-02	3.574E-02	4.594E-02	5.069E-02	5.315E-02	5.463E-02	5.572E-02	5.663E-02	5.747E-02	5.828E-02	5.907E-02
ba136	1.523E+00	1.545E+00	1.581E+00	1.623E+00	1.668E+00	1.715E+00	1.762E+00	1.811E+00	1.860E+00	1.910E+00	1.961E+00
ba136m	4.018E-10	1.086E-09	1.396E-09	1.540E-09	1.614E-09	1.660E-09	1.693E-09	1.720E-09	1.746E-09	1.770E-09	1.795E-09
sb137	0.000E+00	4.374E-09	4.372E-09	4.330E-09	4.288E-09	4.247E-09	4.206E-09	4.166E-09	4.126E-09	4.086E-09	4.047E-09
te137	0.000E+00	5.715E-07	5.763E-07	5.760E-07	5.757E-07	5.755E-07	5.753E-07	5.751E-07	5.750E-07	5.749E-07	5.748E-07

i137	0.000E+00	2.612E-05	2.634E-05	2.632E-05	2.630E-05	2.628E-05	2.627E-05	2.626E-05	2.624E-05	2.623E-05	2.622E-05	
xe137	0.000E+00	4.798E-04	4.840E-04	4.838E-04	4.836E-04	4.835E-04	4.833E-04	4.832E-04	4.831E-04	4.830E-04	4.828E-04	
cs137	1.255E+02	1.275E+02	1.296E+02	1.316E+02	1.337E+02	1.357E+02	1.378E+02	1.398E+02	1.419E+02	1.439E+02	1.460E+02	
ba137	4.360E+00	4.492E+00	4.626E+00	4.762E+00	4.900E+00	5.040E+00	5.183E+00	5.327E+00	5.474E+00	5.623E+00	5.774E+00	
ba137m	1.916E-05	1.960E-05	1.991E-05	2.023E-05	2.054E-05	2.086E-05	2.117E-05	2.148E-05	2.180E-05	2.211E-05	2.242E-05	
sb138	0.000E+00	2.246E-11	2.272E-11	2.278E-11	2.284E-11	2.291E-11	2.297E-11	2.304E-11	2.310E-11	2.317E-11	2.323E-11	
te138	0.000E+00	5.558E-08	5.615E-08	5.622E-08	5.629E-08	5.636E-08	5.644E-08	5.653E-08	5.661E-08	5.670E-08	5.679E-08	
i138	0.000E+00	3.525E-06	3.556E-06	3.554E-06	3.553E-06	3.552E-06	3.551E-06	3.550E-06	3.549E-06	3.548E-06	3.548E-06	
xe138	0.000E+00	1.669E-03	1.682E-03	1.679E-03	1.677E-03	1.675E-03	1.673E-03	1.671E-03	1.669E-03	1.668E-03	1.666E-03	
cs138	0.000E+00	4.138E-03	4.172E-03	4.168E-03	4.164E-03	4.160E-03	4.157E-03	4.153E-03	4.149E-03	4.146E-03	4.142E-03	
cs138m	0.000E+00	1.590E-05	1.609E-05	1.613E-05	1.618E-05	1.622E-05	1.626E-05	1.630E-05	1.634E-05	1.638E-05	1.642E-05	
ba138	1.313E+02	1.334E+02	1.356E+02	1.377E+02	1.399E+02	1.420E+02	1.441E+02	1.463E+02	1.484E+02	1.506E+02	1.527E+02	
la138	7.904E-04	8.043E-04	8.183E-04	8.323E-04	8.463E-04	8.603E-04	8.743E-04	8.884E-04	9.024E-04	9.164E-04	9.304E-04	
sb139	0.000E+00	2.143E-12	2.169E-12	2.174E-12	2.180E-12	2.186E-12	2.192E-12	2.198E-12	2.204E-12	2.209E-12	2.215E-12	
te139	0.000E+00	3.641E-09	3.680E-09	3.686E-09	3.692E-09	3.699E-09	3.705E-09	3.712E-09	3.719E-09	3.726E-09	3.733E-09	
i139	0.000E+00	6.087E-07	6.123E-07	6.102E-07	6.083E-07	6.064E-07	6.045E-07	6.027E-07	6.009E-07	5.991E-07	5.973E-07	
xe139	0.000E+00	5.851E-05	5.892E-05	5.878E-05	5.865E-05	5.853E-05	5.841E-05	5.829E-05	5.817E-05	5.805E-05	5.793E-05	
cs139	0.000E+00	1.119E-03	1.128E-03	1.127E-03	1.126E-03	1.124E-03	1.123E-03	1.122E-03	1.121E-03	1.120E-03	1.118E-03	
ba139	0.000E+00	1.049E-02	1.057E-02	1.056E-02	1.055E-02	1.054E-02	1.053E-02	1.052E-02	1.051E-02	1.050E-02	1.049E-02	

case 3 fission products page 71
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d		
la139	1.247E+02	1.267E+02	1.287E+02	1.307E+02	1.328E+02	1.348E+02	1.368E+02	1.388E+02	1.408E+02	1.428E+02	1.448E+02	
ce139	1.843E-06	1.873E-06	1.904E-06	1.934E-06	1.963E-06	1.993E-06	2.022E-06	2.051E-06	2.079E-06	2.108E-06	2.136E-06	
pr139	0.000E+00	8.627E-11	8.847E-11	8.996E-11	9.153E-11	9.314E-11	9.479E-11	9.646E-11	9.815E-11	9.986E-11	1.016E-10	
te140	0.000E+00	8.250E-10	8.332E-10	8.337E-10	8.343E-10	8.350E-10	8.357E-10	8.364E-10	8.371E-10	8.378E-10	8.386E-10	
i140	0.000E+00	5.864E-08	5.911E-08	5.904E-08	5.899E-08	5.894E-08	5.889E-08	5.886E-08	5.882E-08	5.879E-08	5.877E-08	
xe140	0.000E+00	1.400E-05	1.409E-05	1.405E-05	1.401E-05	1.397E-05	1.393E-05	1.390E-05	1.386E-05	1.382E-05	1.379E-05	
cs140	0.000E+00	1.156E-04	1.165E-04	1.164E-04	1.162E-04	1.161E-04	1.159E-04	1.158E-04	1.157E-04	1.155E-04	1.154E-04	
ba140	5.687E-01	1.582E+00	2.008E+00	2.181E+00	2.250E+00	2.278E+00	2.288E+00	2.291E+00	2.291E+00	2.290E+00	2.288E+00	
la140	8.617E-02	1.994E-01	2.636E-01	2.900E-01	3.007E-01	3.050E-01	3.066E-01	3.072E-01	3.073E-01	3.073E-01	3.072E-01	
ce140	1.301E+02	1.311E+02	1.327E+02	1.345E+02	1.366E+02	1.386E+02	1.407E+02	1.428E+02	1.448E+02	1.469E+02	1.490E+02	
pr140	0.000E+00	3.873E-09	3.972E-09	4.039E-09	4.109E-09	4.182E-09	4.255E-09	4.331E-09	4.406E-09	4.483E-09	4.560E-09	
te141	0.000E+00	3.015E-12	3.051E-12	3.058E-12	3.067E-12	3.075E-12	3.083E-12	3.091E-12	3.099E-12	3.108E-12	3.116E-12	

i141	0.000E+00	4.181E-09	4.224E-09	4.229E-09	4.234E-09	4.240E-09	4.246E-09	4.251E-09	4.257E-09	4.264E-09	4.270E-09	
xe141	0.000E+00	6.880E-07	6.927E-07	6.911E-07	6.896E-07	6.882E-07	6.868E-07	6.855E-07	6.841E-07	6.829E-07	6.816E-07	
cs141	0.000E+00	3.481E-05	3.507E-05	3.502E-05	3.497E-05	3.492E-05	3.487E-05	3.482E-05	3.477E-05	3.472E-05	3.468E-05	
ba141	0.000E+00	2.084E-03	2.100E-03	2.098E-03	2.096E-03	2.093E-03	2.091E-03	2.089E-03	2.087E-03	2.084E-03	2.082E-03	
la141	0.000E+00	2.708E-02	2.730E-02	2.726E-02	2.724E-02	2.721E-02	2.718E-02	2.715E-02	2.712E-02	2.710E-02	2.707E-02	
ce141	3.762E+00	4.221E+00	4.576E+00	4.825E+00	4.999E+00	5.120E+00	5.203E+00	5.260E+00	5.299E+00	5.324E+00	5.341E+00	
pr141	1.118E+02	1.131E+02	1.146E+02	1.162E+02	1.179E+02	1.197E+02	1.214E+02	1.232E+02	1.250E+02	1.268E+02	1.286E+02	
nd141	0.000E+00	1.349E-10	1.375E-10	1.393E-10	1.412E-10	1.432E-10	1.452E-10	1.472E-10	1.492E-10	1.512E-10	1.531E-10	
te142	0.000E+00	2.623E-12	2.656E-12	2.666E-12	2.676E-12	2.686E-12	2.696E-12	2.707E-12	2.717E-12	2.728E-12	2.739E-12	
i142	0.000E+00	5.043E-10	5.103E-10	5.117E-10	5.132E-10	5.149E-10	5.166E-10	5.183E-10	5.202E-10	5.221E-10	5.241E-10	
xe142	0.000E+00	1.925E-07	1.940E-07	1.937E-07	1.935E-07	1.932E-07	1.930E-07	1.928E-07	1.926E-07	1.924E-07	1.922E-07	
cs142	0.000E+00	1.379E-06	1.389E-06	1.386E-06	1.384E-06	1.381E-06	1.379E-06	1.376E-06	1.374E-06	1.372E-06	1.370E-06	
ba142	0.000E+00	1.157E-03	1.166E-03	1.164E-03	1.162E-03	1.161E-03	1.159E-03	1.157E-03	1.156E-03	1.154E-03	1.152E-03	
la142	0.000E+00	1.031E-02	1.039E-02	1.038E-02	1.036E-02	1.035E-02	1.034E-02	1.032E-02	1.031E-02	1.030E-02	1.029E-02	
ce142	1.162E+02	1.181E+02	1.199E+02	1.218E+02	1.237E+02	1.255E+02	1.274E+02	1.293E+02	1.311E+02	1.330E+02	1.348E+02	
pr142	7.250E-15	2.956E-03	3.032E-03	3.083E-03	3.137E-03	3.192E-03	3.249E-03	3.306E-03	3.364E-03	3.422E-03	3.481E-03	
pr142m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
nd142	1.132E+00	1.171E+00	1.214E+00	1.257E+00	1.301E+00	1.346E+00	1.391E+00	1.438E+00	1.485E+00	1.533E+00	1.582E+00	
i143	0.000E+00	1.170E-11	1.184E-11	1.186E-11	1.189E-11	1.192E-11	1.195E-11	1.198E-11	1.201E-11	1.203E-11	1.206E-11	
xe143	0.000E+00	2.284E-08	2.304E-08	2.304E-08	2.304E-08	2.304E-08	2.304E-08	2.304E-08	2.305E-08	2.305E-08	2.306E-08	
cs143	0.000E+00	7.361E-07	7.406E-07	7.384E-07	7.363E-07	7.343E-07	7.323E-07	7.303E-07	7.284E-07	7.265E-07	7.247E-07	
ba143	0.000E+00	2.271E-05	2.286E-05	2.281E-05	2.276E-05	2.272E-05	2.267E-05	2.262E-05	2.258E-05	2.253E-05	2.249E-05	
la143	0.000E+00	1.532E-03	1.543E-03	1.540E-03	1.537E-03	1.534E-03	1.531E-03	1.528E-03	1.526E-03	1.523E-03	1.520E-03	
ce143	4.753E-08	2.161E-01	2.177E-01	2.173E-01	2.169E-01	2.165E-01	2.161E-01	2.157E-01	2.153E-01	2.150E-01	2.146E-01	
pr143	6.375E-01	1.340E+00	1.754E+00	1.932E+00	2.006E+00	2.036E+00	2.047E+00	2.050E+00	2.049E+00	2.046E+00	2.043E+00	
nd143	9.386E+01	9.408E+01	9.480E+01	9.575E+01	9.678E+01	9.785E+01	9.893E+01	1.000E+02	1.011E+02	1.021E+02	1.032E+02	
i144	0.000E+00	1.721E-13	1.742E-13	1.746E-13	1.751E-13	1.756E-13	1.761E-13	1.766E-13	1.770E-13	1.775E-13	1.780E-13	
xe144	0.000E+00	5.594E-09	5.652E-09	5.659E-09	5.666E-09	5.674E-09	5.682E-09	5.690E-09	5.698E-09	5.707E-09	5.715E-09	
cs144	0.000E+00	1.236E-07	1.246E-07	1.244E-07	1.243E-07	1.241E-07	1.240E-07	1.238E-07	1.237E-07	1.236E-07	1.235E-07	
ba144	0.000E+00	1.395E-05	1.403E-05	1.399E-05	1.395E-05	1.390E-05	1.386E-05	1.382E-05	1.378E-05	1.375E-05	1.371E-05	
la144	0.000E+00	6.565E-05	6.610E-05	6.595E-05	6.580E-05	6.566E-05	6.551E-05	6.537E-05	6.523E-05	6.509E-05	6.496E-05	
ce144	3.751E+01	3.763E+01	3.775E+01	3.787E+01	3.798E+01	3.808E+01	3.817E+01	3.826E+01	3.834E+01	3.842E+01	3.848E+01	
pr144	1.580E-03	1.589E-03	1.596E-03	1.602E-03	1.606E-03	1.611E-03	1.615E-03	1.619E-03	1.622E-03	1.625E-03	1.628E-03	
pr144m	9.214E-06	9.273E-06	9.304E-06	9.333E-06	9.359E-06	9.384E-06	9.408E-06	9.429E-06	9.449E-06	9.467E-06	9.484E-06	
nd144	8.657E+01	8.871E+01	9.088E+01	9.306E+01	9.525E+01	9.746E+01	9.968E+01	1.019E+02	1.042E+02	1.064E+02	1.087E+02	
i145	0.000E+00	7.181E-15	7.266E-15	7.285E-15	7.305E-15	7.325E-15	7.345E-15	7.364E-15	7.384E-15	7.404E-15	7.423E-15	
xe145	0.000E+00	4.616E-10	4.674E-10	4.688E-10	4.703E-10	4.719E-10	4.734E-10	4.749E-10	4.764E-10	4.780E-10	4.795E-10	
cs145	0.000E+00	1.764E-08	1.781E-08	1.782E-08	1.783E-08	1.784E-08	1.786E-08	1.787E-08	1.789E-08	1.791E-08	1.792E-08	

case 3 fission products page 72
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
ba145	0.000E+00	2.355E-06	2.371E-06	2.365E-06	2.360E-06	2.354E-06	2.349E-06	2.344E-06	2.339E-06	2.334E-06	2.329E-06
la145	0.000E+00	2.774E-05	2.794E-05	2.788E-05	2.783E-05	2.778E-05	2.773E-05	2.768E-05	2.763E-05	2.758E-05	2.754E-05
ce145	0.000E+00	2.262E-04	2.279E-04	2.275E-04	2.272E-04	2.268E-04	2.265E-04	2.261E-04	2.258E-04	2.254E-04	2.251E-04
pr145	0.000E+00	2.701E-02	2.721E-02	2.717E-02	2.712E-02	2.708E-02	2.704E-02	2.700E-02	2.696E-02	2.692E-02	2.688E-02
nd145	7.309E+01	7.413E+01	7.520E+01	7.627E+01	7.733E+01	7.839E+01	7.945E+01	8.050E+01	8.154E+01	8.258E+01	8.361E+01
pm145	2.107E-05	2.216E-05	2.328E-05	2.443E-05	2.562E-05	2.684E-05	2.810E-05	2.939E-05	3.072E-05	3.209E-05	3.349E-05
sm145	3.093E-05	3.193E-05	3.297E-05	3.402E-05	3.509E-05	3.618E-05	3.728E-05	3.839E-05	3.952E-05	4.066E-05	4.182E-05
xe146	0.000E+00	2.604E-11	2.635E-11	2.641E-11	2.648E-11	2.655E-11	2.662E-11	2.669E-11	2.676E-11	2.683E-11	2.690E-11
cs146	0.000E+00	2.251E-09	2.267E-09	2.263E-09	2.259E-09	2.255E-09	2.251E-09	2.247E-09	2.243E-09	2.239E-09	2.236E-09
ba146	0.000E+00	6.237E-07	6.273E-07	6.251E-07	6.230E-07	6.210E-07	6.190E-07	6.171E-07	6.152E-07	6.133E-07	6.115E-07
la146	0.000E+00	4.585E-06	4.616E-06	4.604E-06	4.594E-06	4.584E-06	4.574E-06	4.564E-06	4.555E-06	4.545E-06	4.536E-06
ce146	0.000E+00	8.133E-04	8.197E-04	8.187E-04	8.178E-04	8.169E-04	8.160E-04	8.151E-04	8.143E-04	8.134E-04	8.126E-04
pr146	0.000E+00	1.464E-03	1.476E-03	1.474E-03	1.473E-03	1.471E-03	1.470E-03	1.468E-03	1.467E-03	1.465E-03	1.464E-03
nd146	6.703E+01	6.819E+01	6.938E+01	7.056E+01	7.174E+01	7.293E+01	7.412E+01	7.531E+01	7.650E+01	7.770E+01	7.890E+01
pm146	4.308E-04	4.432E-04	4.557E-04	4.683E-04	4.808E-04	4.934E-04	5.061E-04	5.188E-04	5.316E-04	5.445E-04	5.573E-04
sm146	5.837E-04	6.075E-04	6.321E-04	6.573E-04	6.830E-04	7.094E-04	7.364E-04	7.640E-04	7.922E-04	8.209E-04	8.503E-04
xe147	0.000E+00	2.912E-14	2.947E-14	2.955E-14	2.963E-14	2.971E-14	2.979E-14	2.987E-14	2.995E-14	3.003E-14	3.011E-14
cs147	0.000E+00	7.959E-11	8.052E-11	8.072E-11	8.094E-11	8.115E-11	8.136E-11	8.158E-11	8.179E-11	8.201E-11	8.223E-11
ba147	0.000E+00	3.323E-08	3.355E-08	3.356E-08	3.358E-08	3.360E-08	3.363E-08	3.365E-08	3.368E-08	3.371E-08	3.374E-08
la147	0.000E+00	1.394E-06	1.405E-06	1.404E-06	1.402E-06	1.401E-06	1.400E-06	1.399E-06	1.398E-06	1.397E-06	1.396E-06
ce147	0.000E+00	4.286E-05	4.321E-05	4.317E-05	4.314E-05	4.310E-05	4.307E-05	4.304E-05	4.300E-05	4.297E-05	4.294E-05
pr147	0.000E+00	6.535E-04	6.590E-04	6.585E-04	6.581E-04	6.576E-04	6.572E-04	6.568E-04	6.564E-04	6.560E-04	6.556E-04
nd147	1.441E-01	5.433E-01	6.885E-01	7.395E-01	7.572E-01	7.632E-01	7.650E-01	7.654E-01	7.653E-01	7.650E-01	7.646E-01
pm147	2.389E+01	2.363E+01	2.364E+01	2.373E+01	2.385E+01	2.398E+01	2.411E+01	2.424E+01	2.436E+01	2.447E+01	2.458E+01
sm147	9.799E+00	1.002E+01	1.023E+01	1.044E+01	1.065E+01	1.086E+01	1.107E+01	1.129E+01	1.150E+01	1.171E+01	1.192E+01
cs148	0.000E+00	5.519E-12	5.584E-12	5.599E-12	5.615E-12	5.630E-12	5.646E-12	5.662E-12	5.677E-12	5.693E-12	5.709E-12
ba148	0.000E+00	5.721E-09	5.783E-09	5.793E-09	5.803E-09	5.814E-09	5.825E-09	5.837E-09	5.848E-09	5.860E-09	5.872E-09
la148	0.000E+00	1.054E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07	1.063E-07
ce148	0.000E+00	3.019E-05	3.044E-05	3.042E-05	3.040E-05	3.038E-05	3.036E-05	3.035E-05	3.033E-05	3.031E-05	3.030E-05
pr148	0.000E+00	8.497E-05	8.572E-05	8.569E-05	8.568E-05	8.566E-05	8.564E-05	8.563E-05	8.562E-05	8.560E-05	8.559E-05
nd148	3.715E+01	3.776E+01	3.838E+01	3.899E+01	3.961E+01	4.023E+01	4.085E+01	4.147E+01	4.208E+01	4.270E+01	4.332E+01

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pm148   2.479E-03 7.284E-02 7.952E-02 8.051E-02 8.115E-02 8.179E-02 8.243E-02 8.306E-02 8.369E-02 8.429E-02 8.488E-02
pm148m .8.980E-02 1.270E-01 1.380E-01 1.416E-01 1.432E-01 1.443E-01 1.452E-01 1.461E-01 1.470E-01 1.478E-01 1.486E-01
sm148   8.935E+00 9.135E+00 9.399E+00 9.672E+00 9.949E+00 1.023E+01 1.051E+01 1.080E+01 1.109E+01 1.138E+01 1.168E+01
cs149   0.000E+00 5.397E-14 5.462E-14 5.476E-14 5.492E-14 5.507E-14 5.523E-14 5.538E-14 5.553E-14 5.569E-14 5.584E-14
ba149   0.000E+00 7.316E-10 7.401E-10 7.419E-10 7.438E-10 7.457E-10 7.477E-10 7.496E-10 7.516E-10 7.536E-10 7.556E-10
la149   0.000E+00 6.921E-08 6.990E-08 6.996E-08 7.003E-08 7.010E-08 7.018E-08 7.027E-08 7.036E-08 7.045E-08 7.055E-08
ce149   0.000E+00 1.453E-06 1.466E-06 1.465E-06 1.465E-06 1.464E-06 1.464E-06 1.464E-06 1.464E-06 1.464E-06 1.464E-06
pr149   0.000E+00 5.848E-05 5.904E-05 5.907E-05 5.910E-05 5.914E-05 5.917E-05 5.921E-05 5.925E-05 5.928E-05 5.932E-05
nd149   0.000E+00 2.841E-03 2.870E-03 2.872E-03 2.875E-03 2.878E-03 2.881E-03 2.884E-03 2.888E-03 2.891E-03 2.894E-03
pm149   9.985E-06 1.127E-01 1.179E-01 1.190E-01 1.195E-01 1.200E-01 1.204E-01 1.208E-01 1.212E-01 1.215E-01 1.219E-01
sm149   5.160E-01 3.248E-01 3.319E-01 3.368E-01 3.385E-01 3.391E-01 3.394E-01 3.396E-01 3.398E-01 3.399E-01 3.401E-01
eu149   1.059E-11 1.089E-11 1.117E-11 1.140E-11 1.161E-11 1.179E-11 1.195E-11 1.210E-11 1.223E-11 1.235E-11 1.245E-11
cs150   0.000E+00 3.532E-15 3.575E-15 3.584E-15 3.595E-15 3.605E-15 3.615E-15 3.626E-15 3.636E-15 3.646E-15 3.656E-15
ba150   0.000E+00 9.197E-11 9.308E-11 9.335E-11 9.363E-11 9.391E-11 9.419E-11 9.447E-11 9.475E-11 9.504E-11 9.532E-11
la150   0.000E+00 2.940E-09 2.974E-09 2.982E-09 2.990E-09 2.999E-09 3.007E-09 3.016E-09 3.025E-09 3.034E-09 3.043E-09
ce150   0.000E+00 5.028E-07 5.080E-07 5.086E-07 5.093E-07 5.100E-07 5.107E-07 5.115E-07 5.123E-07 5.131E-07 5.139E-07
pr150   0.000E+00 1.667E-06 1.685E-06 1.687E-06 1.690E-06 1.693E-06 1.696E-06 1.699E-06 1.702E-06 1.705E-06 1.708E-06
nd150   1.756E+01 1.788E+01 1.820E+01 1.852E+01 1.884E+01 1.916E+01 1.948E+01 1.980E+01 2.013E+01 2.045E+01 2.077E+01
pm150   0.000E+00 3.750E-05 3.964E-05 4.011E-05 4.042E-05 4.069E-05 4.095E-05 4.120E-05 4.145E-05 4.170E-05 4.194E-05

case 3                                                  fission products      page  73
power=  3.46mw, burnup=  3937.mwd, flux= 2.77E+13n/cm**2-sec

                        nuclide concentrations, grams
                        basis = fuel assembly (.1902 mtu)
     charge   16.4 d   32.8 d   49.2 d   65.6 d   82.0 d   98.4 d  114.8 d  131.2 d  147.6 d  164.0 d
sm150   2.851E+01 2.905E+01 2.953E+01 3.003E+01 3.053E+01 3.103E+01 3.153E+01 3.203E+01 3.254E+01 3.304E+01 3.354E+01
eu150   5.551E-08 5.682E-08 5.814E-08 5.944E-08 6.073E-08 6.202E-08 6.329E-08 6.457E-08 6.584E-08 6.712E-08 6.839E-08
ba151   0.000E+00 3.197E-13 3.236E-13 3.245E-13 3.254E-13 3.264E-13 3.273E-13 3.283E-13 3.293E-13 3.302E-13 3.312E-13
la151   0.000E+00 5.892E-10 5.966E-10 5.986E-10 6.006E-10 6.027E-10 6.049E-10 6.070E-10 6.092E-10 6.114E-10 6.137E-10
ce151   0.000E+00 3.666E-08 3.709E-08 3.718E-08 3.728E-08 3.739E-08 3.749E-08 3.760E-08 3.771E-08 3.782E-08 3.794E-08
pr151   0.000E+00 2.665E-06 2.695E-06 2.702E-06 2.708E-06 2.715E-06 2.722E-06 2.729E-06 2.736E-06 2.743E-06 2.750E-06
nd151   0.000E+00 1.763E-04 1.785E-04 1.790E-04 1.795E-04 1.800E-04 1.805E-04 1.810E-04 1.816E-04 1.821E-04 1.826E-04
pm151   4.228E-10 2.443E-02 2.473E-02 2.480E-02 2.487E-02 2.494E-02 2.501E-02 2.509E-02 2.516E-02 2.523E-02 2.530E-02
sm151   2.013E+00 1.998E+00 2.007E+00 2.018E+00 2.028E+00 2.039E+00 2.050E+00 2.062E+00 2.073E+00 2.084E+00 2.096E+00
eu151   4.118E-03 4.062E-03 4.008E-03 3.966E-03 3.931E-03 3.905E-03 3.884E-03 3.868E-03 3.857E-03 3.850E-03 3.845E-03
ba152   0.000E+00 2.375E-15 2.426E-15 2.455E-15 2.486E-15 2.518E-15 2.550E-15 2.583E-15 2.617E-15 2.651E-15 2.686E-15
la152   0.000E+00 3.397E-12 3.457E-12 3.487E-12 3.518E-12 3.550E-12 3.583E-12 3.617E-12 3.652E-12 3.687E-12 3.723E-12
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ce152	0.000E+00	3.245E-08	3.289E-08	3.304E-08	3.320E-08	3.337E-08	3.354E-08	3.372E-08	3.390E-08	3.409E-08	3.428E-08
pr152	0.000E+00	3.131E-07	3.170E-07	3.181E-07	3.193E-07	3.205E-07	3.217E-07	3.230E-07	3.242E-07	3.255E-07	3.267E-07
nd152	0.000E+00	1.090E-04	1.103E-04	1.107E-04	1.111E-04	1.115E-04	1.118E-04	1.122E-04	1.126E-04	1.130E-04	1.134E-04
pm152	0.000E+00	4.067E-05	4.118E-05	4.132E-05	4.146E-05	4.161E-05	4.175E-05	4.189E-05	4.204E-05	4.218E-05	4.232E-05
pm152m	0.000E+00	2.705E-06	2.744E-06	2.757E-06	2.770E-06	2.782E-06	2.795E-06	2.807E-06	2.819E-06	2.831E-06	2.842E-06
sm152	1.452E+01	1.475E+01	1.499E+01	1.522E+01	1.545E+01	1.568E+01	1.591E+01	1.614E+01	1.636E+01	1.658E+01	1.680E+01
eu152	7.205E-03	7.323E-03	7.431E-03	7.528E-03	7.615E-03	7.695E-03	7.768E-03	7.836E-03	7.899E-03	7.958E-03	8.013E-03
eu152m	0.000E+00	9.118E-06	9.111E-06	9.041E-06	8.991E-06	8.957E-06	8.937E-06	8.929E-06	8.930E-06	8.940E-06	8.956E-06
gd152	7.507E-03	7.673E-03	7.845E-03	8.014E-03	8.181E-03	8.347E-03	8.512E-03	8.676E-03	8.839E-03	9.002E-03	9.165E-03
la153	0.000E+00	2.129E-12	2.156E-12	2.163E-12	2.170E-12	2.178E-12	2.185E-12	2.192E-12	2.200E-12	2.207E-12	2.214E-12
ce153	0.000E+00	2.458E-09	2.490E-09	2.499E-09	2.509E-09	2.519E-09	2.529E-09	2.539E-09	2.549E-09	2.559E-09	2.570E-09
pr153	0.000E+00	8.851E-08	8.968E-08	9.004E-08	9.041E-08	9.080E-08	9.119E-08	9.158E-08	9.199E-08	9.239E-08	9.280E-08
nd153	0.000E+00	6.146E-06	6.225E-06	6.248E-06	6.272E-06	6.296E-06	6.320E-06	6.344E-06	6.368E-06	6.393E-06	6.417E-06
pm153	0.000E+00	3.570E-05	3.617E-05	3.631E-05	3.645E-05	3.660E-05	3.674E-05	3.688E-05	3.703E-05	3.717E-05	3.732E-05
sm153	1.272E-06	6.579E-02	6.755E-02	6.852E-02	6.950E-02	7.048E-02	7.146E-02	7.243E-02	7.340E-02	7.437E-02	7.534E-02
eu153	9.980E+00	1.015E+01	1.039E+01	1.064E+01	1.088E+01	1.113E+01	1.138E+01	1.163E+01	1.188E+01	1.213E+01	1.239E+01
gd153	3.329E-04	3.424E-04	3.523E-04	3.624E-04	3.727E-04	3.831E-04	3.937E-04	4.045E-04	4.153E-04	4.263E-04	4.375E-04
la154	0.000E+00	2.566E-14	2.599E-14	2.607E-14	2.617E-14	2.626E-14	2.635E-14	2.644E-14	2.653E-14	2.663E-14	2.672E-14
ce154	0.000E+00	3.456E-10	3.503E-10	3.518E-10	3.533E-10	3.549E-10	3.565E-10	3.581E-10	3.597E-10	3.613E-10	3.629E-10
pr154	0.000E+00	4.005E-09	4.066E-09	4.090E-09	4.115E-09	4.141E-09	4.167E-09	4.193E-09	4.219E-09	4.246E-09	4.273E-09
nd154	0.000E+00	1.803E-06	1.830E-06	1.840E-06	1.850E-06	1.860E-06	1.871E-06	1.881E-06	1.891E-06	1.902E-06	1.912E-06
pm154	0.000E+00	5.880E-06	5.967E-06	6.000E-06	6.033E-06	6.067E-06	6.101E-06	6.135E-06	6.168E-06	6.202E-06	6.236E-06
pm154m	0.000E+00	1.913E-06	1.942E-06	1.953E-06	1.964E-06	1.975E-06	1.986E-06	1.997E-06	2.007E-06	2.018E-06	2.028E-06
sm154	3.343E+00	3.414E+00	3.487E+00	3.560E+00	3.633E+00	3.706E+00	3.780E+00	3.855E+00	3.930E+00	4.005E+00	4.080E+00
eu154	1.494E+00	1.542E+00	1.590E+00	1.639E+00	1.688E+00	1.738E+00	1.789E+00	1.840E+00	1.891E+00	1.943E+00	1.995E+00
gd154	1.083E-01	1.135E-01	1.188E-01	1.242E-01	1.298E-01	1.356E-01	1.415E-01	1.476E-01	1.538E-01	1.602E-01	1.668E-01
la155	0.000E+00	1.305E-16	1.321E-16	1.325E-16	1.328E-16	1.332E-16	1.336E-16	1.340E-16	1.344E-16	1.348E-16	1.352E-16
ce155	0.000E+00	7.805E-12	7.909E-12	7.940E-12	7.973E-12	8.006E-12	8.039E-12	8.072E-12	8.106E-12	8.140E-12	8.174E-12
pr155	0.000E+00	9.275E-10	9.419E-10	9.478E-10	9.539E-10	9.602E-10	9.665E-10	9.728E-10	9.793E-10	9.858E-10	9.924E-10
nd155	0.000E+00	2.836E-07	2.881E-07	2.900E-07	2.919E-07	2.939E-07	2.958E-07	2.978E-07	2.998E-07	3.019E-07	3.039E-07
pm155	0.000E+00	1.727E-06	1.754E-06	1.766E-06	1.777E-06	1.789E-06	1.800E-06	1.812E-06	1.823E-06	1.835E-06	1.846E-06
sm155	0.000E+00	5.828E-05	5.923E-05	5.964E-05	6.006E-05	6.048E-05	6.090E-05	6.131E-05	6.173E-05	6.215E-05	6.256E-05
eu155	4.218E-01	4.334E-01	4.449E-01	4.563E-01	4.676E-01	4.790E-01	4.904E-01	5.018E-01	5.132E-01	5.248E-01	5.364E-01
gd155m	0.000E+00	3.619E-14	3.529E-14	3.514E-14	3.561E-14	3.641E-14	3.742E-14	3.854E-14	3.974E-14	4.100E-14	4.230E-14
gd155	9.332E-03	7.574E-03	6.639E-03	6.190E-03	6.008E-03	5.973E-03	6.018E-03	6.108E-03	6.222E-03	6.350E-03	6.487E-03
ce156	0.000E+00	6.909E-13	7.001E-13	7.029E-13	7.058E-13	7.087E-13	7.117E-13	7.147E-13	7.177E-13	7.207E-13	7.237E-13
pr156	0.000E+00	4.498E-11	4.573E-11	4.607E-11	4.642E-11	4.678E-11	4.714E-11	4.751E-11	4.788E-11	4.825E-11	4.863E-11
nd156	0.000E+00	1.085E-07	1.104E-07	1.113E-07	1.123E-07	1.132E-07	1.142E-07	1.152E-07	1.162E-07	1.172E-07	1.182E-07

case 3 fission products page 74
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
pm156	0.000E+00	2.369E-07	2.410E-07	2.429E-07	2.449E-07	2.469E-07	2.488E-07	2.508E-07	2.528E-07	2.548E-07	2.568E-07
sm156	0.000E+00	9.409E-04	9.569E-04	9.643E-04	9.717E-04	9.792E-04	9.866E-04	9.939E-04	1.001E-03	1.009E-03	1.016E-03
eu156	6.292E-02	1.364E-01	1.748E-01	1.954E-01	2.077E-01	2.163E-01	2.231E-01	2.291E-01	2.348E-01	2.403E-01	2.458E-01
gd156	4.307E+00	4.387E+00	4.507E+00	4.647E+00	4.799E+00	4.959E+00	5.124E+00	5.294E+00	5.468E+00	5.646E+00	5.829E+00
ce157	0.000E+00	1.186E-14	1.202E-14	1.206E-14	1.211E-14	1.216E-14	1.220E-14	1.225E-14	1.230E-14	1.235E-14	1.240E-14
pr157	0.000E+00	6.817E-12	6.927E-12	6.975E-12	7.025E-12	7.075E-12	7.126E-12	7.177E-12	7.229E-12	7.282E-12	7.335E-12
nd157	0.000E+00	3.401E-09	3.465E-09	3.498E-09	3.531E-09	3.566E-09	3.601E-09	3.636E-09	3.671E-09	3.707E-09	3.744E-09
pm157	0.000E+00	4.917E-07	5.010E-07	5.058E-07	5.106E-07	5.156E-07	5.205E-07	5.255E-07	5.305E-07	5.355E-07	5.406E-07
sm157	0.000E+00	8.347E-06	8.497E-06	8.571E-06	8.646E-06	8.721E-06	8.796E-06	8.871E-06	8.946E-06	9.021E-06	9.096E-06
eu157	2.960E-18	1.128E-03	1.190E-03	1.222E-03	1.245E-03	1.264E-03	1.281E-03	1.297E-03	1.313E-03	1.328E-03	1.344E-03
gd157	1.173E-02	8.800E-03	9.044E-03	9.302E-03	9.492E-03	9.644E-03	9.779E-03	9.907E-03	1.003E-02	1.016E-02	1.028E-02
pr158	0.000E+00	1.578E-13	1.602E-13	1.613E-13	1.624E-13	1.635E-13	1.646E-13	1.657E-13	1.668E-13	1.680E-13	1.691E-13
nd158	0.000E+00	6.136E-10	6.251E-10	6.310E-10	6.371E-10	6.432E-10	6.495E-10	6.558E-10	6.622E-10	6.687E-10	6.753E-10
pm158	0.000E+00	8.115E-09	8.278E-09	8.368E-09	8.461E-09	8.554E-09	8.648E-09	8.743E-09	8.839E-09	8.936E-09	9.033E-09
sm158	0.000E+00	2.936E-06	2.991E-06	3.019E-06	3.048E-06	3.077E-06	3.106E-06	3.135E-06	3.164E-06	3.193E-06	3.222E-06
eu158	0.000E+00	2.762E-05	2.814E-05	2.840E-05	2.866E-05	2.893E-05	2.920E-05	2.946E-05	2.973E-05	2.999E-05	3.025E-05
gd158	1.292E+00	1.326E+00	1.359E+00	1.393E+00	1.428E+00	1.464E+00	1.500E+00	1.537E+00	1.574E+00	1.612E+00	1.650E+00
pr159	0.000E+00	6.873E-15	6.975E-15	7.015E-15	7.055E-15	7.096E-15	7.138E-15	7.180E-15	7.223E-15	7.265E-15	7.308E-15
nd159	0.000E+00	1.298E-11	1.322E-11	1.334E-11	1.347E-11	1.359E-11	1.372E-11	1.385E-11	1.399E-11	1.412E-11	1.425E-11
pm159	0.000E+00	1.448E-09	1.479E-09	1.497E-09	1.516E-09	1.535E-09	1.553E-09	1.573E-09	1.592E-09	1.611E-09	1.631E-09
sm159	0.000E+00	5.832E-07	5.949E-07	6.012E-07	6.077E-07	6.142E-07	6.207E-07	6.272E-07	6.338E-07	6.404E-07	6.470E-07
eu159	0.000E+00	5.475E-06	5.581E-06	5.637E-06	5.694E-06	5.750E-06	5.807E-06	5.864E-06	5.921E-06	5.978E-06	6.035E-06
gd159	4.384E-16	3.798E-04	3.878E-04	3.923E-04	3.969E-04	4.015E-04	4.062E-04	4.108E-04	4.155E-04	4.202E-04	4.250E-04
tb159	1.852E-01	1.896E-01	1.946E-01	1.995E-01	2.046E-01	2.096E-01	2.147E-01	2.199E-01	2.251E-01	2.303E-01	2.356E-01
nd160	0.000E+00	9.313E-13	9.470E-13	9.543E-13	9.618E-13	9.693E-13	9.770E-13	9.848E-13	9.927E-13	1.001E-12	1.009E-12
pm160	0.000E+00	3.913E-11	3.997E-11	4.047E-11	4.097E-11	4.148E-11	4.200E-11	4.252E-11	4.305E-11	4.359E-11	4.413E-11
sm160	0.000E+00	7.752E-08	7.911E-08	7.999E-08	8.088E-08	8.178E-08	8.269E-08	8.361E-08	8.452E-08	8.544E-08	8.637E-08
eu160	0.000E+00	9.010E-08	9.184E-08	9.276E-08	9.369E-08	9.462E-08	9.555E-08	9.649E-08	9.742E-08	9.835E-08	9.928E-08
gd160	8.411E-02	8.635E-02	8.863E-02	9.093E-02	9.325E-02	9.560E-02	9.797E-02	1.004E-01	1.028E-01	1.052E-01	1.077E-01
tb160	3.187E-03	3.347E-03	3.507E-03	3.662E-03	3.811E-03	3.957E-03	4.100E-03	4.241E-03	4.380E-03	4.519E-03	4.656E-03
dy160	9.815E-03	1.019E-02	1.059E-02	1.100E-02	1.143E-02	1.188E-02	1.235E-02	1.283E-02	1.332E-02	1.383E-02	1.435E-02

nd161	0.000E+00	1.411E-14	1.433E-14	1.443E-14	1.453E-14	1.462E-14	1.472E-14	1.482E-14	1.492E-14	1.503E-14	1.513E-14
pm161	0.000E+00	4.797E-12	4.898E-12	4.956E-12	5.016E-12	5.076E-12	5.137E-12	5.199E-12	5.262E-12	5.325E-12	5.389E-12
sm161	0.000E+00	1.084E-09	1.108E-09	1.121E-09	1.135E-09	1.149E-09	1.163E-09	1.177E-09	1.191E-09	1.206E-09	1.220E-09
cu161	0.000E+00	3.303E-08	3.368E-08	3.403E-08	3.439E-08	3.475E-08	3.511E-08	3.547E-08	3.583E-08	3.619E-08	3.655E-08
gd161	0.000E+00	2.411E-07	2.458E-07	2.482E-07	2.507E-07	2.532E-07	2.556E-07	2.581E-07	2.605E-07	2.630E-07	2.654E-07
tb161	4.127E-05	5.674E-04	6.803E-04	7.088E-04	7.212E-04	7.303E-04	7.389E-04	7.473E-04	7.556E-04	7.640E-04	7.723E-04
dy161	3.053E-02	3.071E-02	3.131E-02	3.200E-02	3.272E-02	3.344E-02	3.416E-02	3.490E-02	3.563E-02	3.638E-02	3.712E-02
pm162	0.000E+00	1.024E-13	1.042E-13	1.052E-13	1.062E-13	1.072E-13	1.082E-13	1.092E-13	1.102E-13	1.113E-13	1.123E-13
sm162	0.000E+00	1.720E-10	1.755E-10	1.774E-10	1.794E-10	1.814E-10	1.834E-10	1.855E-10	1.875E-10	1.896E-10	1.917E-10
cu162	0.000E+00	3.230E-08	3.292E-08	3.325E-08	3.358E-08	3.391E-08	3.425E-08	3.458E-08	3.491E-08	3.524E-08	3.557E-08
gd162	0.000E+00	2.364E-07	2.408E-07	2.429E-07	2.451E-07	2.472E-07	2.494E-07	2.515E-07	2.536E-07	2.557E-07	2.577E-07
tb162	0.000E+00	2.225E-07	2.266E-07	2.286E-07	2.306E-07	2.326E-07	2.346E-07	2.366E-07	2.386E-07	2.405E-07	2.425E-07
tb162m	0.000E+00	7.056E-08	7.174E-08	7.227E-08	7.279E-08	7.331E-08	7.381E-08	7.431E-08	7.479E-08	7.527E-08	7.573E-08
dy162	2.172E-02	2.232E-02	2.294E-02	2.355E-02	2.417E-02	2.480E-02	2.543E-02	2.607E-02	2.671E-02	2.736E-02	2.801E-02
sm163	0.000E+00	3.250E-12	3.317E-12	3.354E-12	3.392E-12	3.430E-12	3.469E-12	3.509E-12	3.548E-12	3.588E-12	3.629E-12
cu163	0.000E+00	2.985E-10	3.044E-10	3.076E-10	3.108E-10	3.140E-10	3.173E-10	3.205E-10	3.238E-10	3.270E-10	3.302E-10
gd163	0.000E+00	1.546E-08	1.574E-08	1.588E-08	1.602E-08	1.616E-08	1.630E-08	1.644E-08	1.658E-08	1.671E-08	1.685E-08
tb163	0.000E+00	2.246E-07	2.286E-07	2.306E-07	2.326E-07	2.346E-07	2.366E-07	2.386E-07	2.405E-07	2.424E-07	2.443E-07
tb163m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

case 3 fission products page 75
power= 3.46mw, burnup= 3937.mwd, flux= 2.77E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	16.4 d	32.8 d	49.2 d	65.6 d	82.0 d	98.4 d	114.8 d	131.2 d	147.6 d	164.0 d
dy163	1.338E-02	1.383E-02	1.431E-02	1.479E-02	1.528E-02	1.577E-02	1.628E-02	1.680E-02	1.732E-02	1.786E-02	1.840E-02
sm164	0.000E+00	2.306E-13	2.350E-13	2.373E-13	2.397E-13	2.421E-13	2.445E-13	2.470E-13	2.495E-13	2.520E-13	2.545E-13
cu164	0.000E+00	7.101E-12	7.243E-12	7.321E-12	7.400E-12	7.479E-12	7.559E-12	7.639E-12	7.719E-12	7.799E-12	7.880E-12
gd164	0.000E+00	6.465E-08	6.583E-08	6.642E-08	6.701E-08	6.760E-08	6.819E-08	6.877E-08	6.934E-08	6.991E-08	7.048E-08
tb164	0.000E+00	1.254E-08	1.276E-08	1.287E-08	1.298E-08	1.309E-08	1.320E-08	1.331E-08	1.341E-08	1.352E-08	1.362E-08
dy164	3.215E-03	3.320E-03	3.429E-03	3.539E-03	3.652E-03	3.767E-03	3.884E-03	4.003E-03	4.125E-03	4.249E-03	4.376E-03
sm165	0.000E+00	3.371E-15	3.429E-15	3.456E-15	3.484E-15	3.512E-15	3.540E-15	3.569E-15	3.599E-15	3.628E-15	3.658E-15
cu165	0.000E+00	6.787E-13	6.923E-13	6.997E-13	7.072E-13	7.148E-13	7.224E-13	7.300E-13	7.377E-13	7.455E-13	7.532E-13
gd165	0.000E+00	4.578E-10	4.663E-10	4.705E-10	4.748E-10	4.790E-10	4.833E-10	4.875E-10	4.916E-10	4.958E-10	4.999E-10
tb165	0.000E+00	3.031E-09	3.085E-09	3.111E-09	3.137E-09	3.162E-09	3.187E-09	3.212E-09	3.237E-09	3.262E-09	3.286E-09
dy165	0.000E+00	1.531E-06	1.594E-06	1.644E-06	1.695E-06	1.747E-06	1.801E-06	1.855E-06	1.911E-06	1.968E-06	2.027E-06
dy165m	0.000E+00	1.045E-08	1.087E-08	1.121E-08	1.156E-08	1.192E-08	1.228E-08	1.265E-08	1.303E-08	1.342E-08	1.381E-08

ho165	3.648E-03	3.802E-03	3.963E-03	4.129E-03	4.300E-03	4.476E-03	4.657E-03	4.844E-03	5.035E-03	5.232E-03	5.434E-03
dy166	3.057E-09	1.201E-06	1.265E-06	1.278E-06	1.288E-06	1.299E-06	1.310E-06	1.320E-06	1.330E-06	1.340E-06	1.350E-06
ho166	1.495E-09	2.789E-06	2.949E-06	3.067E-06	3.187E-06	3.312E-06	3.440E-06	3.573E-06	3.709E-06	3.850E-06	3.994E-06
ho166m	8.392E-06	8.814E-06	9.256E-06	9.716E-06	1.019E-05	1.069E-05	1.121E-05	1.174E-05	1.230E-05	1.288E-05	1.348E-05
er166	5.531E-04	5.766E-04	6.052E-04	6.350E-04	6.659E-04	6.981E-04	7.314E-04	7.661E-04	8.020E-04	8.393E-04	8.780E-04
er167	8.449E-06	8.934E-06	9.446E-06	9.980E-06	1.054E-05	1.112E-05	1.173E-05	1.236E-05	1.302E-05	1.371E-05	1.443E-05
er167m	0.000E+00	3.004E-16	3.054E-16	3.075E-16	3.097E-16	3.118E-16	3.139E-16	3.159E-16	3.179E-16	3.199E-16	3.217E-16
er168	6.673E-06	7.162E-06	7.684E-06	8.237E-06	8.823E-06	9.443E-06	1.010E-05	1.079E-05	1.153E-05	1.230E-05	1.312E-05
er169	7.883E-10	4.336E-09	5.459E-09	5.826E-09	5.968E-09	6.041E-09	6.094E-09	6.139E-09	6.183E-09	6.225E-09	6.266E-09
er170	2.960E-07	3.037E-07	3.116E-07	3.194E-07	3.274E-07	3.354E-07	3.435E-07	3.516E-07	3.598E-07	3.681E-07	3.764E-07
er171	0.000E+00	2.731E-10	2.778E-10	2.800E-10	2.822E-10	2.843E-10	2.864E-10	2.885E-10	2.905E-10	2.925E-10	2.945E-10
er172	4.327E-14	1.120E-09	1.144E-09	1.154E-09	1.164E-09	1.174E-09	1.183E-09	1.193E-09	1.202E-09	1.212E-09	1.221E-09
totals	3.449E+03	3.507E+03	3.564E+03	3.622E+03	3.679E+03	3.737E+03	3.795E+03	3.852E+03	3.910E+03	3.967E+03	4.025E+03

flux	2.710E+13	2.743E+13	2.751E+13	2.759E+13	2.767E+13	2.775E+13	2.783E+13	2.791E+13	2.799E+13	2.807E+13

case 4 light elements page 76
decay, following reactor irradiation identified by: power= 3.08mw, burnup= 3937.mwd, flux= 2.33E+13n/cm**2-sec

nuclide concentrations, grams
basis =fuel assembly (.1902 mtu)

	charge	discharge	0.1 d	0.3 d	1.0 d	3.0 d	10.0 d	30.0 d	100.0 d	300.0 d	799.0 d
h 1	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04
fe 56	1.100E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03
zr 90	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04
zr 91	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04
zr 92	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04	1.695E+04
zr 94	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04
zr 96	2.883E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03
total	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05

case 4 actinides page 77
decay, following reactor irradiation identified by: power= 3.08mw, burnup= 3937.mwd, flux= 2.33E+13n/cm**2-sec

nuclide concentrations, grams
basis =fuel assembly (.1902 mtu)

	charge	discharge	0.1 d	0.3 d	1.0 d	3.0 d	10.0 d	30.0 d	100.0 d	300.0 d	799.0 d
u235	2.084E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03	1.790E+03
u238	1.828E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05	1.823E+05
total	1.867E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05	1.861E+05

case 4 fission products page 78
decay, following reactor irradiation identified by: power= 3.08mw, burnup= 3937.mwd, flux= 2.33E+13n/cm**2-sec

nuclide concentrations, grams
basis =fuel assembly (.1902 mtu)

	charge	discharge	0.1 d	0.3 d	1.0 d	3.0 d	10.0 d	30.0 d	100.0 d	300.0 d	799.0 d
kr 86	1.981E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01	2.255E+01
rb 87	2.586E+01	2.942E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01	2.943E+01
sr 88	3.704E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01	4.212E+01
y 89	4.694E+01	5.346E+01	5.347E+01	5.347E+01	5.350E+01	5.358E+01	5.384E+01	5.446E+01	5.566E+01	5.636E+01	5.641E+01
sr 90	5.834E+01	6.589E+01	6.589E+01	6.588E+01	6.588E+01	6.587E+01	6.584E+01	6.575E+01	6.544E+01	6.457E+01	6.243E+01
zr 91	5.961E+01	6.839E+01	6.840E+01	6.841E+01	6.845E+01	6.855E+01	6.891E+01	6.976E+01	7.158E+01	7.285E+01	7.298E+01
zr 92	6.771E+01	7.748E+01	7.749E+01	7.749E+01	7.750E+01	7.750E+01	7.750E+01	7.750E+01	7.750E+01	7.750E+01	7.750E+01
zr 93	4.979E+01	5.708E+01	5.708E+01	5.709E+01	5.710E+01	5.710E+01	5.710E+01	5.710E+01	5.710E+01	5.710E+01	5.710E+01
zr 94	7.993E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01
mo 95	6.905E+01	8.166E+01	8.166E+01	8.168E+01	8.173E+01	8.189E+01	8.243E+01	8.393E+01	8.806E+01	9.216E+01	9.276E+01
zr 96	8.322E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01	9.637E+01
mo 97	7.823E+01	9.081E+01	9.082E+01	9.083E+01	9.086E+01	9.089E+01	9.089E+01	9.089E+01	9.089E+01	9.089E+01	9.089E+01
mo 98	8.406E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01	9.803E+01
tc 99	8.409E+01	9.682E+01	9.683E+01	9.684E+01	9.690E+01	9.702E+01	9.717E+01	9.721E+01	9.721E+01	9.721E+01	9.721E+01
mo100	9.499E+01	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02	1.110E+02
ru101	7.901E+01	9.222E+01	9.222E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01	9.223E+01
ru102	7.564E+01	8.954E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01	8.955E+01
rh103	5.044E+01	5.733E+01	5.734E+01	5.736E+01	5.741E+01	5.757E+01	5.806E+01	5.919E+01	6.108E+01	6.183E+01	6.185E+01
ru104	5.081E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01	6.158E+01
pd105	3.648E+01	4.457E+01	4.457E+01	4.458E+01	4.461E+01	4.466E+01	4.470E+01	4.470E+01	4.470E+01	4.470E+01	4.470E+01
pd106	1.604E+01	2.162E+01	2.162E+01	2.162E+01	2.165E+01	2.171E+01	2.192E+01	2.252E+01	2.443E+01	2.871E+01	3.444E+01

pd107	1.913E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01	2.423E+01
i129	1.800E+01	2.123E+01	2.123E+01	2.123E+01	2.124E+01	2.124E+01	2.127E+01	2.132E+01	2.140E+01	2.142E+01	2.142E+01	
te130	3.662E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	4.295E+01	
xe131	4.961E+01	5.542E+01	5.543E+01	5.544E+01	5.548E+01	5.559E+01	5.587E+01	5.614E+01	5.621E+01	5.621E+01	5.621E+01	
xe132	1.030E+02	1.224E+02	1.225E+02	1.225E+02	1.225E+02	1.227E+02	1.228E+02	1.229E+02	1.229E+02	1.229E+02	1.229E+02	
cs133	1.233E+02	1.408E+02	1.408E+02	1.409E+02	1.410E+02	1.412E+02	1.417E+02	1.420E+02	1.420E+02	1.420E+02	1.420E+02	
xe134	1.539E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	1.793E+02	
cs135	5.235E+01	6.022E+01	6.022E+01	6.024E+01	6.027E+01	6.030E+01	6.030E+01	6.030E+01	6.030E+01	6.030E+01	6.030E+01	
xe136	2.143E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	2.516E+02	
cs137	1.255E+02	1.460E+02	1.460E+02	1.460E+02	1.460E+02	1.459E+02	1.459E+02	1.457E+02	1.451E+02	1.432E+02	1.388E+02	
ba138	1.313E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	1.527E+02	
la139	1.247E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	1.448E+02	
ce140	1.301E+02	1.490E+02	1.490E+02	1.490E+02	1.491E+02	1.494E+02	1.501E+02	1.511E+02	1.516E+02	1.516E+02	1.516E+02	
pr141	1.118E+02	1.286E+02	1.287E+02	1.287E+02	1.288E+02	1.290E+02	1.297E+02	1.312E+02	1.334E+02	1.340E+02	1.340E+02	
ce142	1.162E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	1.348E+02	
nd143	9.386E+01	1.032E+02	1.032E+02	1.032E+02	1.033E+02	1.035E+02	1.040E+02	1.049E+02	1.054E+02	1.054E+02	1.054E+02	
ce144	3.751E+01	3.848E+01	3.847E+01	3.846E+01	3.839E+01	3.820E+01	3.756E+01	3.578E+01	3.017E+01	1.855E+01	5.511E+00	
nd144	8.657E+01	1.087E+02	1.087E+02	1.087E+02	1.088E+02	1.090E+02	1.096E+02	1.114E+02	1.170E+02	1.286E+02	1.417E+02	
nd145	7.309E+01	8.361E+01	8.362E+01	8.363E+01	8.364E+01	8.364E+01	8.364E+01	8.364E+01	8.364E+01	8.364E+01	8.364E+01	
nd146	6.703E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	7.890E+01	
pm147	2.389E+01	2.458E+01	2.459E+01	2.459E+01	2.461E+01	2.466E+01	2.476E+01	2.470E+01	2.359E+01	2.041E+01	1.423E+01	
nd148	3.715E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	4.332E+01	
nd150	1.756E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	2.077E+01	
sm150	2.851E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	3.354E+01	
total	3.449E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	4.025E+03	

library information...

cross-section data taken from position number 4 of library on unit 33.

pass 1
pass 0
scale-system control module sas2 library
used a time-dependent neutron spectrum, for each of the above passes
pass 0 applies start-up fuel densiities
pass n applies mid time densities of nth library interval
first library updated was...
pass 1

```
pass  0
*scale-system control module sas2 library*
used a time-dependent neutron spectrum, for each of the above passes
 pass 0 applies start-up fuel densiities
 pass n applies mid time densities of nth library interval
first library updated was...
*******************************************************************************
*                                                                             *
*        prelim lwr origen-s binary working library--id = 1143                *
*      made from modified card-image origen-s libraries of scale 4.2          *
*    data from the light element, actinide, and fission product libraries     *
*     decay data, including gamma and total energy, are from endf/b-vi        *
*                                                                             *
*    neutron flux spectrum factors and cross sections were produced from      *
*   the "presas2" case updating all nuclides on the scale "burnup" library    *
*                                                                             *
*             fission product yields are from endf/b-v                        *
*                                                                             *
*         photon libraries use an 18-energy-group structure                   *
*        the photon data are from the master photon data base,                *
*         produced to include bremsstrahlung from uo2 matrix                  *
*                                                                             *
*     see information above this box (if present) for later updates           *
*                                                                             *
*******************************************************************************
*                                                                             *

*******************************************************************************

      .other identification and sizes of library.

       data set name:  C:\scale5\tmpdir\ft33f001

     8/15/  94    date library was produced

         1697   total number of nuclides in library
          689   number of light-element nuclides
          129   number of actinide nuclides
```

879 number of fission product nuclides

8025 number of nonzero off-diagonal matrix elements

****

case 5 light elements page 79
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
h 1	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03
h 2	5.040E+00	5.079E+00	5.119E+00	5.159E+00	5.199E+00	5.239E+00	5.279E+00	5.319E+00	5.359E+00	5.439E+00
h 3	3.223E-06	3.308E-06	3.390E-06	3.472E-06	3.552E-06	3.631E-06	3.709E-06	3.786E-06	3.863E-06	4.015E-06
h 4	0.000E+00	1.672E-25	1.717E-25	1.762E-25	1.805E-25	1.849E-25	1.892E-25	1.935E-25	1.978E-25	2.061E-25
he 3	4.815E-07	4.588E-07	4.382E-07	4.195E-07	4.027E-07	3.875E-07	3.738E-07	3.615E-07	3.506E-07	3.320E-07
he 4	1.735E+00	1.743E+00	1.750E+00	1.758E+00	1.766E+00	1.774E+00	1.782E+00	1.790E+00	1.798E+00	1.814E+00
he 6	0.000E+00	2.723E-16	2.729E-16	2.734E-16	2.739E-16	2.744E-16	2.749E-16	2.754E-16	2.759E-16	2.767E-16
li 6	2.025E-07	2.037E-07	2.049E-07	2.061E-07	2.072E-07	2.084E-07	2.095E-07	2.106E-07	2.117E-07	2.139E-07
li 7	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00
li 8	0.000E+00	4.511E-13	4.521E-13	4.530E-13	4.538E-13	4.546E-13	4.554E-13	4.562E-13	4.570E-13	4.583E-13
be 8	0.000E+00	1.077E-18	1.079E-18	1.081E-18	1.083E-18	1.085E-18	1.087E-18	1.089E-18	1.091E-18	1.094E-18
be 9	1.638E-06	1.640E-06	1.642E-06	1.644E-06	1.646E-06	1.647E-06	1.649E-06	1.651E-06	1.653E-06	1.657E-06
be 10	2.760E-05	2.789E-05	2.819E-05	2.849E-05	2.879E-05	2.909E-05	2.940E-05	2.972E-05	3.003E-05	3.068E-05
be 11	0.000E+00	1.874E-15	1.878E-15	1.881E-15	1.885E-15	1.888E-15	1.892E-15	1.895E-15	1.898E-15	1.904E-15
b 10	1.130E-03	1.049E-03	9.745E-04	9.048E-04	8.399E-04	7.796E-04	7.235E-04	6.714E-04	6.229E-04	5.360E-04
b 11	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01
b 12	0.000E+00	1.137E-14	1.140E-14	1.142E-14	1.144E-14	1.146E-14	1.148E-14	1.150E-14	1.152E-14	1.155E-14
c 12	1.076E-04	1.086E-04	1.097E-04	1.108E-04	1.118E-04	1.129E-04	1.140E-04	1.151E-04	1.162E-04	1.183E-04
c 13	2.483E+00	2.508E+00	2.533E+00	2.558E+00	2.583E+00	2.608E+00	2.633E+00	2.658E+00	2.684E+00	2.734E+00
c 14	6.123E-03	6.184E-03	6.245E-03	6.306E-03	6.367E-03	6.428E-03	6.489E-03	6.551E-03	6.612E-03	6.736E-03
c 15	0.000E+00	1.091E-11	1.094E-11	1.096E-11	1.098E-11	1.100E-11	1.102E-11	1.104E-11	1.106E-11	1.109E-11
n 13	0.000E+00	5.762E-20	5.905E-20	6.047E-20	6.191E-20	6.336E-20	6.483E-20	6.631E-20	6.782E-20	7.083E-20
n 14	2.837E-06	2.901E-06	2.966E-06	3.032E-06	3.099E-06	3.166E-06	3.233E-06	3.302E-06	3.371E-06	3.510E-06
n 15	2.347E-03	2.371E-03	2.395E-03	2.419E-03	2.443E-03	2.467E-03	2.491E-03	2.515E-03	2.539E-03	2.587E-03
n 16	0.000E+00	3.009E-10	3.016E-10	3.021E-10	3.027E-10	3.032E-10	3.037E-10	3.043E-10	3.048E-10	3.057E-10
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04

o 17	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01
o 18	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02
o 19	0.000E+00	1.391E-11	1.394E-11	1.397E-11	1.399E-11	1.402E-11	1.404E-11	1.407E-11	1.409E-11	1.413E-11	0.000E+00	
f 19	1.004E-04	1.014E-04	1.023E-04	1.033E-04	1.043E-04	1.053E-04	1.063E-04	1.073E-04	1.083E-04	1.103E-04	1.103E-04	
f 20	0.000E+00	1.297E-16	1.312E-16	1.327E-16	1.343E-16	1.358E-16	1.373E-16	1.388E-16	1.404E-16	1.433E-16	0.000E+00	
ti 46	3.108E-15	3.137E-15	3.215E-15	3.330E-15	3.476E-15	3.645E-15	3.834E-15	4.038E-15	4.255E-15	4.724E-15	5.029E-15	
ti 47	6.748E-05	6.813E-05	6.879E-05	6.944E-05	7.010E-05	7.075E-05	7.141E-05	7.207E-05	7.273E-05	7.405E-05	7.405E-05	
ti 48	1.513E-07	1.542E-07	1.573E-07	1.604E-07	1.635E-07	1.666E-07	1.698E-07	1.730E-07	1.763E-07	1.829E-07	1.829E-07	
ti 49	1.547E-04	1.562E-04	1.577E-04	1.592E-04	1.607E-04	1.623E-04	1.638E-04	1.653E-04	1.669E-04	1.699E-04	1.699E-04	
ti 50	7.285E-04	7.356E-04	7.427E-04	7.498E-04	7.569E-04	7.640E-04	7.712E-04	7.783E-04	7.855E-04	7.999E-04	7.999E-04	
ti 51	0.000E+00	1.058E-11	1.065E-11	1.071E-11	1.078E-11	1.085E-11	1.093E-11	1.100E-11	1.107E-11	1.121E-11	0.000E+00	
v 49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
v 50	2.621E-03	2.644E-03	2.668E-03	2.691E-03	2.715E-03	2.739E-03	2.762E-03	2.786E-03	2.809E-03	2.857E-03	2.857E-03	
v 51	4.737E-01	4.751E-01	4.782E-01	4.822E-01	4.865E-01	4.910E-01	4.956E-01	5.002E-01	5.049E-01	5.142E-01	5.184E-01	
v 52	0.000E+00	7.489E-09	7.542E-09	7.600E-09	7.663E-09	7.728E-09	7.794E-09	7.861E-09	7.928E-09	8.058E-09	0.000E+00	
v 53	0.000E+00	1.263E-11	1.265E-11	1.267E-11	1.269E-11	1.271E-11	1.273E-11	1.275E-11	1.278E-11	1.281E-11	0.000E+00	
v 54	0.000E+00	7.548E-14	7.573E-14	7.595E-14	7.616E-14	7.637E-14	7.659E-14	7.680E-14	7.702E-14	7.739E-14	0.000E+00	
cr 50	1.833E+01	1.833E+01	1.832E+01	1.832E+01	1.832E+01	1.831E+01	1.831E+01	1.830E+01	1.830E+01	1.829E+01	1.829E+01	
cr 51	3.718E-11	3.214E-03	4.675E-03	5.341E-03	5.647E-03	5.791E-03	5.861E-03	5.897E-03	5.919E-03	5.944E-03	1.789E-03	
cr 52	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	
cr 53	4.281E+01	4.281E+01	4.280E+01	4.279E+01	4.279E+01	4.278E+01	4.277E+01	4.276E+01	4.276E+01	4.274E+01	4.274E+01	
cr 54	1.230E+01	1.232E+01	1.233E+01	1.234E+01	1.235E+01	1.237E+01	1.238E+01	1.239E+01	1.240E+01	1.243E+01	1.243E+01	
cr 55	0.000E+00	8.080E-09	8.107E-09	8.129E-09	8.152E-09	8.175E-09	8.197E-09	8.220E-09	8.243E-09	8.282E-09	0.000E+00	
mn 54	1.635E-03	1.774E-03	1.904E-03	2.026E-03	2.140E-03	2.247E-03	2.347E-03	2.441E-03	2.528E-03	2.687E-03	2.416E-03	

case 5 light elements page 80
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d		
mn 55	2.830E+01	2.829E+01	2.829E+01	2.828E+01	2.827E+01	2.827E+01	2.826E+01	2.826E+01	2.825E+01	2.824E+01	2.824E+01	
mn 56	0.000E+00	4.216E-05	4.225E-05	4.231E-05	4.238E-05	4.245E-05	4.251E-05	4.258E-05	4.265E-05	4.275E-05	0.000E+00	
mn 57	0.000E+00	3.342E-11	3.354E-11	3.365E-11	3.376E-11	3.387E-11	3.398E-11	3.409E-11	3.421E-11	3.440E-11	0.000E+00	
mn 58	0.000E+00	7.734E-14	7.755E-14	7.774E-14	7.792E-14	7.811E-14	7.831E-14	7.850E-14	7.869E-14	7.903E-14	0.000E+00	
fe 54	6.706E+01	6.706E+01	6.706E+01	6.706E+01	6.705E+01	6.705E+01	6.705E+01	6.705E+01	6.704E+01	6.704E+01	6.704E+01	
fe 55	9.799E-02	9.830E-02	9.861E-02	9.891E-02	9.922E-02	9.952E-02	9.982E-02	1.001E-01	1.004E-01	1.010E-01	9.767E-02	
fe 56	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	1.099E+03	

fe 57	3.096E+01	3.100E+01	3.105E+01	3.110E+01	3.114E+01	3.119E+01	3.123E+01	3.128E+01	3.133E+01	3.142E+01	3.142E+01
fe 58	3.848E+00	3.849E+00	3.851E+00	3.853E+00	3.856E+00	3.858E+00	3.861E+00	3.863E+00	3.866E+00	3.872E+00	3.873E+00
fe 59	2.128E-09	7.075E-05	1.141E-04	1.408E-04	1.572E-04	1.674E-04	1.738E-04	1.779E-04	1.805E-04	1.836E-04	8.694E-05
co 58m	0.000E+00	5.339E-10	5.346E-10	5.351E-10	5.355E-10	5.360E-10	5.365E-10	5.369E-10	5.374E-10	5.380E-10	0.000E+00
co 58	4.486E-06	1.634E-03	2.747E-03	3.507E-03	4.027E-03	4.384E-03	4.628E-03	4.797E-03	4.914E-03	5.054E-03	3.161E-03
co 59	4.627E+00	4.623E+00	4.619E+00	4.615E+00	4.611E+00	4.607E+00	4.603E+00	4.599E+00	4.595E+00	4.587E+00	4.587E+00
co 60	2.811E-01	2.822E-01	2.834E-01	2.845E-01	2.857E-01	2.868E-01	2.879E-01	2.890E-01	2.901E-01	2.923E-01	2.873E-01
co 60m	0.000E+00	7.830E-07	7.841E-07	7.848E-07	7.855E-07	7.863E-07	7.870E-07	7.877E-07	7.885E-07	7.893E-07	0.000E+00
co 61	0.000E+00	5.249E-08	5.282E-08	5.312E-08	5.342E-08	5.372E-08	5.402E-08	5.432E-08	5.462E-08	5.517E-08	0.000E+00
co 62	0.000E+00	4.626E-12	4.636E-12	4.643E-12	4.651E-12	4.658E-12	4.665E-12	4.673E-12	4.680E-12	4.691E-12	0.000E+00
ni 58	3.009E+02	3.009E+02	3.008E+02	3.008E+02	3.008E+02	3.008E+02	3.007E+02	3.007E+02	3.007E+02	3.006E+02	3.006E+02
ni 59	1.989E+00	2.006E+00	2.024E+00	2.041E+00	2.058E+00	2.076E+00	2.093E+00	2.111E+00	2.128E+00	2.163E+00	2.163E+00
ni 60	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02
ni 61	5.809E+00	5.815E+00	5.820E+00	5.825E+00	5.830E+00	5.836E+00	5.841E+00	5.846E+00	5.852E+00	5.862E+00	5.862E+00
ni 62	1.669E+01	1.669E+01	1.669E+01	1.668E+01	1.668E+01	1.668E+01	1.667E+01	1.667E+01	1.667E+01	1.666E+01	1.666E+01
ni 63	3.687E-01	3.721E-01	3.756E-01	3.790E-01	3.825E-01	3.859E-01	3.894E-01	3.928E-01	3.963E-01	4.032E-01	4.029E-01
ni 64	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00
ni 65	0.000E+00	5.665E-07	5.678E-07	5.688E-07	5.699E-07	5.709E-07	5.719E-07	5.729E-07	5.739E-07	5.755E-07	0.000E+00
ni 66	0.000E+00	2.235E-11	2.245E-11	2.253E-11	2.261E-11	2.269E-11	2.277E-11	2.285E-11	2.294E-11	2.306E-11	1.030E-17
cu 62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cu 63	9.926E-03	1.015E-02	1.037E-02	1.060E-02	1.083E-02	1.106E-02	1.129E-02	1.152E-02	1.176E-02	1.224E-02	1.260E-02
cu 64	0.000E+00	2.261E-08	2.316E-08	2.371E-08	2.426E-08	2.482E-08	2.539E-08	2.596E-08	2.654E-08	2.770E-08	0.000E+00
cu 65	1.196E-02	1.208E-02	1.220E-02	1.232E-02	1.244E-02	1.256E-02	1.268E-02	1.279E-02	1.291E-02	1.315E-02	1.315E-02
cu 66	0.000E+00	8.739E-11	8.845E-11	8.947E-11	9.049E-11	9.152E-11	9.255E-11	9.359E-11	9.463E-11	9.665E-11	1.605E-20
cu 67	0.000E+00	1.689E-14	1.714E-14	1.737E-14	1.760E-14	1.783E-14	1.806E-14	1.830E-14	1.853E-14	1.898E-14	4.676E-20
zn 63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zn 64	5.684E-06	6.021E-06	6.373E-06	6.734E-06	7.104E-06	7.482E-06	7.869E-06	8.264E-06	8.669E-06	9.505E-06	9.515E-06
zn 65	1.937E-10	2.903E-10	3.856E-10	4.798E-10	5.733E-10	6.662E-10	7.589E-10	8.515E-10	9.443E-10	1.131E-09	9.868E-10
zn 66	2.723E-05	2.777E-05	2.832E-05	2.887E-05	2.943E-05	2.999E-05	3.057E-05	3.114E-05	3.173E-05	3.291E-05	3.291E-05
zn 67	1.511E-08	1.556E-08	1.602E-08	1.649E-08	1.697E-08	1.746E-08	1.796E-08	1.847E-08	1.899E-08	2.006E-08	2.006E-08
zn 68	9.093E-11	9.456E-11	9.831E-11	1.022E-10	1.062E-10	1.103E-10	1.145E-10	1.189E-10	1.234E-10	1.328E-10	1.328E-10
zn 69	0.000E+00	6.449E-18	6.719E-18	6.996E-18	7.282E-18	7.577E-18	7.882E-18	8.197E-18	8.522E-18	9.197E-18	0.000E+00
zn 69m	0.000E+00	6.352E-18	6.618E-18	6.891E-18	7.172E-18	7.463E-18	7.764E-18	8.074E-18	8.394E-18	9.058E-18	0.000E+00
zn 70	6.877E-19	7.291E-19	7.728E-19	8.187E-19	8.670E-19	9.176E-19	9.709E-19	1.027E-18	1.085E-18	1.212E-18	1.212E-18
zn 71	0.000E+00	5.717E-29	6.073E-29	6.445E-29	6.838E-29	7.250E-29	7.685E-29	8.141E-29	8.622E-29	9.650E-29	0.000E+00
zn 71m	0.000E+00	5.815E-28	6.177E-28	6.556E-28	6.955E-28	7.374E-28	7.816E-28	8.281E-28	8.769E-28	9.816E-28	0.000E+00
sr 84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

sr 85m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 87	1.003E-03	1.012E-03	1.022E-03	1.031E-03	1.041E-03	1.050E-03	1.060E-03	1.070E-03	1.079E-03	1.098E-03	1.098E-03	
sr 87m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr 88	9.467E-02	9.559E-02	9.652E-02	9.745E-02	9.839E-02	9.932E-02	1.003E-01	1.012E-01	1.021E-01	1.040E-01	1.040E-01	

case 5 light elements page 81
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
sr 89	8.520E-09	5.748E-05	9.482E-05	1.191E-04	1.349E-04	1.453E-04	1.521E-04	1.566E-04	1.596E-04	1.631E-04	8.448E-05
sr 90	2.452E-06	2.493E-06	2.534E-06	2.576E-06	2.619E-06	2.662E-06	2.706E-06	2.750E-06	2.794E-06	2.885E-06	2.876E-06
sr 91	0.000E+00	7.996E-08	8.014E-08	8.028E-08	8.043E-08	8.057E-08	8.071E-08	8.086E-08	8.100E-08	8.123E-08	0.000E+00
sr 93	0.000E+00	1.149E-11	1.151E-11	1.153E-11	1.155E-11	1.157E-11	1.159E-11	1.162E-11	1.164E-11	1.167E-11	0.000E+00
y 89	7.212E-03	7.225E-03	7.259E-03	7.306E-03	7.361E-03	7.422E-03	7.486E-03	7.553E-03	7.622E-03	7.762E-03	7.841E-03
y 89m	2.913E-18	1.965E-14	3.242E-14	4.073E-14	4.614E-14	4.968E-14	5.201E-14	5.355E-14	5.459E-14	5.579E-14	2.889E-14
y 90	6.374E-10	3.186E-04	3.194E-04	3.200E-04	3.205E-04	3.211E-04	3.217E-04	3.223E-04	3.228E-04	3.236E-04	2.009E-09
y 90m	0.000E+00	7.288E-13	7.338E-13	7.399E-13	7.468E-13	7.543E-13	7.622E-13	7.704E-13	7.788E-13	7.954E-13	0.000E+00
y 91	1.111E-07	1.504E-04	2.539E-04	3.254E-04	3.747E-04	4.088E-04	4.325E-04	4.491E-04	4.607E-04	4.749E-04	2.690E-04
y 92	0.000E+00	1.064E-06	1.066E-06	1.068E-06	1.070E-06	1.072E-06	1.074E-06	1.076E-06	1.078E-06	1.081E-06	0.000E+00
y 93	0.000E+00	6.133E-10	6.147E-10	6.158E-10	6.169E-10	6.180E-10	6.190E-10	6.201E-10	6.212E-10	6.229E-10	0.000E+00
y 94	0.000E+00	5.793E-09	5.806E-09	5.817E-09	5.827E-09	5.837E-09	5.848E-09	5.858E-09	5.868E-09	5.885E-09	0.000E+00
y 96	0.000E+00	2.091E-13	2.095E-13	2.099E-13	2.103E-13	2.107E-13	2.110E-13	2.114E-13	2.118E-13	2.123E-13	0.000E+00
zr 89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zr 90	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04
zr 91	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04
zr 92	1.695E+04	1.695E+04	1.695E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04
zr 93	1.602E+01	1.617E+01	1.633E+01	1.648E+01	1.664E+01	1.680E+01	1.695E+01	1.711E+01	1.727E+01	1.758E+01	1.758E+01
zr 94	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04
zr 95	8.560E-05	4.765E-02	8.151E-02	1.056E-01	1.228E-01	1.351E-01	1.439E-01	1.502E-01	1.548E-01	1.605E-01	9.547E-02
zr 96	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03	2.881E+03
zr 97	0.000E+00	2.871E-03	2.878E-03	2.883E-03	2.888E-03	2.893E-03	2.898E-03	2.903E-03	2.908E-03	2.916E-03	8.806E-24
nb 91	8.420E-16	9.522E-16	1.067E-15	1.187E-15	1.311E-15	1.441E-15	1.576E-15	1.715E-15	1.861E-15	2.168E-15	2.168E-15
nb 92	1.622E-12	1.833E-12	2.054E-12	2.284E-12	2.523E-12	2.772E-12	3.031E-12	3.300E-12	3.580E-12	4.170E-12	4.170E-12
nb 93	2.341E-06	2.437E-06	2.535E-06	2.635E-06	2.738E-06	2.842E-06	2.948E-06	3.057E-06	3.167E-06	3.395E-06	3.573E-06
nb 93m	2.558E-05	2.611E-05	2.665E-05	2.720E-05	2.775E-05	2.830E-05	2.886E-05	2.942E-05	2.998E-05	3.113E-05	3.200E-05

nb 94	1.288E-09	1.457E-09	1.634E-09	1.818E-09	2.010E-09	2.209E-09	2.416E-09	2.631E-09	2.854E-09	3.325E-09	3.325E-09
nb 95	1.035E-04	7.088E-03	2.090E-02	3.546E-02	4.834E-02	5.886E-02	6.709E-02	7.335E-02	7.804E-02	8.410E-02	7.275E-02
nb 95m	5.678E-08	2.550E-05	4.793E-05	6.390E-05	7.529E-05	8.342E-05	8.925E-05	9.343E-05	9.645E-05	1.034E-04	6.334E-05
nb 96	0.000E+00	4.672E-08	1.386E-07	2.364E-07	3.235E-07	3.951E-07	4.515E-07	4.948E-07	5.276E-07	5.664E-07	7.968E-22
nb 97	0.000E+00	2.042E-04	2.046E-04	2.050E-04	2.053E-04	2.057E-04	2.061E-04	2.064E-04	2.068E-04	2.073E-04	6.747E-25
nb 97m	0.000E+00	2.684E-06	2.690E-06	2.695E-06	2.700E-06	2.705E-06	2.709E-06	2.714E-06	2.719E-06	2.726E-06	8.241E-27
nb 98	0.000E+00	3.990E-17	4.077E-17	4.163E-17	4.250E-17	4.338E-17	4.427E-17	4.518E-17	4.610E-17	4.793E-17	0.000E+00
nb100	0.000E+00	2.635E-25	2.665E-25	2.694E-25	2.725E-25	2.756E-25	2.787E-25	2.819E-25	2.852E-25	2.918E-25	0.000E+00
mo 92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 94	1.268E-13	1.308E-13	1.354E-13	1.405E-13	1.462E-13	1.524E-13	1.593E-13	1.668E-13	1.749E-13	1.932E-13	2.081E-13
mo 95	5.585E+00	5.583E+00	5.587E+00	5.601E+00	5.623E+00	5.653E+00	5.689E+00	5.729E+00	5.773E+00	5.867E+00	5.943E+00
mo 96	1.674E-01	1.714E-01	1.754E-01	1.794E-01	1.835E-01	1.875E-01	1.917E-01	1.958E-01	2.000E-01	2.085E-01	2.085E-01
mo 97	9.177E+00	9.262E+00	9.351E+00	9.440E+00	9.529E+00	9.618E+00	9.707E+00	9.797E+00	9.887E+00	1.007E+01	1.007E+01
mo 98	5.564E-02	5.673E-02	5.783E-02	5.894E-02	6.007E-02	6.121E-02	6.236E-02	6.352E-02	6.470E-02	6.709E-02	6.709E-02
mo 99	0.000E+00	2.953E-07	3.018E-07	3.082E-07	3.146E-07	3.212E-07	3.278E-07	3.345E-07	3.413E-07	3.548E-07	1.955E-12
mo100	5.673E-09	5.717E-09	5.770E-09	5.823E-09	5.878E-09	5.934E-09	5.992E-09	6.050E-09	6.110E-09	6.234E-09	6.234E-09
mo101	0.000E+00	6.767E-17	6.844E-17	6.921E-17	6.998E-17	7.077E-17	7.159E-17	7.241E-17	7.326E-17	7.495E-17	0.000E+00
tc 97	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tc 97m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tc 98	1.966E-11	2.045E-11	2.127E-11	2.211E-11	2.298E-11	2.387E-11	2.480E-11	2.575E-11	2.672E-11	2.876E-11	2.876E-11
tc 99	9.198E-06	9.430E-06	9.702E-06	9.979E-06	1.026E-05	1.055E-05	1.085E-05	1.115E-05	1.145E-05	1.208E-05	1.213E-05
tc100	0.000E+00	1.200E-13	1.237E-13	1.275E-13	1.314E-13	1.353E-13	1.393E-13	1.434E-13	1.476E-13	1.562E-13	0.000E+00

case 5 light elements page 82
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
tc101	0.000E+00	6.582E-17	6.657E-17	6.731E-17	6.806E-17	6.884E-17	6.962E-17	7.043E-17	7.125E-17	7.290E-17	0.000E+00
cd106	4.887E-41	9.789E-41	1.488E-40	2.019E-40	2.571E-40	3.148E-40	3.749E-40	4.377E-40	5.035E-40	6.447E-40	6.447E-40
cd107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd108	5.410E-35	1.053E-34	1.584E-34	2.138E-34	2.715E-34	3.317E-34	3.946E-34	4.604E-34	5.293E-34	6.774E-34	6.774E-34
cd109	4.417E-39	7.598E-39	1.285E-38	2.015E-38	2.947E-38	4.080E-38	5.413E-38	6.948E-38	8.686E-38	1.278E-37	1.189E-37
cd110	5.234E-31	5.917E-31	6.686E-31	7.549E-31	8.517E-31	9.599E-31	1.081E-30	1.216E-30	1.365E-30	1.716E-30	1.723E-30
cd111	1.107E-06	1.118E-06	1.128E-06	1.139E-06	1.150E-06	1.160E-06	1.171E-06	1.181E-06	1.192E-06	1.213E-06	1.213E-06

cd111m	0.000E+00	3.272E-39	3.272E-39	3.926E-39	4.580E-39	4.580E-39	5.235E-39	5.889E-39	7.198E-39	8.507E-39	0.000E+00
cd112	9.482E-06	9.571E-06	9.660E-06	9.749E-06	9.838E-06	9.927E-06	1.002E-05	1.011E-05	1.020E-05	1.037E-05	1.037E-05
cd113	4.533E-08	4.529E-08	4.528E-08	4.527E-08	4.527E-08	4.528E-08	4.529E-08	4.529E-08	4.530E-08	4.532E-08	4.532E-08
cd113m	1.447E-08	1.474E-08	1.501E-08	1.528E-08	1.555E-08	1.583E-08	1.611E-08	1.639E-08	1.667E-08	1.725E-08	1.714E-08
cd114	5.217E-04	5.248E-04	5.312E-04	5.396E-04	5.495E-04	5.602E-04	5.716E-04	5.834E-04	5.954E-04	6.202E-04	6.330E-04
cd115	0.000E+00	6.202E-09	6.287E-09	6.391E-09	6.511E-09	6.641E-09	6.778E-09	6.921E-09	7.067E-09	7.363E-09	2.408E-15
cd115m	1.296E-13	5.347E-09	8.672E-09	1.079E-08	1.218E-08	1.315E-08	1.387E-08	1.443E-08	1.491E-08	1.575E-08	7.467E-09
cd116	6.967E-06	7.036E-06	7.105E-06	7.174E-06	7.243E-06	7.312E-06	7.382E-06	7.451E-06	7.521E-06	7.660E-06	7.660E-06
cd117	0.000E+00	2.822E-10	2.829E-10	2.834E-10	2.839E-10	2.844E-10	2.849E-10	2.854E-10	2.859E-10	2.868E-10	0.000E+00
cd117m	0.000E+00	2.940E-13	2.976E-13	3.010E-13	3.045E-13	3.079E-13	3.114E-13	3.149E-13	3.184E-13	3.252E-13	0.000E+00
cd119	0.000E+00	1.464E-13	1.467E-13	1.469E-13	1.472E-13	1.475E-13	1.477E-13	1.480E-13	1.483E-13	1.487E-13	0.000E+00
cd121	0.000E+00	3.775E-15	3.784E-15	3.790E-15	3.797E-15	3.804E-15	3.810E-15	3.817E-15	3.823E-15	3.834E-15	0.000E+00
in113	2.832E-01	2.832E-01	2.837E-01	2.845E-01	2.857E-01	2.870E-01	2.886E-01	2.903E-01	2.922E-01	2.963E-01	2.995E-01
in113m	2.142E-07	1.708E-06	2.946E-06	3.971E-06	4.821E-06	5.525E-06	6.110E-06	6.595E-06	6.998E-06	7.613E-06	5.704E-06
in114	2.777E-13	7.678E-09	9.662E-09	1.096E-08	1.182E-08	1.240E-08	1.282E-08	1.312E-08	1.335E-08	1.371E-08	4.491E-09
in114m	1.726E-08	1.895E-04	3.118E-04	3.910E-04	4.428E-04	4.773E-04	5.007E-04	5.172E-04	5.294E-04	5.467E-04	2.792E-04
in115	4.580E-06	4.590E-06	4.602E-06	4.616E-06	4.630E-06	4.644E-06	4.658E-06	4.672E-06	4.686E-06	4.714E-06	4.722E-06
in116	0.000E+00	5.104E-12	5.116E-12	5.125E-12	5.135E-12	5.144E-12	5.153E-12	5.163E-12	5.172E-12	5.187E-12	0.000E+00
in116m	0.000E+00	1.152E-10	1.158E-10	1.163E-10	1.169E-10	1.174E-10	1.180E-10	1.186E-10	1.191E-10	1.202E-10	0.000E+00
in117	0.000E+00	9.325E-10	9.346E-10	9.363E-10	9.380E-10	9.397E-10	9.414E-10	9.430E-10	9.447E-10	9.474E-10	0.000E+00
in117m	0.000E+00	2.003E-10	2.007E-10	2.011E-10	2.015E-10	2.018E-10	2.022E-10	2.025E-10	2.029E-10	2.035E-10	0.000E+00
in118	0.000E+00	5.944E-13	5.958E-13	5.969E-13	5.979E-13	5.990E-13	6.001E-13	6.011E-13	6.022E-13	6.039E-13	0.000E+00
in119	0.000E+00	1.234E-11	1.237E-11	1.239E-11	1.242E-11	1.244E-11	1.246E-11	1.248E-11	1.251E-11	1.254E-11	0.000E+00
in119m	0.000E+00	8.814E-13	8.834E-13	8.850E-13	8.865E-13	8.881E-13	8.897E-13	8.912E-13	8.928E-13	8.953E-13	0.000E+00
in120	0.000E+00	1.041E-22	1.046E-22	1.050E-22	1.053E-22	1.057E-22	1.061E-22	1.065E-22	1.068E-22	1.075E-22	0.000E+00
in120m	0.000E+00	2.342E-21	2.353E-21	2.361E-21	2.370E-21	2.378E-21	2.387E-21	2.396E-21	2.404E-21	2.418E-21	0.000E+00
in121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sn112	1.479E+01	1.479E+01	1.479E+01	1.478E+01	1.478E+01	1.478E+01	1.477E+01	1.477E+01	1.477E+01	1.476E+01	1.476E+01
sn113	3.567E-04	2.845E-03	4.906E-03	6.613E-03	8.028E-03	9.201E-03	1.017E-02	1.098E-02	1.165E-02	1.268E-02	9.496E-03
sn113m	0.000E+00	5.926E-07	5.939E-07	5.948E-07	5.958E-07	5.967E-07	5.976E-07	5.986E-07	5.995E-07	6.010E-07	0.000E+00
sn114	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01
sn115	5.405E+00	5.400E+00	5.396E+00	5.391E+00	5.387E+00	5.383E+00	5.378E+00	5.374E+00	5.369E+00	5.360E+00	5.360E+00
sn116	2.286E+02	2.286E+02	2.286E+02	2.286E+02	2.286E+02	2.286E+02	2.286E+02	2.286E+02	2.285E+02	2.285E+02	2.285E+02
sn117	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02
sn117m	7.401E-20	9.387E-03	1.127E-02	1.167E-02	1.176E-02	1.179E-02	1.182E-02	1.184E-02	1.186E-02	1.190E-02	1.030E-03
sn118	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02	3.865E+02
sn119	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02	1.391E+02
sn119m	1.144E-01	1.267E-01	1.381E-01	1.487E-01	1.586E-01	1.679E-01	1.765E-01	1.845E-01	1.920E-01	2.054E-01	1.834E-01

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sn120   5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02 5.240E+02
sn121   1.702E-07 2.867E-04 2.874E-04 2.879E-04 2.884E-04 2.889E-04 2.895E-04 2.900E-04 2.905E-04 2.913E-04 1.855E-07
sn121m  3.907E-03 3.943E-03 3.979E-03 4.014E-03 4.050E-03 4.086E-03 4.122E-03 4.158E-03 4.194E-03 4.265E-03 4.258E-03
sn122   7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.553E+01 7.552E+01 7.552E+01
sn123   1.465E-04 6.847E-04 1.140E-03 1.525E-03 1.851E-03 2.127E-03 2.360E-03 2.559E-03 2.727E-03 2.991E-03 2.312E-03

case 5                                                  light elements      page  83
power=   1.12mw, burnup=   4291.mwd, flux= 9.20E+12n/cm**2-sec

                        nuclide concentrations, grams
                        basis = fuel assembly (.1902 mtu)
     charge   31.7 d   63.4 d   95.1 d  126.8 d  158.5 d  190.2 d  221.9 d  253.6 d  317.0 d  365.0 d
sn123m  0.000E+00 4.275E-09 4.285E-09 4.293E-09 4.300E-09 4.308E-09 4.315E-09 4.323E-09 4.331E-09 4.343E-09 0.000E+00
sn124   9.314E+01 9.314E+01 9.314E+01 9.313E+01 9.313E+01 9.312E+01 9.312E+01 9.312E+01 9.311E+01 9.310E+01 9.310E+01
sn125   1.742E-29 4.545E-05 5.020E-05 5.077E-05 5.091E-05 5.100E-05 5.109E-05 5.118E-05 5.127E-05 5.142E-05 1.630E-06
sn125m  0.000E+00 1.127E-06 1.129E-06 1.131E-06 1.133E-06 1.135E-06 1.137E-06 1.139E-06 1.141E-06 1.144E-06 0.000E+00
sb121   5.461E-01 5.508E-01 5.559E-01 5.610E-01 5.660E-01 5.711E-01 5.762E-01 5.813E-01 5.863E-01 5.965E-01 5.968E-01
sb122   0.000E+00 6.651E-05 6.730E-05 6.803E-05 6.877E-05 6.951E-05 7.025E-05 7.100E-05 7.175E-05 7.318E-05 3.260E-10
sb122m  0.000E+00 6.337E-10 6.409E-10 6.479E-10 6.550E-10 6.620E-10 6.691E-10 6.762E-10 6.833E-10 6.971E-10 0.000E+00
sb123   6.140E-02 6.144E-02 6.156E-02 6.175E-02 6.200E-02 6.230E-02 6.264E-02 6.302E-02 6.343E-02 6.433E-02 6.501E-02
sb124   2.535E-08 3.421E-05 5.806E-05 7.476E-05 8.653E-05 9.493E-05 1.010E-04 1.055E-04 1.089E-04 1.137E-04 6.542E-05
sb124m  0.000E+00 5.004E-12 5.025E-12 5.049E-12 5.079E-12 5.113E-12 5.150E-12 5.191E-12 5.234E-12 5.323E-12 0.000E+00
sb125   1.538E-01 1.543E-01 1.547E-01 1.551E-01 1.556E-01 1.560E-01 1.564E-01 1.569E-01 1.573E-01 1.582E-01 1.530E-01
sb126   1.254E-24 5.003E-06 5.878E-06 6.050E-06 6.103E-06 6.135E-06 6.164E-06 6.192E-06 6.220E-06 6.273E-06 4.284E-07
sb126m  0.000E+00 5.634E-09 5.663E-09 5.689E-09 5.715E-09 5.742E-09 5.768E-09 5.794E-09 5.820E-09 5.868E-09 0.000E+00
te120   0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
te121   0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
te121m  0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00 0.000E+00
te122   2.699E-02 2.744E-02 2.796E-02 2.848E-02 2.902E-02 2.955E-02 3.009E-02 3.064E-02 3.120E-02 3.232E-02 3.239E-02
te123   2.255E-04 2.253E-04 2.260E-04 2.274E-04 2.293E-04 2.317E-04 2.345E-04 2.378E-04 2.413E-04 2.491E-04 2.548E-04
te123m  5.156E-07 4.507E-06 7.914E-06 1.084E-05 1.336E-05 1.554E-05 1.745E-05 1.913E-05 2.062E-05 2.315E-05 1.753E-05
te124   1.755E-03 1.769E-03 1.793E-03 1.825E-03 1.862E-03 1.903E-03 1.946E-03 1.992E-03 2.039E-03 2.136E-03 2.185E-03
te125   2.371E-01 2.405E-01 2.439E-01 2.473E-01 2.507E-01 2.541E-01 2.575E-01 2.609E-01 2.643E-01 2.712E-01 2.764E-01
te125m  2.185E-03 2.146E-03 2.121E-03 2.106E-03 2.097E-03 2.093E-03 2.092E-03 2.093E-03 2.096E-03 2.104E-03 2.093E-03
te126   2.591E-03 2.642E-03 2.697E-03 2.754E-03 2.811E-03 2.870E-03 2.928E-03 2.988E-03 3.048E-03 3.171E-03 3.177E-03
te127   5.881E-12 3.067E-09 3.202E-09 3.328E-09 3.446E-09 3.558E-09 3.666E-09 3.771E-09 3.873E-09 4.069E-09 3.180E-10
te127m  1.680E-09 2.401E-08 4.276E-08 5.862E-08 7.212E-08 8.370E-08 9.371E-08 1.025E-07 1.102E-07 1.233E-07 9.085E-08
te128   1.173E-08 1.211E-08 1.251E-08 1.292E-08 1.336E-08 1.380E-08 1.427E-08 1.475E-08 1.525E-08 1.629E-08 1.629E-08
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te129	4.106E-24	5.058E-16	5.294E-16	5.510E-16	5.720E-16	5.931E-16	6.145E-16	6.366E-16	6.593E-16	7.065E-16	1.148E-17
te129m	4.454E-21	1.223E-14	1.901E-14	2.298E-14	2.550E-14	2.730E-14	2.872E-14	2.998E-14	3.117E-14	3.352E-14	1.245E-14
te130	6.379E-17	6.412E-17	6.491E-17	6.595E-17	6.715E-17	6.846E-17	6.985E-17	7.131E-17	7.283E-17	7.606E-17	7.606E-17
te131	0.000E+00	2.873E-25	2.915E-25	2.967E-25	3.027E-25	3.091E-25	3.160E-25	3.231E-25	3.306E-25	3.463E-25	1.567E-38
te131m	0.000E+00	1.509E-24	1.530E-24	1.558E-24	1.589E-24	1.623E-24	1.659E-24	1.696E-24	1.736E-24	1.818E-24	5.011E-36
sm144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sm145	1.517E-21	1.800E-21	2.069E-21	2.323E-21	2.564E-21	2.793E-21	3.010E-21	3.216E-21	3.411E-21	3.775E-21	3.423E-21
sm146	1.759E-19	1.802E-19	1.847E-19	1.891E-19	1.936E-19	1.982E-19	2.028E-19	2.074E-19	2.120E-19	2.214E-19	2.214E-19
sm147	2.901E-15	2.919E-15	2.936E-15	2.953E-15	2.970E-15	2.987E-15	3.004E-15	3.021E-15	3.038E-15	3.071E-15	3.116E-15
sm148	1.207E-12	1.209E-12	1.210E-12	1.211E-12	1.211E-12	1.212E-12	1.213E-12	1.214E-12	1.215E-12	1.216E-12	1.216E-12
sm149	2.041E-09	1.965E-09	1.896E-09	1.830E-09	1.766E-09	1.704E-09	1.644E-09	1.587E-09	1.531E-09	1.425E-09	1.429E-09
sm150	2.288E-06	2.289E-06	2.290E-06	2.291E-06	2.292E-06	2.293E-06	2.294E-06	2.295E-06	2.295E-06	2.296E-06	2.296E-06
sm151	7.925E-08	7.910E-08	7.904E-08	7.899E-08	7.897E-08	7.895E-08	7.895E-08	7.896E-08	7.898E-08	7.902E-08	7.901E-08
sm152	3.252E-06	3.272E-06	3.292E-06	3.312E-06	3.332E-06	3.351E-06	3.370E-06	3.389E-06	3.407E-06	3.442E-06	3.451E-06
sm153	0.000E+00	1.963E-08	1.969E-08	1.974E-08	1.979E-08	1.984E-08	1.989E-08	1.994E-08	1.999E-08	2.008E-08	6.444E-16
sm154	9.838E-06	1.000E-05	1.016E-05	1.033E-05	1.050E-05	1.067E-05	1.084E-05	1.101E-05	1.118E-05	1.153E-05	1.175E-05
sm155	0.000E+00	3.035E-11	3.045E-11	3.053E-11	3.062E-11	3.071E-11	3.079E-11	3.088E-11	3.097E-11	3.112E-11	0.000E+00
eu151	2.715E-09	2.620E-09	2.534E-09	2.457E-09	2.386E-09	2.323E-09	2.265E-09	2.212E-09	2.164E-09	2.079E-09	2.159E-09
eu152	1.471E-06	1.489E-06	1.505E-06	1.520E-06	1.535E-06	1.548E-06	1.560E-06	1.571E-06	1.581E-06	1.599E-06	1.588E-06
eu152m	0.000E+00	1.255E-09	1.247E-09	1.240E-09	1.232E-09	1.224E-09	1.216E-09	1.208E-09	1.201E-09	1.184E-09	0.000E+00
eu153	6.254E-01	6.204E-01	6.154E-01	6.105E-01	6.056E-01	6.008E-01	5.959E-01	5.911E-01	5.863E-01	5.767E-01	5.780E-01
eu154	9.537E-02	9.676E-02	9.803E-02	9.921E-02	1.003E-01	1.013E-01	1.022E-01	1.030E-01	1.037E-01	1.049E-01	1.038E-01
eu155	1.739E-02	1.782E-02	1.823E-02	1.860E-02	1.896E-02	1.928E-02	1.958E-02	1.986E-02	2.012E-02	2.057E-02	2.018E-02
eu156	1.379E-18	1.783E-03	2.244E-03	2.394E-03	2.469E-03	2.523E-03	2.571E-03	2.616E-03	2.657E-03	2.729E-03	3.051E-04

case 5 light elements page 84
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
gd152	2.740E-02	2.644E-02	2.551E-02	2.461E-02	2.374E-02	2.290E-02	2.208E-02	2.130E-02	2.054E-02	1.910E-02	1.910E-02
gd153	1.132E-02	1.126E-02	1.118E-02	1.108E-02	1.095E-02	1.081E-02	1.066E-02	1.049E-02	1.031E-02	9.921E-03	8.645E-03
gd154	9.297E+00	9.278E+00	9.259E+00	9.240E+00	9.221E+00	9.202E+00	9.183E+00	9.164E+00	9.145E+00	9.107E+00	9.108E+00
gd155m	0.000E+00	5.438E-13	5.435E-13	5.432E-13	5.432E-13	5.433E-13	5.435E-13	5.438E-13	5.441E-13	5.444E-13	0.000E+00
gd155	5.841E-02	5.622E-02	5.471E-02	5.365E-02	5.291E-02	5.237E-02	5.198E-02	5.168E-02	5.145E-02	5.110E-02	5.150E-02
gd156	1.970E+02	1.969E+02	1.969E+02	1.968E+02	1.968E+02	1.967E+02	1.966E+02	1.966E+02	1.965E+02	1.964E+02	1.964E+02
gd157	5.138E-02	5.120E-02	5.115E-02	5.113E-02	5.111E-02	5.110E-02	5.108E-02	5.106E-02	5.105E-02	5.102E-02	5.102E-02

gd158	2.387E+02	2.388E+02	2.388E+02	2.388E+02	2.388E+02	2.389E+02	2.389E+02	2.389E+02	2.389E+02	2.390E+02	2.390E+02
gd159	0.000E+00	2.184E-03	2.190E-03	2.194E-03	2.199E-03	2.203E-03	2.208E-03	2.212E-03	2.217E-03	2.224E-03	4.610E-22
gd160	1.200E+02	1.200E+02	1.200E+02	1.200E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02
gd161	0.000E+00	7.510E-07	7.526E-07	7.539E-07	7.552E-07	7.565E-07	7.579E-07	7.592E-07	7.605E-07	7.625E-07	0.000E+00
gd162	0.000E+00	7.480E-11	7.514E-11	7.541E-11	7.567E-11	7.594E-11	7.620E-11	7.647E-11	7.674E-11	7.716E-11	0.000E+00
tb157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tb159	5.337E+00	5.384E+00	5.432E+00	5.481E+00	5.529E+00	5.578E+00	5.627E+00	5.675E+00	5.724E+00	5.820E+00	5.823E+00
tb160	5.172E-05	1.168E-02	2.030E-02	2.672E-02	3.153E-02	3.516E-02	3.794E-02	4.010E-02	4.180E-02	4.430E-02	2.796E-02
tb161	0.000E+00	1.984E-03	2.103E-03	2.135E-03	2.158E-03	2.176E-03	2.191E-03	2.203E-03	2.213E-03	2.229E-03	1.796E-05
tb162	0.000E+00	6.910E-11	6.941E-11	6.966E-11	6.991E-11	7.015E-11	7.040E-11	7.064E-11	7.089E-11	7.128E-11	0.000E+00
dy156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy158	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy159	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
dy160	5.183E-01	5.156E-01	5.159E-01	5.185E-01	5.228E-01	5.282E-01	5.346E-01	5.416E-01	5.492E-01	5.653E-01	5.817E-01
dy161	5.064E-01	5.093E-01	5.142E-01	5.192E-01	5.243E-01	5.294E-01	5.345E-01	5.397E-01	5.449E-01	5.554E-01	5.576E-01
dy162	2.081E-01	2.115E-01	2.150E-01	2.185E-01	2.221E-01	2.256E-01	2.292E-01	2.328E-01	2.365E-01	2.438E-01	2.438E-01
dy163	8.463E-02	8.670E-02	8.880E-02	9.093E-02	9.310E-02	9.530E-02	9.753E-02	9.979E-02	1.021E-01	1.068E-01	1.068E-01
dy164	1.259E-02	1.297E-02	1.336E-02	1.375E-02	1.416E-02	1.457E-02	1.499E-02	1.542E-02	1.585E-02	1.675E-02	1.675E-02
dy165	0.000E+00	1.740E-06	1.797E-06	1.853E-06	1.911E-06	1.970E-06	2.031E-06	2.093E-06	2.156E-06	2.284E-06	0.000E+00
dy165m	0.000E+00	9.946E-09	1.027E-08	1.059E-08	1.092E-08	1.126E-08	1.160E-08	1.196E-08	1.232E-08	1.305E-08	0.000E+00
dy166	0.000E+00	5.701E-08	5.908E-08	6.105E-08	6.308E-08	6.515E-08	6.727E-08	6.944E-08	7.166E-08	7.681E-08	4.327E-12
ho163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
ho165	8.678E-03	9.032E-03	9.399E-03	9.777E-03	1.017E-02	1.057E-02	1.098E-02	1.141E-02	1.184E-02	1.276E-02	1.276E-02
ho166	0.000E+00	1.886E-06	1.967E-06	2.049E-06	2.135E-06	2.223E-06	2.313E-06	2.407E-06	2.504E-06	2.704E-06	2.116E-12
ho166m	2.787E-05	2.933E-05	3.085E-05	3.243E-05	3.408E-05	3.580E-05	3.759E-05	3.945E-05	4.138E-05	4.549E-05	4.549E-05
er162	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er164	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
er166	7.116E-04	7.453E-04	7.824E-04	8.210E-04	8.612E-04	9.031E-04	9.467E-04	9.921E-04	1.039E-03	1.139E-03	1.142E-03
er167	8.446E-06	8.945E-06	9.466E-06	1.001E-05	1.058E-05	1.118E-05	1.180E-05	1.245E-05	1.314E-05	1.459E-05	1.459E-05
er167m	0.000E+00	4.279E-13	4.502E-13	4.733E-13	4.974E-13	5.225E-13	5.487E-13	5.760E-13	6.045E-13	6.646E-13	0.000E+00
er168	4.466E-06	4.780E-06	5.114E-06	5.468E-06	5.843E-06	6.240E-06	6.660E-06	7.104E-06	7.573E-06	8.591E-06	8.591E-06
er169	4.140E-35	5.371E-10	6.279E-10	6.778E-10	7.262E-10	7.772E-10	8.312E-10	8.884E-10	9.490E-10	1.080E-09	3.137E-11
er170	2.905E-12	2.933E-12	3.007E-12	3.122E-12	3.277E-12	3.470E-12	3.699E-12	3.964E-12	4.265E-12	4.976E-12	5.501E-12
er171	0.000E+00	9.218E-18	9.471E-18	9.852E-18	1.036E-17	1.099E-17	1.173E-17	1.260E-17	1.358E-17	1.589E-17	0.000E+00
er172	0.000E+00	2.920E-21	3.007E-21	3.133E-21	3.300E-21	3.507E-21	3.752E-21	4.035E-21	4.357E-21	5.112E-21	4.733E-28

totals 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05 1.561E+05

flux 9.126E+12 9.147E+12 9.163E+12 9.180E+12 9.196E+12 9.212E+12 9.229E+12 9.245E+12 9.271E+12 0.000E+00

case 5 actinides page 85
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
he 4	5.847E-02	5.920E-02	6.048E-02	6.225E-02	6.446E-02	6.706E-02	7.001E-02	7.327E-02	7.681E-02	8.463E-02	9.036E-02
th226	4.608E-28	5.522E-17	7.552E-17	8.367E-17	8.762E-17	9.015E-17	9.220E-17	9.413E-17	9.603E-17	9.989E-17	2.019E-17
th227	1.885E-11	1.901E-11	1.938E-11	1.981E-11	2.027E-11	2.075E-11	2.124E-11	2.174E-11	2.224E-11	2.329E-11	2.411E-11
th228	7.682E-07	7.856E-07	8.031E-07	8.209E-07	8.388E-07	8.570E-07	8.753E-07	8.939E-07	9.128E-07	9.513E-07	9.828E-07
th229	1.414E-08	1.535E-08	1.660E-08	1.787E-08	1.917E-08	2.050E-08	2.185E-08	2.324E-08	2.465E-08	2.758E-08	2.773E-08
th230	4.124E-04	4.161E-04	4.198E-04	4.234E-04	4.270E-04	4.305E-04	4.339E-04	4.373E-04	4.406E-04	4.471E-04	4.573E-04
th231	7.280E-09	1.652E-07	1.669E-07	1.685E-07	1.701E-07	1.716E-07	1.732E-07	1.747E-07	1.762E-07	1.790E-07	6.602E-09
th232	6.546E-05	6.677E-05	6.809E-05	6.941E-05	7.074E-05	7.208E-05	7.342E-05	7.476E-05	7.611E-05	7.883E-05	8.096E-05
th233	0.000E+00	2.465E-11	2.519E-11	2.573E-11	2.627E-11	2.681E-11	2.736E-11	2.791E-11	2.846E-11	2.956E-11	0.000E+00
th234	2.647E-06	2.647E-06	2.647E-06	2.646E-06	2.646E-06	2.645E-06	2.645E-06	2.645E-06	2.644E-06	2.643E-06	2.643E-06
pa231	1.182E-04	1.207E-04	1.234E-04	1.261E-04	1.288E-04	1.315E-04	1.343E-04	1.370E-04	1.398E-04	1.454E-04	1.458E-04
pa232	0.000E+00	4.354E-08	4.461E-08	4.566E-08	4.673E-08	4.781E-08	4.889E-08	4.998E-08	5.108E-08	5.327E-08	4.988E-19
pa233	1.501E-06	1.522E-06	1.540E-06	1.558E-06	1.576E-06	1.594E-06	1.612E-06	1.630E-06	1.648E-06	1.683E-06	1.675E-06
pa234m	8.925E-11	8.938E-11	8.937E-11	8.936E-11	8.935E-11	8.934E-11	8.932E-11	8.931E-11	8.930E-11	8.927E-11	8.911E-11
pa234	3.987E-11	8.296E-11	8.357E-11	8.415E-11	8.473E-11	8.532E-11	8.590E-11	8.649E-11	8.708E-11	8.810E-11	3.980E-11
pa235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
u230	4.541E-25	5.447E-14	7.447E-14	8.250E-14	8.640E-14	8.889E-14	9.092E-14	9.281E-14	9.470E-14	9.852E-14	1.990E-14
u231	0.000E+00	1.490E-12	1.527E-12	1.557E-12	1.587E-12	1.617E-12	1.649E-12	1.682E-12	1.715E-12	1.791E-12	6.514E-16
u232	5.029E-05	5.112E-05	5.201E-05	5.292E-05	5.386E-05	5.482E-05	5.581E-05	5.682E-05	5.786E-05	6.000E-05	6.089E-05
u233	2.552E-04	2.565E-04	2.578E-04	2.591E-04	2.604E-04	2.617E-04	2.630E-04	2.643E-04	2.655E-04	2.680E-04	2.701E-04
u234	2.895E+01	2.885E+01	2.875E+01	2.865E+01	2.856E+01	2.846E+01	2.836E+01	2.827E+01	2.817E+01	2.798E+01	2.800E+01
u235	1.790E+03	1.773E+03	1.756E+03	1.739E+03	1.722E+03	1.705E+03	1.689E+03	1.672E+03	1.656E+03	1.624E+03	1.624E+03
u236	5.317E+02	5.343E+02	5.368E+02	5.393E+02	5.418E+02	5.443E+02	5.467E+02	5.491E+02	5.514E+02	5.561E+02	5.561E+02
u237	4.292E-06	2.281E-01	2.383E-01	2.400E-01	2.413E-01	2.427E-01	2.440E-01	2.453E-01	2.466E-01	2.490E-01	1.806E-03
u238	1.823E+05	1.823E+05	1.823E+05	1.822E+05	1.822E+05	1.822E+05	1.822E+05	1.821E+05	1.821E+05	1.820E+05	1.820E+05
u239	0.000E+00	1.974E-02	1.978E-02	1.982E-02	1.985E-02	1.988E-02	1.991E-02	1.994E-02	1.998E-02	2.003E-02	0.000E+00
u240	1.445E-22	1.498E-22	1.554E-22	1.616E-22	1.682E-22	1.754E-22	1.832E-22	1.917E-22	2.008E-22	2.212E-22	2.378E-22
u241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

np235	1.559E-07	1.709E-07	1.853E-07	1.993E-07	2.128E-07	2.259E-07	2.386E-07	2.509E-07	2.629E-07	2.858E-07	2.628E-07	
np236m	0.000E+00	1.038E-07	1.052E-07	1.065E-07	1.079E-07	1.093E-07	1.106E-07	1.120E-07	1.134E-07	1.161E-07	4.489E-23	
np236	3.664E-05	3.748E-05	3.834E-05	3.921E-05	4.009E-05	4.098E-05	4.188E-05	4.279E-05	4.372E-05	4.560E-05	4.560E-05	
np237	4.420E+01	4.447E+01	4.496E+01	4.546E+01	4.596E+01	4.646E+01	4.696E+01	4.747E+01	4.797E+01	4.898E+01	4.923E+01	
np238	2.053E-08	2.635E-02	2.670E-02	2.705E-02	2.739E-02	2.774E-02	2.809E-02	2.844E-02	2.879E-02	2.948E-02	7.668E-08	
np239	5.785E-06	2.852E+00	2.858E+00	2.863E+00	2.868E+00	2.872E+00	2.877E+00	2.882E+00	2.886E+00	2.893E+00	9.836E-06	
np240m	1.233E-24	1.278E-24	1.326E-24	1.379E-24	1.436E-24	1.497E-24	1.564E-24	1.636E-24	1.713E-24	1.888E-24	2.030E-24	
np240	1.269E-26	2.156E-05	2.165E-05	2.173E-05	2.180E-05	2.188E-05	2.195E-05	2.202E-05	2.210E-05	2.221E-05	2.088E-26	
np241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
pu236	2.359E-05	2.420E-05	2.485E-05	2.551E-05	2.617E-05	2.684E-05	2.750E-05	2.816E-05	2.883E-05	3.017E-05	2.929E-05	
pu237	7.101E-11	2.389E-06	3.903E-06	4.885E-06	5.546E-06	6.013E-06	6.366E-06	6.653E-06	6.902E-06	7.351E-06	3.520E-06	
pu238	1.234E+01	1.251E+01	1.275E+01	1.302E+01	1.332E+01	1.364E+01	1.398E+01	1.434E+01	1.472E+01	1.552E+01	1.584E+01	
pu239	8.638E+02	8.624E+02	8.638E+02	8.652E+02	8.666E+02	8.679E+02	8.692E+02	8.705E+02	8.717E+02	8.740E+02	8.769E+02	
pu240	3.229E+02	3.261E+02	3.291E+02	3.322E+02	3.352E+02	3.382E+02	3.411E+02	3.441E+02	3.469E+02	3.526E+02	3.526E+02	
pu241	1.416E+02	1.431E+02	1.447E+02	1.463E+02	1.479E+02	1.495E+02	1.511E+02	1.527E+02	1.543E+02	1.576E+02	1.566E+02	
pu242	4.530E+01	4.619E+01	4.708E+01	4.799E+01	4.891E+01	4.983E+01	5.077E+01	5.171E+01	5.267E+01	5.460E+01	5.461E+01	
pu243	1.027E-15	2.420E-03	2.473E-03	2.525E-03	2.578E-03	2.631E-03	2.685E-03	2.740E-03	2.796E-03	2.907E-03	2.011E-15	
pu244	7.318E-12	7.583E-12	7.870E-12	8.181E-12	8.518E-12	8.883E-12	9.278E-12	9.705E-12	1.017E-11	1.120E-11	1.204E-11	
pu245	0.000E+00	2.917E-18	3.035E-18	3.161E-18	3.297E-18	3.444E-18	3.604E-18	3.776E-18	3.962E-18	4.377E-18	0.000E+00	
pu246	2.083E-21	6.167E-21	6.959E-21	7.309E-21	7.620E-21	7.948E-21	8.303E-21	8.688E-21	9.103E-21	1.006E-20	3.356E-21	
am239	0.000E+00	2.883E-10	2.913E-10	2.943E-10	2.973E-10	3.003E-10	3.034E-10	3.065E-10	3.096E-10	3.158E-10	0.000E+00	
am240	0.000E+00	1.322E-07	1.337E-07	1.350E-07	1.364E-07	1.378E-07	1.392E-07	1.406E-07	1.421E-07	1.449E-07	2.221E-14	

case 5 actinides page 86
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
am241	2.182E+01	2.200E+01	2.218E+01	2.236E+01	2.255E+01	2.274E+01	2.293E+01	2.312E+01	2.332E+01	2.372E+01	2.471E+01
am242m	1.128E-01	1.598E-01	2.011E-01	2.373E-01	2.692E-01	2.974E-01	3.223E-01	3.445E-01	3.642E-01	3.976E-01	3.973E-01
am242	1.456E-06	1.054E-02	1.065E-02	1.076E-02	1.087E-02	1.098E-02	1.109E-02	1.120E-02	1.132E-02	1.154E-02	5.126E-06
am243	6.723E+00	6.923E+00	7.130E+00	7.341E+00	7.557E+00	7.778E+00	8.002E+00	8.232E+00	8.465E+00	8.946E+00	8.949E+00
am244m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
am244	0.000E+00	1.091E-03	1.127E-03	1.162E-03	1.198E-03	1.236E-03	1.274E-03	1.312E-03	1.352E-03	1.433E-03	0.000E+00
am245	1.022E-17	1.785E-17	2.501E-17	3.226E-17	3.966E-17	4.726E-17	5.509E-17	6.321E-17	7.166E-17	8.972E-17	8.013E-17
am246	5.204E-24	1.541E-23	1.739E-23	1.827E-23	1.904E-23	1.986E-23	2.075E-23	2.171E-23	2.275E-23	2.514E-23	8.389E-24
cm241	2.071E-15	1.245E-09	3.537E-09	6.181E-09	8.842E-09	1.137E-08	1.371E-08	1.584E-08	1.777E-08	2.109E-08	7.648E-09

cm242	4.002E-02	2.939E-01	5.259E-01	7.312E-01	9.131E-01	1.075E+00	1.219E+00	1.347E+00	1.462E+00	1.659E+00	1.361E+00	
cm243	2.281E-02	2.250E-02	2.242E-02	2.255E-02	2.287E-02	2.334E-02	2.395E-02	2.468E-02	2.551E-02	2.743E-02	2.734E-02	
cm244	1.146E+00	1.195E+00	1.246E+00	1.299E+00	1.353E+00	1.409E+00	1.467E+00	1.526E+00	1.587E+00	1.714E+00	1.707E+00	
cm245	3.016E-02	3.145E-02	3.279E-02	3.419E-02	3.566E-02	3.718E-02	3.877E-02	4.043E-02	4.215E-02	4.579E-02	4.579E-02	
cm246	2.694E-03	2.862E-03	3.037E-03	3.221E-03	3.412E-03	3.612E-03	3.820E-03	4.038E-03	4.266E-03	4.751E-03	4.751E-03	
cm247	2.955E-05	3.171E-05	3.400E-05	3.643E-05	3.901E-05	4.173E-05	4.462E-05	4.766E-05	5.088E-05	5.786E-05	5.786E-05	
cm248	1.591E-06	1.727E-06	1.873E-06	2.030E-06	2.198E-06	2.378E-06	2.571E-06	2.778E-06	2.998E-06	3.487E-06	3.487E-06	
cm249	9.575E-32	4.651E-12	5.056E-12	5.489E-12	5.954E-12	6.454E-12	6.990E-12	7.565E-12	8.181E-12	9.541E-12	3.619E-19	
cm250	4.964E-15	5.114E-15	5.279E-15	5.458E-15	5.652E-15	5.864E-15	6.093E-15	6.342E-15	6.612E-15	7.220E-15	7.220E-15	
cm251	0.000E+00	6.559E-23	6.785E-23	7.028E-23	7.292E-23	7.578E-23	7.888E-23	8.225E-23	8.590E-23	9.407E-23	0.000E+00	
totals	1.861E+05	1.861E+05	1.861E+05	1.860E+05	1.860E+05	1.860E+05	1.859E+05	1.859E+05	1.859E+05	1.858E+05	1.858E+05	

flux 9.126E+12 9.147E+12 9.163E+12 9.180E+12 9.196E+12 9.212E+12 9.229E+12 9.245E+12 9.271E+12 0.000E+00

case 5 fission products page 87
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
h 3	5.128E-03	5.163E-03	5.197E-03	5.231E-03	5.266E-03	5.300E-03	5.333E-03	5.367E-03	5.401E-03	5.468E-03	5.427E-03
li 6	2.779E-05	2.787E-05	2.796E-05	2.804E-05	2.811E-05	2.819E-05	2.827E-05	2.834E-05	2.841E-05	2.855E-05	2.855E-05
li 7	1.208E-06	1.218E-06	1.229E-06	1.240E-06	1.251E-06	1.261E-06	1.272E-06	1.283E-06	1.293E-06	1.315E-06	1.315E-06
be 9	2.326E-06	2.347E-06	2.367E-06	2.388E-06	2.409E-06	2.429E-06	2.450E-06	2.470E-06	2.491E-06	2.532E-06	2.532E-06
be 10	1.551E-05	1.565E-05	1.579E-05	1.593E-05	1.606E-05	1.620E-05	1.634E-05	1.648E-05	1.661E-05	1.689E-05	1.689E-05
ga 69	3.501E-08	3.544E-08	3.587E-08	3.631E-08	3.675E-08	3.718E-08	3.762E-08	3.806E-08	3.851E-08	3.939E-08	3.940E-08
ga 70	0.000E+00	1.139E-14	1.143E-14	1.147E-14	1.150E-14	1.154E-14	1.157E-14	1.160E-14	1.164E-14	1.170E-14	0.000E+00
ge 70	1.301E-09	1.318E-09	1.335E-09	1.352E-09	1.370E-09	1.387E-09	1.404E-09	1.421E-09	1.439E-09	1.474E-09	1.474E-09
ga 71	9.097E-06	9.206E-06	9.316E-06	9.426E-06	9.537E-06	9.648E-06	9.759E-06	9.870E-06	9.982E-06	1.021E-05	1.021E-05
ge 71	3.744E-34	1.137E-13	1.308E-13	1.337E-13	1.345E-13	1.350E-13	1.354E-13	1.359E-13	1.363E-13	1.370E-13	7.469E-15
ge 71m	0.000E+00	1.374E-21	1.380E-21	1.385E-21	1.389E-21	1.394E-21	1.398E-21	1.403E-21	1.407E-21	1.415E-21	0.000E+00
ga 72	0.000E+00	1.660E-07	1.664E-07	1.667E-07	1.669E-07	1.672E-07	1.674E-07	1.677E-07	1.680E-07	1.683E-07	8.394E-15
ge 72	5.775E-04	5.830E-04	5.893E-04	5.955E-04	6.017E-04	6.080E-04	6.142E-04	6.205E-04	6.268E-04	6.394E-04	6.401E-04
ga 73	0.000E+00	1.613E-07	1.615E-07	1.615E-07	1.616E-07	1.616E-07	1.617E-07	1.617E-07	1.618E-07	1.617E-07	0.000E+00
ge 73	1.752E-03	1.768E-03	1.785E-03	1.801E-03	1.818E-03	1.834E-03	1.851E-03	1.868E-03	1.884E-03	1.917E-03	1.917E-03
ge 73m	0.000E+00	4.540E-12	4.544E-12	4.546E-12	4.547E-12	4.549E-12	4.550E-12	4.552E-12	4.553E-12	4.552E-12	0.000E+00
ga 74	0.000E+00	3.424E-09	3.425E-09	3.424E-09	3.423E-09	3.422E-09	3.421E-09	3.420E-09	3.419E-09	3.415E-09	0.000E+00
ge 74	1.486E-03	1.500E-03	1.515E-03	1.529E-03	1.544E-03	1.558E-03	1.572E-03	1.587E-03	1.601E-03	1.630E-03	1.630E-03

ga 75	0.000E+00	7.968E-09	7.961E-09	7.950E-09	7.939E-09	7.929E-09	7.918E-09	7.907E-09	7.896E-09	7.869E-09	0.000E+00
ge 75	0.000E+00	3.165E-07	3.162E-07	3.158E-07	3.154E-07	3.150E-07	3.145E-07	3.141E-07	3.137E-07	3.126E-07	0.000E+00
ge 75m	0.000E+00	1.646E-10	1.645E-10	1.643E-10	1.642E-10	1.640E-10	1.638E-10	1.636E-10	1.635E-10	1.630E-10	0.000E+00
as 75	1.388E-02	1.399E-02	1.411E-02	1.422E-02	1.434E-02	1.445E-02	1.457E-02	1.468E-02	1.480E-02	1.503E-02	1.503E-02
ga 76	0.000E+00	5.513E-09	5.502E-09	5.489E-09	5.476E-09	5.463E-09	5.450E-09	5.437E-09	5.425E-09	5.395E-09	0.000E+00
ge 76	4.205E-02	4.239E-02	4.272E-02	4.305E-02	4.339E-02	4.372E-02	4.405E-02	4.438E-02	4.471E-02	4.537E-02	4.537E-02
as 76	0.000E+00	2.666E-07	2.694E-07	2.721E-07	2.748E-07	2.774E-07	2.801E-07	2.828E-07	2.855E-07	2.907E-07	1.938E-20
se 76	2.720E-04	2.767E-04	2.818E-04	2.868E-04	2.920E-04	2.971E-04	3.024E-04	3.076E-04	3.129E-04	3.237E-04	3.240E-04
ga 77	0.000E+00	4.748E-09	4.741E-09	4.732E-09	4.723E-09	4.714E-09	4.705E-09	4.696E-09	4.687E-09	4.666E-09	0.000E+00
ge 77	0.000E+00	5.726E-06	5.720E-06	5.712E-06	5.703E-06	5.695E-06	5.686E-06	5.677E-06	5.669E-06	5.648E-06	0.000E+00
ge 77m	0.000E+00	1.953E-08	1.950E-08	1.946E-08	1.943E-08	1.939E-08	1.935E-08	1.932E-08	1.928E-08	1.919E-08	0.000E+00
as 77	0.000E+00	6.057E-05	6.049E-05	6.038E-05	6.028E-05	6.017E-05	6.007E-05	5.996E-05	5.985E-05	5.960E-05	7.938E-14
se 77	9.609E-02	9.678E-02	9.753E-02	9.829E-02	9.904E-02	9.979E-02	1.005E-01	1.013E-01	1.020E-01	1.035E-01	1.036E-01
se 77m	0.000E+00	2.504E-11	2.502E-11	2.500E-11	2.497E-11	2.494E-11	2.492E-11	2.490E-11	2.487E-11	2.480E-11	3.171E-20
ga 78	0.000E+00	4.198E-09	4.196E-09	4.191E-09	4.187E-09	4.182E-09	4.178E-09	4.173E-09	4.169E-09	4.157E-09	0.000E+00
ge 78	0.000E+00	7.483E-06	7.482E-06	7.478E-06	7.474E-06	7.469E-06	7.465E-06	7.461E-06	7.456E-06	7.442E-06	0.000E+00
as 78	0.000E+00	7.821E-06	7.821E-06	7.816E-06	7.812E-06	7.808E-06	7.803E-06	7.799E-06	7.795E-06	7.780E-06	0.000E+00
se 78	3.061E-01	3.089E-01	3.117E-01	3.145E-01	3.173E-01	3.201E-01	3.229E-01	3.257E-01	3.284E-01	3.340E-01	3.340E-01
ga 79	0.000E+00	2.412E-09	2.406E-09	2.399E-09	2.391E-09	2.384E-09	2.377E-09	2.370E-09	2.363E-09	2.348E-09	0.000E+00
ge 79	0.000E+00	4.674E-08	4.670E-08	4.665E-08	4.659E-08	4.654E-08	4.648E-08	4.643E-08	4.637E-08	4.623E-08	0.000E+00
as 79	0.000E+00	1.441E-06	1.440E-06	1.439E-06	1.437E-06	1.436E-06	1.434E-06	1.433E-06	1.431E-06	1.427E-06	0.000E+00
se 79	5.855E-01	5.906E-01	5.956E-01	6.006E-01	6.057E-01	6.107E-01	6.157E-01	6.208E-01	6.258E-01	6.358E-01	6.358E-01
se 79m	0.000E+00	6.200E-07	6.196E-07	6.190E-07	6.183E-07	6.176E-07	6.170E-07	6.163E-07	6.156E-07	6.139E-07	0.000E+00
br 79	4.744E-05	4.848E-05	4.952E-05	5.057E-05	5.163E-05	5.270E-05	5.378E-05	5.486E-05	5.595E-05	5.816E-05	5.992E-05
br 79m	0.000E+00	4.899E-15	4.914E-15	4.926E-15	4.939E-15	4.951E-15	4.962E-15	4.974E-15	4.986E-15	5.005E-15	0.000E+00
kr 79	0.000E+00	1.128E-14	1.140E-14	1.152E-14	1.164E-14	1.176E-14	1.188E-14	1.201E-14	1.213E-14	1.237E-14	1.556E-24
ga 80	0.000E+00	1.124E-09	1.123E-09	1.122E-09	1.121E-09	1.120E-09	1.118E-09	1.117E-09	1.116E-09	1.113E-09	0.000E+00
ge 80	0.000E+00	1.771E-07	1.768E-07	1.764E-07	1.761E-07	1.757E-07	1.753E-07	1.749E-07	1.746E-07	1.737E-07	0.000E+00
as 80	0.000E+00	1.070E-07	1.068E-07	1.066E-07	1.065E-07	1.063E-07	1.061E-07	1.059E-07	1.057E-07	1.053E-07	0.000E+00
se 80	1.629E+00	1.642E+00	1.656E+00	1.669E+00	1.683E+00	1.696E+00	1.710E+00	1.723E+00	1.736E+00	1.763E+00	1.763E+00
br 80	0.000E+00	7.365E-11	7.438E-11	7.507E-11	7.577E-11	7.647E-11	7.718E-11	7.789E-11	7.860E-11	7.998E-11	0.000E+00
br 80m	0.000E+00	6.552E-10	6.592E-10	6.629E-10	6.666E-10	6.704E-10	6.741E-10	6.778E-10	6.815E-10	6.885E-10	0.000E+00

case 5 fission products page 88
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
kr 80	6.961E-06	7.077E-06	7.196E-06	7.315E-06	7.435E-06	7.556E-06	7.678E-06	7.802E-06	7.926E-06	8.179E-06	8.180E-06
ga 81	0.000E+00	5.263E-10	5.258E-10	5.251E-10	5.245E-10	5.238E-10	5.231E-10	5.224E-10	5.218E-10	5.201E-10	0.000E+00
ge 81	0.000E+00	4.868E-08	4.860E-08	4.849E-08	4.839E-08	4.828E-08	4.818E-08	4.808E-08	4.797E-08	4.774E-08	0.000E+00
as 81	0.000E+00	3.435E-07	3.431E-07	3.426E-07	3.421E-07	3.415E-07	3.410E-07	3.405E-07	3.399E-07	3.386E-07	0.000E+00
se 81	0.000E+00	1.204E-05	1.203E-05	1.201E-05	1.199E-05	1.198E-05	1.196E-05	1.194E-05	1.192E-05	1.188E-05	0.000E+00
se 81m	0.000E+00	2.712E-06	2.711E-06	2.708E-06	2.705E-06	2.703E-06	2.700E-06	2.697E-06	2.695E-06	2.687E-06	0.000E+00
br 81	2.428E+00	2.448E+00	2.468E+00	2.488E+00	2.508E+00	2.528E+00	2.547E+00	2.567E+00	2.587E+00	2.626E+00	2.626E+00
kr 81	3.416E-07	3.481E-07	3.548E-07	3.615E-07	3.684E-07	3.753E-07	3.824E-07	3.895E-07	3.968E-07	4.115E-07	4.115E-07
kr 81m	0.000E+00	1.810E-14	1.842E-14	1.874E-14	1.905E-14	1.937E-14	1.970E-14	2.002E-14	2.035E-14	2.101E-14	0.000E+00
ga 82	0.000E+00	1.574E-10	1.568E-10	1.562E-10	1.555E-10	1.548E-10	1.542E-10	1.535E-10	1.529E-10	1.515E-10	0.000E+00
ge 82	0.000E+00	2.816E-08	2.810E-08	2.802E-08	2.795E-08	2.787E-08	2.780E-08	2.772E-08	2.765E-08	2.749E-08	0.000E+00
as 82	0.000E+00	1.921E-07	1.917E-07	1.912E-07	1.907E-07	1.903E-07	1.898E-07	1.893E-07	1.888E-07	1.878E-07	0.000E+00
as 82m	0.000E+00	5.346E-08	5.337E-08	5.325E-08	5.313E-08	5.301E-08	5.289E-08	5.277E-08	5.265E-08	5.238E-08	0.000E+00
se 82	3.923E+00	3.954E+00	3.986E+00	4.017E+00	4.048E+00	4.079E+00	4.110E+00	4.140E+00	4.171E+00	4.233E+00	4.233E+00
br 82	0.000E+00	6.353E-05	6.411E-05	6.466E-05	6.521E-05	6.576E-05	6.631E-05	6.686E-05	6.741E-05	6.846E-05	1.033E-14
br 82m	0.000E+00	1.499E-07	1.514E-07	1.528E-07	1.542E-07	1.556E-07	1.571E-07	1.585E-07	1.599E-07	1.627E-07	0.000E+00
kr 82	5.339E-02	5.423E-02	5.513E-02	5.605E-02	5.697E-02	5.789E-02	5.883E-02	5.977E-02	6.072E-02	6.264E-02	6.271E-02
ga 83	0.000E+00	1.032E-11	1.033E-11	1.033E-11	1.032E-11	1.032E-11	1.032E-11	1.032E-11	1.032E-11	1.032E-11	0.000E+00
ge 83	0.000E+00	5.301E-09	5.294E-09	5.284E-09	5.274E-09	5.265E-09	5.255E-09	5.246E-09	5.237E-09	5.215E-09	0.000E+00
as 83	0.000E+00	2.164E-07	2.159E-07	2.153E-07	2.147E-07	2.141E-07	2.135E-07	2.130E-07	2.124E-07	2.111E-07	0.000E+00
se 83	0.000E+00	1.669E-05	1.666E-05	1.663E-05	1.659E-05	1.656E-05	1.652E-05	1.649E-05	1.646E-05	1.638E-05	0.000E+00
se 83m	0.000E+00	9.117E-07	9.097E-07	9.073E-07	9.050E-07	9.026E-07	9.003E-07	8.980E-07	8.957E-07	8.905E-07	0.000E+00
br 83	0.000E+00	2.263E-04	2.259E-04	2.254E-04	2.248E-04	2.243E-04	2.238E-04	2.232E-04	2.227E-04	2.215E-04	0.000E+00
kr 83	5.356E+00	5.388E+00	5.420E+00	5.451E+00	5.483E+00	5.514E+00	5.545E+00	5.575E+00	5.605E+00	5.665E+00	5.666E+00
kr 83m	0.000E+00	1.726E-04	1.722E-04	1.718E-04	1.714E-04	1.710E-04	1.706E-04	1.702E-04	1.698E-04	1.689E-04	0.000E+00
ga 84	0.000E+00	2.456E-11	2.438E-11	2.420E-11	2.401E-11	2.383E-11	2.364E-11	2.346E-11	2.328E-11	2.290E-11	0.000E+00
ge 84	0.000E+00	2.222E-09	2.219E-09	2.216E-09	2.213E-09	2.209E-09	2.206E-09	2.203E-09	2.200E-09	2.192E-09	0.000E+00
as 84	0.000E+00	6.614E-08	6.601E-08	6.585E-08	6.569E-08	6.554E-08	6.538E-08	6.523E-08	6.508E-08	6.473E-08	0.000E+00
se 84	0.000E+00	9.165E-06	9.144E-06	9.120E-06	9.095E-06	9.071E-06	9.046E-06	9.022E-06	8.998E-06	8.944E-06	0.000E+00
br 84	0.000E+00	9.364E-05	9.343E-05	9.318E-05	9.293E-05	9.268E-05	9.244E-05	9.219E-05	9.195E-05	9.139E-05	0.000E+00
br 84m	0.000E+00	4.836E-07	4.829E-07	4.819E-07	4.810E-07	4.801E-07	4.792E-07	4.782E-07	4.773E-07	4.751E-07	0.000E+00
kr 84	1.358E+01	1.369E+01	1.380E+01	1.392E+01	1.403E+01	1.414E+01	1.426E+01	1.437E+01	1.448E+01	1.471E+01	1.471E+01
ga 85	0.000E+00	4.744E-14	4.749E-14	4.753E-14	4.756E-14	4.760E-14	4.763E-14	4.767E-14	4.771E-14	4.775E-14	0.000E+00
ge 85	0.000E+00	8.115E-11	8.109E-11	8.100E-11	8.092E-11	8.083E-11	8.074E-11	8.066E-11	8.057E-11	8.035E-11	0.000E+00
as 85	0.000E+00	1.408E-08	1.405E-08	1.400E-08	1.396E-08	1.391E-08	1.387E-08	1.383E-08	1.379E-08	1.369E-08	0.000E+00
se 85	0.000E+00	7.185E-07	7.164E-07	7.141E-07	7.118E-07	7.095E-07	7.072E-07	7.050E-07	7.027E-07	6.977E-07	0.000E+00
se 85m	0.000E+00	3.783E-07	3.772E-07	3.759E-07	3.747E-07	3.734E-07	3.722E-07	3.710E-07	3.698E-07	3.671E-07	0.000E+00

br 85 0.000E+00 9.501E-06 9.476E-06 9.446E-06 9.417E-06 9.388E-06 9.359E-06 9.330E-06 9.302E-06 9.238E-06 0.000E+00
kr 85 2.361E+00 2.371E+00 2.381E+00 2.390E+00 2.400E+00 2.409E+00 2.418E+00 2.427E+00 2.436E+00 2.453E+00 2.433E+00
kr 85m 0.000E+00 8.916E-04 8.892E-04 8.865E-04 8.838E-04 8.811E-04 8.784E-04 8.757E-04 8.731E-04 8.672E-04 0.000E+00
rb 85 1.173E+01 1.182E+01 1.192E+01 1.201E+01 1.211E+01 1.221E+01 1.230E+01 1.239E+01 1.249E+01 1.268E+01 1.270E+01
ge 86 0.000E+00 1.723E-11 1.722E-11 1.721E-11 1.719E-11 1.718E-11 1.716E-11 1.714E-11 1.713E-11 1.709E-11 0.000E+00
as 86 0.000E+00 3.520E-09 3.508E-09 3.495E-09 3.482E-09 3.469E-09 3.456E-09 3.443E-09 3.431E-09 3.403E-09 0.000E+00
se 86 0.000E+00 8.337E-07 8.311E-07 8.281E-07 8.252E-07 8.222E-07 8.193E-07 8.163E-07 8.134E-07 8.071E-07 0.000E+00
br 86 0.000E+00 3.721E-06 3.710E-06 3.697E-06 3.685E-06 3.673E-06 3.660E-06 3.648E-06 3.636E-06 3.609E-06 0.000E+00
br 86m 0.000E+00 7.208E-07 7.194E-07 7.177E-07 7.159E-07 7.141E-07 7.124E-07 7.107E-07 7.089E-07 7.050E-07 0.000E+00
kr 86 2.255E+01 2.272E+01 2.289E+01 2.305E+01 2.322E+01 2.338E+01 2.355E+01 2.371E+01 2.388E+01 2.420E+01 2.420E+01
rb 86 1.570E-16 3.037E-04 4.002E-04 4.329E-04 4.460E-04 4.530E-04 4.582E-04 4.628E-04 4.672E-04 4.759E-04 7.981E-05
rb 86m 0.000E+00 1.323E-09 1.337E-09 1.350E-09 1.363E-09 1.376E-09 1.389E-09 1.402E-09 1.416E-09 1.441E-09 0.000E+00
sr 86 2.746E-02 2.767E-02 2.810E-02 2.859E-02 2.911E-02 2.963E-02 3.017E-02 3.071E-02 3.126E-02 3.237E-02 3.276E-02

case 5 fission products page 89
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
ge 87	0.000E+00	7.304E-11	7.251E-11	7.194E-11	7.138E-11	7.081E-11	7.025E-11	6.970E-11	6.915E-11	6.800E-11	0.000E+00
as 87	0.000E+00	6.714E-10	6.678E-10	6.639E-10	6.601E-10	6.563E-10	6.525E-10	6.487E-10	6.449E-10	6.370E-10	0.000E+00
se 87	0.000E+00	1.801E-07	1.795E-07	1.788E-07	1.781E-07	1.775E-07	1.768E-07	1.761E-07	1.755E-07	1.741E-07	0.000E+00
br 87	0.000E+00	4.962E-06	4.947E-06	4.931E-06	4.914E-06	4.898E-06	4.882E-06	4.865E-06	4.849E-06	4.814E-06	0.000E+00
kr 87	0.000E+00	5.184E-04	5.170E-04	5.153E-04	5.136E-04	5.120E-04	5.103E-04	5.087E-04	5.071E-04	5.035E-04	0.000E+00
rb 87	2.943E+01	2.964E+01	2.986E+01	3.008E+01	3.029E+01	3.051E+01	3.072E+01	3.093E+01	3.115E+01	3.157E+01	3.157E+01
sr 87	1.393E-04	1.419E-04	1.444E-04	1.470E-04	1.496E-04	1.523E-04	1.550E-04	1.577E-04	1.605E-04	1.662E-04	1.662E-04
sr 87m	0.000E+00	1.050E-08	1.067E-08	1.086E-08	1.106E-08	1.126E-08	1.147E-08	1.168E-08	1.189E-08	1.232E-08	0.000E+00
ge 88	0.000E+00	1.304E-13	1.298E-13	1.292E-13	1.287E-13	1.281E-13	1.275E-13	1.269E-13	1.263E-13	1.251E-13	0.000E+00
as 88	0.000E+00	1.331E-10	1.323E-10	1.314E-10	1.304E-10	1.295E-10	1.286E-10	1.277E-10	1.268E-10	1.250E-10	0.000E+00
se 88	0.000E+00	2.631E-08	2.624E-08	2.616E-08	2.608E-08	2.600E-08	2.592E-08	2.584E-08	2.576E-08	2.559E-08	0.000E+00
br 88	0.000E+00	1.430E-06	1.425E-06	1.420E-06	1.414E-06	1.409E-06	1.404E-06	1.398E-06	1.393E-06	1.382E-06	0.000E+00
kr 88	0.000E+00	1.621E-03	1.617E-03	1.611E-03	1.606E-03	1.600E-03	1.595E-03	1.589E-03	1.584E-03	1.572E-03	0.000E+00
rb 88	0.000E+00	1.735E-04	1.730E-04	1.724E-04	1.718E-04	1.712E-04	1.706E-04	1.701E-04	1.695E-04	1.682E-04	0.000E+00
sr 88	4.212E+01	4.243E+01	4.274E+01	4.305E+01	4.335E+01	4.366E+01	4.396E+01	4.427E+01	4.457E+01	4.517E+01	4.517E+01
as 89	0.000E+00	2.383E-12	2.384E-12	2.384E-12	2.384E-12	2.384E-12	2.384E-12	2.384E-12	2.384E-12	2.383E-12	0.000E+00
se 89	0.000E+00	2.560E-09	2.554E-09	2.546E-09	2.538E-09	2.531E-09	2.523E-09	2.516E-09	2.508E-09	2.492E-09	0.000E+00
br 89	0.000E+00	2.670E-07	2.662E-07	2.653E-07	2.644E-07	2.635E-07	2.626E-07	2.618E-07	2.609E-07	2.590E-07	0.000E+00

kr 89	0.000E+00	3.778E-05	3.765E-05	3.751E-05	3.737E-05	3.723E-05	3.709E-05	3.695E-05	3.681E-05	3.652E-05	0.000E+00
rb 89	0.000E+00	1.956E-04	1.950E-04	1.943E-04	1.936E-04	1.929E-04	1.922E-04	1.915E-04	1.908E-04	1.894E-04	0.000E+00
sr 89	5.150E-05	3.327E-01	5.472E-01	6.849E-01	7.729E-01	8.286E-01	8.636E-01	8.850E-01	8.978E-01	9.083E-01	4.705E-01
y 89	5.641E+01	5.649E+01	5.668E+01	5.695E+01	5.727E+01	5.761E+01	5.798E+01	5.836E+01	5.875E+01	5.953E+01	5.997E+01
y 89m	1.761E-14	1.157E-10	1.890E-10	2.361E-10	2.662E-10	2.852E-10	2.972E-10	3.045E-10	3.089E-10	3.125E-10	1.609E-10
as 90	0.000E+00	1.783E-14	1.785E-14	1.787E-14	1.789E-14	1.791E-14	1.793E-14	1.795E-14	1.797E-14	1.800E-14	0.000E+00
se 90	0.000E+00	6.000E-10	5.988E-10	5.974E-10	5.960E-10	5.946E-10	5.932E-10	5.918E-10	5.904E-10	5.873E-10	0.000E+00
br 90	0.000E+00	6.484E-08	6.469E-08	6.450E-08	6.431E-08	6.413E-08	6.395E-08	6.376E-08	6.358E-08	6.318E-08	0.000E+00
kr 90	0.000E+00	6.920E-06	6.897E-06	6.870E-06	6.843E-06	6.816E-06	6.789E-06	6.763E-06	6.737E-06	6.680E-06	0.000E+00
rb 90	0.000E+00	3.037E-05	3.027E-05	3.016E-05	3.004E-05	2.993E-05	2.982E-05	2.970E-05	2.959E-05	2.935E-05	0.000E+00
rb 90m	0.000E+00	1.650E-05	1.646E-05	1.642E-05	1.637E-05	1.632E-05	1.628E-05	1.623E-05	1.618E-05	1.608E-05	0.000E+00
sr 90	6.243E+01	6.280E+01	6.316E+01	6.353E+01	6.389E+01	6.424E+01	6.460E+01	6.495E+01	6.530E+01	6.599E+01	6.578E+01
y 90	1.623E-02	1.647E-02	1.657E-02	1.666E-02	1.676E-02	1.685E-02	1.695E-02	1.704E-02	1.713E-02	1.731E-02	1.710E-02
y 90m	0.000E+00	7.304E-09	7.346E-09	7.394E-09	7.449E-09	7.507E-09	7.568E-09	7.631E-09	7.696E-09	7.820E-09	0.000E+00
zr 90	6.512E+00	6.646E+00	6.782E+00	6.919E+00	7.056E+00	7.194E+00	7.333E+00	7.473E+00	7.613E+00	7.896E+00	8.110E+00
zr 90m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
se 91	0.000E+00	3.950E-11	3.949E-11	3.945E-11	3.941E-11	3.938E-11	3.934E-11	3.931E-11	3.928E-11	3.918E-11	0.000E+00
br 91	0.000E+00	6.619E-09	6.596E-09	6.571E-09	6.546E-09	6.521E-09	6.497E-09	6.472E-09	6.448E-09	6.395E-09	0.000E+00
kr 91	0.000E+00	1.272E-06	1.267E-06	1.262E-06	1.257E-06	1.253E-06	1.248E-06	1.243E-06	1.238E-06	1.228E-06	0.000E+00
rb 91	0.000E+00	1.562E-05	1.557E-05	1.552E-05	1.547E-05	1.542E-05	1.537E-05	1.532E-05	1.528E-05	1.517E-05	0.000E+00
sr 91	0.000E+00	9.879E-03	9.854E-03	9.824E-03	9.794E-03	9.765E-03	9.735E-03	9.706E-03	9.677E-03	9.612E-03	0.000E+00
y 91	3.550E-04	4.492E-01	7.635E-01	9.781E-01	1.124E+00	1.223E+00	1.290E+00	1.334E+00	1.363E+00	1.393E+00	7.948E-01
y 91m	0.000E+00	4.987E-04	4.975E-04	4.960E-04	4.945E-04	4.930E-04	4.915E-04	4.900E-04	4.885E-04	4.853E-04	0.000E+00
zr 91	7.298E+01	7.306E+01	7.329E+01	7.362E+01	7.402E+01	7.446E+01	7.493E+01	7.542E+01	7.592E+01	7.696E+01	7.757E+01
nb 91	1.206E-10	1.220E-10	1.234E-10	1.249E-10	1.263E-10	1.277E-10	1.292E-10	1.306E-10	1.321E-10	1.350E-10	1.350E-10
se 92	0.000E+00	2.077E-12	2.078E-12	2.078E-12	2.078E-12	2.078E-12	2.078E-12	2.078E-12	2.079E-12	2.077E-12	0.000E+00
br 92	0.000E+00	7.001E-10	6.983E-10	6.963E-10	6.943E-10	6.923E-10	6.903E-10	6.884E-10	6.864E-10	6.821E-10	0.000E+00
kr 92	0.000E+00	1.482E-07	1.478E-07	1.473E-07	1.467E-07	1.462E-07	1.457E-07	1.452E-07	1.447E-07	1.436E-07	0.000E+00
rb 92	0.000E+00	1.078E-06	1.076E-06	1.072E-06	1.069E-06	1.066E-06	1.063E-06	1.060E-06	1.057E-06	1.050E-06	0.000E+00
sr 92	0.000E+00	3.040E-03	3.034E-03	3.027E-03	3.019E-03	3.011E-03	3.004E-03	2.996E-03	2.989E-03	2.972E-03	0.000E+00
y 92	0.000E+00	3.999E-03	3.990E-03	3.980E-03	3.970E-03	3.960E-03	3.950E-03	3.940E-03	3.931E-03	3.908E-03	0.000E+00
zr 92	7.750E+01	7.810E+01	7.870E+01	7.929E+01	7.989E+01	8.049E+01	8.108E+01	8.167E+01	8.226E+01	8.344E+01	8.345E+01

case 5 fission products page 90
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
nb 92	1.480E-08	1.497E-08	1.515E-08	1.532E-08	1.550E-08	1.567E-08	1.585E-08	1.603E-08	1.620E-08	1.656E-08	1.656E-08
sc 93	0.000E+00	9.285E-15	9.304E-15	9.318E-15	9.333E-15	9.347E-15	9.362E-15	9.376E-15	9.391E-15	9.413E-15	0.000E+00
br 93	0.000E+00	1.037E-10	1.040E-10	1.043E-10	1.046E-10	1.048E-10	1.051E-10	1.054E-10	1.057E-10	1.061E-10	0.000E+00
kr 93	0.000E+00	3.581E-08	3.572E-08	3.561E-08	3.550E-08	3.540E-08	3.529E-08	3.519E-08	3.508E-08	3.485E-08	0.000E+00
rb 93	0.000E+00	1.156E-06	1.155E-06	1.152E-06	1.150E-06	1.147E-06	1.145E-06	1.142E-06	1.140E-06	1.134E-06	0.000E+00
sr 93	0.000E+00	1.592E-04	1.590E-04	1.586E-04	1.583E-04	1.580E-04	1.577E-04	1.574E-04	1.571E-04	1.563E-04	0.000E+00
y 93	0.000E+00	8.833E-03	8.819E-03	8.801E-03	8.784E-03	8.766E-03	8.749E-03	8.732E-03	8.714E-03	8.674E-03	0.000E+00
zr 93	5.710E+01	5.754E+01	5.799E+01	5.844E+01	5.889E+01	5.933E+01	5.978E+01	6.022E+01	6.066E+01	6.154E+01	6.155E+01
nb 93	1.004E-05	1.040E-05	1.078E-05	1.116E-05	1.155E-05	1.194E-05	1.235E-05	1.276E-05	1.317E-05	1.403E-05	1.468E-05
nb 93m	9.389E-05	9.579E-05	9.771E-05	9.963E-05	1.016E-04	1.035E-04	1.055E-04	1.074E-04	1.094E-04	1.134E-04	1.164E-04
br 94	0.000E+00	3.279E-12	3.283E-12	3.286E-12	3.289E-12	3.292E-12	3.295E-12	3.298E-12	3.301E-12	3.305E-12	0.000E+00
kr 94	0.000E+00	2.720E-09	2.714E-09	2.708E-09	2.702E-09	2.695E-09	2.689E-09	2.683E-09	2.677E-09	2.663E-09	0.000E+00
rb 94	0.000E+00	2.861E-07	2.857E-07	2.852E-07	2.847E-07	2.842E-07	2.837E-07	2.832E-07	2.827E-07	2.816E-07	0.000E+00
sr 94	0.000E+00	2.715E-05	2.711E-05	2.707E-05	2.702E-05	2.697E-05	2.692E-05	2.688E-05	2.683E-05	2.672E-05	0.000E+00
y 94	0.000E+00	4.387E-04	4.382E-04	4.374E-04	4.367E-04	4.360E-04	4.353E-04	4.345E-04	4.338E-04	4.321E-04	0.000E+00
zr 94	9.223E+01	9.299E+01	9.375E+01	9.451E+01	9.526E+01	9.602E+01	9.678E+01	9.753E+01	9.828E+01	9.979E+01	9.979E+01
nb 94	5.562E-05	5.624E-05	5.685E-05	5.747E-05	5.808E-05	5.870E-05	5.931E-05	5.993E-05	6.055E-05	6.179E-05	6.179E-05
nb 94m	0.000E+00	5.314E-11	5.326E-11	5.337E-11	5.347E-11	5.357E-11	5.367E-11	5.376E-11	5.386E-11	5.401E-11	0.000E+00
br 95	0.000E+00	3.627E-14	3.634E-14	3.640E-14	3.645E-14	3.651E-14	3.657E-14	3.662E-14	3.668E-14	3.677E-14	0.000E+00
kr 95	0.000E+00	1.005E-09	1.006E-09	1.008E-09	1.009E-09	1.010E-09	1.011E-09	1.013E-09	1.014E-09	1.016E-09	0.000E+00
rb 95	0.000E+00	1.995E-08	1.993E-08	1.990E-08	1.987E-08	1.984E-08	1.981E-08	1.978E-08	1.975E-08	1.968E-08	0.000E+00
sr 95	0.000E+00	8.194E-06	8.183E-06	8.170E-06	8.156E-06	8.142E-06	8.128E-06	8.115E-06	8.101E-06	8.069E-06	0.000E+00
y 95	0.000E+00	2.596E-04	2.593E-04	2.590E-04	2.586E-04	2.582E-04	2.579E-04	2.575E-04	2.572E-04	2.563E-04	0.000E+00
zr 95	1.254E-03	6.745E-01	1.152E+00	1.489E+00	1.728E+00	1.896E+00	2.014E+00	2.098E+00	2.156E+00	2.224E+00	1.323E+00
nb 95	1.516E-03	1.005E-01	2.958E-01	5.009E-01	6.817E-01	8.285E-01	9.423E-01	1.028E+00	1.091E+00	1.170E+00	1.010E+00
nb 95m	8.316E-07	3.624E-04	6.788E-04	9.028E-04	1.061E-03	1.173E-03	1.252E-03	1.307E-03	1.346E-03	1.434E-03	8.775E-04
mo 95	9.276E+01	9.271E+01	9.277E+01	9.295E+01	9.326E+01	9.367E+01	9.416E+01	9.471E+01	9.531E+01	9.660E+01	9.766E+01
br 96	0.000E+00	6.796E-15	6.809E-15	6.819E-15	6.829E-15	6.838E-15	6.848E-15	6.858E-15	6.868E-15	6.883E-15	0.000E+00
kr 96	0.000E+00	6.540E-11	6.546E-11	6.549E-11	6.552E-11	6.556E-11	6.559E-11	6.562E-11	6.566E-11	6.568E-11	0.000E+00
rb 96	0.000E+00	2.590E-09	2.587E-09	2.583E-09	2.579E-09	2.575E-09	2.571E-09	2.568E-09	2.564E-09	2.555E-09	0.000E+00
sr 96	0.000E+00	2.557E-07	2.554E-07	2.550E-07	2.546E-07	2.542E-07	2.538E-07	2.534E-07	2.531E-07	2.521E-07	0.000E+00
y 96	0.000E+00	2.370E-06	2.368E-06	2.365E-06	2.362E-06	2.359E-06	2.357E-06	2.354E-06	2.351E-06	2.344E-06	0.000E+00
zr 96	9.637E+01	9.719E+01	9.800E+01	9.882E+01	9.963E+01	1.004E+02	1.013E+02	1.021E+02	1.029E+02	1.045E+02	1.045E+02
nb 96	0.000E+00	1.917E-05	2.059E-05	2.208E-05	2.341E-05	2.452E-05	2.541E-05	2.611E-05	2.667E-05	2.738E-05	3.852E-20
mo 96	2.965E+00	3.032E+00	3.099E+00	3.166E+00	3.234E+00	3.302E+00	3.370E+00	3.439E+00	3.509E+00	3.650E+00	3.650E+00
kr 97	0.000E+00	3.081E-13	3.087E-13	3.092E-13	3.097E-13	3.102E-13	3.106E-13	3.111E-13	3.116E-13	3.123E-13	0.000E+00
rb 97	0.000E+00	6.039E-10	6.020E-10	5.998E-10	5.976E-10	5.954E-10	5.933E-10	5.912E-10	5.891E-10	5.845E-10	0.000E+00

sr 97	0.000E+00	5.140E-08	5.134E-08	5.125E-08	5.116E-08	5.108E-08	5.099E-08	5.091E-08	5.082E-08	5.063E-08	0.000E+00
y 97	0.000E+00	1.164E-06	1.163E-06	1.162E-06	1.161E-06	1.160E-06	1.158E-06	1.157E-06	1.156E-06	1.153E-06	0.000E+00
zr 97	0.000E+00	2.529E-02	2.528E-02	2.527E-02	2.525E-02	2.523E-02	2.521E-02	2.519E-02	2.518E-02	2.513E-02	7.588E-23
nb 97	0.000E+00	1.812E-03	1.811E-03	1.810E-03	1.809E-03	1.808E-03	1.807E-03	1.805E-03	1.804E-03	1.800E-03	5.814E-24
nb 97m	0.000E+00	2.368E-05	2.367E-05	2.366E-05	2.364E-05	2.362E-05	2.361E-05	2.359E-05	2.358E-05	2.353E-05	7.101E-26
mo 97	9.089E+01	9.165E+01	9.244E+01	9.322E+01	9.401E+01	9.479E+01	9.558E+01	9.636E+01	9.714E+01	9.870E+01	9.873E+01
kr 98	0.000E+00	1.784E-13	1.788E-13	1.791E-13	1.794E-13	1.797E-13	1.800E-13	1.803E-13	1.807E-13	1.811E-13	0.000E+00
rb 98	0.000E+00	4.292E-11	4.299E-11	4.304E-11	4.309E-11	4.314E-11	4.319E-11	4.324E-11	4.329E-11	4.336E-11	0.000E+00
sr 98	0.000E+00	3.312E-08	3.311E-08	3.308E-08	3.305E-08	3.303E-08	3.300E-08	3.297E-08	3.295E-08	3.288E-08	0.000E+00
y 98	0.000E+00	1.592E-07	1.592E-07	1.590E-07	1.588E-07	1.587E-07	1.585E-07	1.584E-07	1.582E-07	1.578E-07	0.000E+00
zr 98	0.000E+00	1.372E-05	1.371E-05	1.371E-05	1.370E-05	1.369E-05	1.369E-05	1.368E-05	1.367E-05	1.365E-05	0.000E+00
nb 98	0.000E+00	1.288E-06	1.288E-06	1.288E-06	1.287E-06	1.286E-06	1.286E-06	1.285E-06	1.284E-06	1.282E-06	0.000E+00
nb 98m	0.000E+00	1.131E-05	1.133E-05	1.135E-05	1.137E-05	1.139E-05	1.141E-05	1.143E-05	1.144E-05	1.147E-05	0.000E+00

case 5 fission products page 91
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
mo 98	9.803E+01	9.890E+01	9.977E+01	1.006E+02	1.015E+02	1.024E+02	1.032E+02	1.041E+02	1.050E+02	1.067E+02	1.067E+02
tc 98	4.348E-04	4.432E-04	4.517E-04	4.602E-04	4.688E-04	4.775E-04	4.863E-04	4.952E-04	5.041E-04	5.223E-04	5.223E-04
rb 99	0.000E+00	6.647E-13	6.660E-13	6.670E-13	6.680E-13	6.690E-13	6.701E-13	6.711E-13	6.722E-13	6.738E-13	0.000E+00
sr 99	0.000E+00	5.302E-09	5.290E-09	5.276E-09	5.261E-09	5.247E-09	5.233E-09	5.219E-09	5.206E-09	5.175E-09	0.000E+00
y 99	0.000E+00	2.316E-07	2.314E-07	2.312E-07	2.309E-07	2.306E-07	2.304E-07	2.301E-07	2.299E-07	2.292E-07	0.000E+00
zr 99	0.000E+00	9.308E-07	9.309E-07	9.305E-07	9.302E-07	9.298E-07	9.295E-07	9.292E-07	9.289E-07	9.276E-07	0.000E+00
nb 99	0.000E+00	4.304E-06	4.305E-06	4.303E-06	4.302E-06	4.300E-06	4.299E-06	4.297E-06	4.296E-06	4.290E-06	0.000E+00
nb 99m	0.000E+00	3.091E-05	3.091E-05	3.091E-05	3.090E-05	3.089E-05	3.088E-05	3.088E-05	3.087E-05	3.083E-05	0.000E+00
mo 99	0.000E+00	1.164E-01	1.165E-01	1.164E-01	1.164E-01	1.163E-01	1.163E-01	1.163E-01	1.163E-01	1.161E-01	6.398E-07
tc 99	9.721E+01	9.787E+01	9.866E+01	9.944E+01	1.002E+02	1.010E+02	1.018E+02	1.026E+02	1.033E+02	1.049E+02	1.050E+02
tc 99m	0.000E+00	9.375E-03	9.380E-03	9.378E-03	9.376E-03	9.373E-03	9.371E-03	9.369E-03	9.367E-03	9.352E-03	5.647E-08
ru 99	4.536E-03	4.587E-03	4.642E-03	4.698E-03	4.753E-03	4.809E-03	4.865E-03	4.921E-03	4.977E-03	5.090E-03	5.139E-03
rb100	0.000E+00	3.450E-13	3.458E-13	3.464E-13	3.471E-13	3.477E-13	3.484E-13	3.490E-13	3.497E-13	3.508E-13	0.000E+00
sr100	0.000E+00	5.448E-10	5.458E-10	5.465E-10	5.473E-10	5.480E-10	5.487E-10	5.495E-10	5.503E-10	5.514E-10	0.000E+00
y100	0.000E+00	3.812E-08	3.816E-08	3.818E-08	3.821E-08	3.823E-08	3.825E-08	3.827E-08	3.830E-08	3.832E-08	0.000E+00
zr100	0.000E+00	3.113E-06	3.112E-06	3.110E-06	3.108E-06	3.106E-06	3.104E-06	3.102E-06	3.100E-06	3.094E-06	0.000E+00
nb100	0.000E+00	7.185E-07	7.185E-07	7.182E-07	7.179E-07	7.176E-07	7.173E-07	7.170E-07	7.167E-07	7.156E-07	0.000E+00
nb100m	0.000E+00	1.209E-07	1.212E-07	1.215E-07	1.217E-07	1.220E-07	1.222E-07	1.225E-07	1.227E-07	1.231E-07	0.000E+00

mo100	1.110E+02	1.120E+02	1.130E+02	1.140E+02	1.150E+02	1.160E+02	1.170E+02	1.180E+02	1.189E+02	1.209E+02	1.209E+02
tc100	0.000E+00	1.246E-06	1.258E-06	1.271E-06	1.283E-06	1.295E-06	1.308E-06	1.320E-06	1.332E-06	1.356E-06	0.000E+00
ru100	8.103E+00	8.251E+00	8.400E+00	8.551E+00	8.704E+00	8.858E+00	9.013E+00	9.170E+00	9.329E+00	9.650E+00	9.650E+00
rb101	0.000E+00	2.670E-15	2.676E-15	2.681E-15	2.686E-15	2.690E-15	2.695E-15	2.700E-15	2.705E-15	2.712E-15	0.000E+00
sr101	0.000E+00	7.843E-11	7.848E-11	7.850E-11	7.851E-11	7.853E-11	7.855E-11	7.857E-11	7.859E-11	7.858E-11	0.000E+00
y101	0.000E+00	1.272E-08	1.271E-08	1.269E-08	1.266E-08	1.264E-08	1.262E-08	1.260E-08	1.258E-08	1.253E-08	0.000E+00
zr101	0.000E+00	5.136E-07	5.138E-07	5.137E-07	5.137E-07	5.137E-07	5.137E-07	5.137E-07	5.137E-07	5.133E-07	0.000E+00
nb101	0.000E+00	3.075E-06	3.076E-06	3.076E-06	3.076E-06	3.077E-06	3.077E-06	3.077E-06	3.077E-06	3.075E-06	0.000E+00
mo101	0.000E+00	3.998E-04	4.000E-04	4.000E-04	4.001E-04	4.001E-04	4.002E-04	4.002E-04	4.003E-04	4.001E-04	0.000E+00
tc101	0.000E+00	3.889E-04	3.891E-04	3.892E-04	3.892E-04	3.893E-04	3.893E-04	3.893E-04	3.894E-04	3.892E-04	0.000E+00
ru101	9.223E+01	9.305E+01	9.387E+01	9.469E+01	9.551E+01	9.633E+01	9.715E+01	9.797E+01	9.880E+01	1.004E+02	1.004E+02
sr102	0.000E+00	1.940E-11	1.938E-11	1.935E-11	1.932E-11	1.928E-11	1.925E-11	1.922E-11	1.919E-11	1.912E-11	0.000E+00
y102	0.000E+00	1.035E-08	1.031E-08	1.026E-08	1.021E-08	1.017E-08	1.012E-08	1.008E-08	1.003E-08	9.936E-09	0.000E+00
zr102	0.000E+00	5.148E-07	5.147E-07	5.145E-07	5.142E-07	5.139E-07	5.137E-07	5.134E-07	5.132E-07	5.124E-07	0.000E+00
nb102	0.000E+00	4.796E-07	4.800E-07	4.802E-07	4.804E-07	4.806E-07	4.808E-07	4.810E-07	4.812E-07	4.812E-07	0.000E+00
mo102	0.000E+00	2.967E-04	2.971E-04	2.973E-04	2.975E-04	2.977E-04	2.979E-04	2.981E-04	2.983E-04	2.984E-04	0.000E+00
tc102	0.000E+00	2.313E-06	2.316E-06	2.318E-06	2.319E-06	2.321E-06	2.322E-06	2.324E-06	2.325E-06	2.327E-06	0.000E+00
tc102m	0.000E+00	1.216E-07	1.219E-07	1.221E-07	1.224E-07	1.226E-07	1.228E-07	1.231E-07	1.233E-07	1.236E-07	0.000E+00
ru102	8.955E+01	9.042E+01	9.130E+01	9.218E+01	9.306E+01	9.394E+01	9.482E+01	9.571E+01	9.659E+01	9.836E+01	9.836E+01
rh102	4.626E-05	4.738E-05	4.848E-05	4.957E-05	5.064E-05	5.172E-05	5.278E-05	5.384E-05	5.490E-05	5.701E-05	5.525E-05
pd102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sr103	0.000E+00	6.873E-14	6.890E-14	6.904E-14	6.917E-14	6.931E-14	6.945E-14	6.958E-14	6.972E-14	6.995E-14	0.000E+00
y103	0.000E+00	8.913E-10	8.871E-10	8.826E-10	8.781E-10	8.736E-10	8.692E-10	8.648E-10	8.604E-10	8.511E-10	0.000E+00
zr103	0.000E+00	8.680E-08	8.691E-08	8.699E-08	8.706E-08	8.713E-08	8.721E-08	8.728E-08	8.736E-08	8.746E-08	0.000E+00
nb103	0.000E+00	4.142E-07	4.149E-07	4.155E-07	4.160E-07	4.166E-07	4.171E-07	4.176E-07	4.182E-07	4.190E-07	0.000E+00
mo103	0.000E+00	2.905E-05	2.911E-05	2.916E-05	2.921E-05	2.926E-05	2.930E-05	2.935E-05	2.940E-05	2.947E-05	0.000E+00
tc103	0.000E+00	2.375E-05	2.380E-05	2.384E-05	2.388E-05	2.391E-05	2.395E-05	2.399E-05	2.403E-05	2.408E-05	0.000E+00
ru103	3.373E-06	6.406E-01	1.008E+00	1.219E+00	1.340E+00	1.410E+00	1.452E+00	1.476E+00	1.491E+00	1.507E+00	6.459E-01
rh103	6.185E+01	6.167E+01	6.177E+01	6.202E+01	6.236E+01	6.275E+01	6.317E+01	6.360E+01	6.404E+01	6.492E+01	6.579E+01
rh103m	3.343E-09	6.353E-04	9.991E-04	1.208E-03	1.328E-03	1.398E-03	1.439E-03	1.463E-03	1.478E-03	1.494E-03	6.401E-04
sr104	0.000E+00	2.985E-14	2.992E-14	2.999E-14	3.005E-14	3.011E-14	3.017E-14	3.024E-14	3.030E-14	3.040E-14	0.000E+00
y104	0.000E+00	1.353E-11	1.357E-11	1.361E-11	1.364E-11	1.368E-11	1.372E-11	1.375E-11	1.379E-11	1.386E-11	0.000E+00

case 5 fission products page 92
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
zr104	0.000E+00	5.134E-08	5.148E-08	5.159E-08	5.171E-08	5.183E-08	5.195E-08	5.207E-08	5.219E-08	5.240E-08	0.000E+00
nb104	0.000E+00	6.138E-07	6.157E-07	6.173E-07	6.190E-07	6.206E-07	6.222E-07	6.239E-07	6.255E-07	6.284E-07	0.000E+00
mo104	0.000E+00	2.056E-05	2.062E-05	2.067E-05	2.072E-05	2.078E-05	2.083E-05	2.088E-05	2.094E-05	2.103E-05	0.000E+00
tc104	0.000E+00	3.955E-04	3.967E-04	3.977E-04	3.987E-04	3.998E-04	4.008E-04	4.018E-04	4.028E-04	4.045E-04	0.000E+00
ru104	6.158E+01	6.226E+01	6.295E+01	6.364E+01	6.433E+01	6.502E+01	6.571E+01	6.641E+01	6.710E+01	6.850E+01	6.850E+01
rh104	0.000E+00	8.453E-06	8.486E-06	8.536E-06	8.598E-06	8.667E-06	8.740E-06	8.815E-06	8.892E-06	9.040E-06	0.000E+00
rh104m	0.000E+00	3.799E-06	3.814E-06	3.836E-06	3.864E-06	3.895E-06	3.928E-06	3.962E-06	3.996E-06	4.063E-06	0.000E+00
pd104	1.857E+01	1.895E+01	1.932E+01	1.970E+01	2.008E+01	2.047E+01	2.085E+01	2.124E+01	2.164E+01	2.244E+01	2.244E+01
y105	0.000E+00	1.940E-13	1.947E-13	1.952E-13	1.957E-13	1.963E-13	1.968E-13	1.973E-13	1.979E-13	1.988E-13	0.000E+00
zr105	0.000E+00	2.717E-09	2.712E-09	2.706E-09	2.700E-09	2.694E-09	2.689E-09	2.683E-09	2.678E-09	2.665E-09	0.000E+00
nb105	0.000E+00	1.522E-07	1.527E-07	1.532E-07	1.537E-07	1.542E-07	1.546E-07	1.551E-07	1.556E-07	1.565E-07	0.000E+00
mo105	0.000E+00	8.982E-06	9.015E-06	9.045E-06	9.075E-06	9.104E-06	9.133E-06	9.163E-06	9.192E-06	9.244E-06	0.000E+00
tc105	0.000E+00	1.374E-04	1.379E-04	1.384E-04	1.388E-04	1.393E-04	1.398E-04	1.402E-04	1.407E-04	1.415E-04	0.000E+00
ru105	0.000E+00	4.867E-03	4.886E-03	4.903E-03	4.919E-03	4.936E-03	4.952E-03	4.969E-03	4.985E-03	5.014E-03	0.000E+00
rh105	0.000E+00	3.810E-02	3.825E-02	3.838E-02	3.851E-02	3.863E-02	3.876E-02	3.889E-02	3.902E-02	3.924E-02	7.041E-12
rh105m	0.000E+00	3.892E-06	3.908E-06	3.921E-06	3.934E-06	3.947E-06	3.961E-06	3.974E-06	3.987E-06	4.010E-06	0.000E+00
pd105	4.470E+01	4.520E+01	4.574E+01	4.629E+01	4.683E+01	4.738E+01	4.793E+01	4.848E+01	4.904E+01	5.015E+01	5.019E+01
y106	0.000E+00	2.149E-15	2.156E-15	2.163E-15	2.169E-15	2.175E-15	2.182E-15	2.188E-15	2.194E-15	2.206E-15	0.000E+00
zr106	0.000E+00	2.533E-10	2.545E-10	2.557E-10	2.568E-10	2.579E-10	2.590E-10	2.601E-10	2.613E-10	2.634E-10	0.000E+00
nb106	0.000E+00	1.003E-08	1.009E-08	1.015E-08	1.021E-08	1.027E-08	1.032E-08	1.038E-08	1.044E-08	1.055E-08	0.000E+00
mo106	0.000E+00	1.174E-06	1.180E-06	1.185E-06	1.191E-06	1.196E-06	1.201E-06	1.206E-06	1.212E-06	1.222E-06	0.000E+00
tc106	0.000E+00	7.727E-06	7.766E-06	7.800E-06	7.834E-06	7.869E-06	7.903E-06	7.937E-06	7.972E-06	8.034E-06	0.000E+00
ru106	3.730E+00	3.951E+00	4.161E+00	4.361E+00	4.552E+00	4.733E+00	4.906E+00	5.071E+00	5.229E+00	5.522E+00	5.050E+00
rh106	3.462E-06	3.777E-06	3.973E-06	4.159E-06	4.336E-06	4.505E-06	4.666E-06	4.820E-06	4.966E-06	5.240E-06	4.686E-06
rh106m	0.000E+00	1.296E-05	1.304E-05	1.311E-05	1.318E-05	1.325E-05	1.331E-05	1.338E-05	1.345E-05	1.356E-05	0.000E+00
pd106	3.444E+01	3.470E+01	3.498E+01	3.527E+01	3.557E+01	3.589E+01	3.621E+01	3.655E+01	3.689E+01	3.761E+01	3.808E+01
ag106	0.000E+00	8.437E-16	8.610E-16	8.782E-16	8.956E-16	9.133E-16	9.312E-16	9.493E-16	9.677E-16	1.005E-15	0.000E+00
y107	0.000E+00	2.027E-17	2.034E-17	2.040E-17	2.046E-17	2.052E-17	2.058E-17	2.064E-17	2.069E-17	2.080E-17	0.000E+00
zr107	0.000E+00	6.736E-13	6.769E-13	6.799E-13	6.830E-13	6.860E-13	6.891E-13	6.922E-13	6.953E-13	7.010E-13	0.000E+00
nb107	0.000E+00	1.378E-09	1.388E-09	1.397E-09	1.406E-09	1.415E-09	1.424E-09	1.433E-09	1.442E-09	1.460E-09	0.000E+00
mo107	0.000E+00	1.982E-07	1.994E-07	2.005E-07	2.016E-07	2.027E-07	2.038E-07	2.049E-07	2.060E-07	2.081E-07	0.000E+00
tc107	0.000E+00	3.122E-06	3.140E-06	3.156E-06	3.172E-06	3.188E-06	3.204E-06	3.221E-06	3.237E-06	3.266E-06	0.000E+00
ru107	0.000E+00	4.004E-05	4.026E-05	4.046E-05	4.066E-05	4.085E-05	4.105E-05	4.125E-05	4.145E-05	4.181E-05	0.000E+00
rh107	0.000E+00	2.323E-04	2.335E-04	2.347E-04	2.358E-04	2.370E-04	2.381E-04	2.393E-04	2.404E-04	2.425E-04	0.000E+00
pd107	2.423E+01	2.456E+01	2.489E+01	2.522E+01	2.555E+01	2.589E+01	2.622E+01	2.656E+01	2.690E+01	2.758E+01	2.758E+01
pd107m	0.000E+00	1.854E-08	1.873E-08	1.892E-08	1.912E-08	1.932E-08	1.953E-08	1.974E-08	1.997E-08	2.041E-08	0.000E+00
ag107	8.891E-06	9.108E-06	9.327E-06	9.549E-06	9.774E-06	1.000E-05	1.023E-05	1.047E-05	1.070E-05	1.118E-05	1.157E-05

zr108 0.000E+00 4.251E-14 4.271E-14 4.289E-14 4.308E-14 4.326E-14 4.345E-14 4.364E-14 4.382E-14 4.417E-14 0.000E+00
nb108 0.000E+00 1.352E-11 1.363E-11 1.372E-11 1.382E-11 1.392E-11 1.402E-11 1.412E-11 1.422E-11 1.441E-11 0.000E+00
mo108 0.000E+00 1.230E-08 1.240E-08 1.249E-08 1.258E-08 1.267E-08 1.276E-08 1.285E-08 1.294E-08 1.312E-08 0.000E+00
tc108 0.000E+00 2.611E-07 2.629E-07 2.645E-07 2.661E-07 2.678E-07 2.694E-07 2.711E-07 2.727E-07 2.758E-07 0.000E+00
ru108 0.000E+00 3.115E-05 3.133E-05 3.150E-05 3.166E-05 3.183E-05 3.200E-05 3.217E-05 3.234E-05 3.265E-05 0.000E+00
rh108 0.000E+00 1.948E-06 1.960E-06 1.970E-06 1.981E-06 1.991E-06 2.001E-06 2.012E-06 2.022E-06 2.042E-06 0.000E+00
rh108m 0.000E+00 6.769E-07 6.799E-07 6.825E-07 6.851E-07 6.877E-07 6.902E-07 6.927E-07 6.952E-07 6.997E-07 0.000E+00
pd108 1.556E+01 1.578E+01 1.600E+01 1.622E+01 1.644E+01 1.666E+01 1.688E+01 1.710E+01 1.732E+01 1.777E+01 1.777E+01
ag108 6.365E-14 3.900E-11 3.956E-11 4.009E-11 4.063E-11 4.118E-11 4.172E-11 4.227E-11 4.282E-11 4.389E-11 7.946E-14
ag108m 2.062E-05 2.110E-05 2.159E-05 2.209E-05 2.260E-05 2.311E-05 2.362E-05 2.415E-05 2.468E-05 2.576E-05 2.574E-05
cd108 2.147E-05 2.197E-05 2.248E-05 2.300E-05 2.352E-05 2.405E-05 2.459E-05 2.513E-05 2.568E-05 2.681E-05 2.681E-05
zr109 0.000E+00 1.037E-17 1.041E-17 1.044E-17 1.047E-17 1.050E-17 1.053E-17 1.057E-17 1.060E-17 1.066E-17 0.000E+00
nb109 0.000E+00 6.984E-13 7.033E-13 7.080E-13 7.126E-13 7.173E-13 7.220E-13 7.267E-13 7.315E-13 7.405E-13 0.000E+00

case 5 fission products page 93
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
mo109	0.000E+00	1.218E-09	1.228E-09	1.237E-09	1.246E-09	1.255E-09	1.264E-09	1.273E-09	1.282E-09	1.299E-09	0.000E+00
tc109	0.000E+00	2.391E-08	2.407E-08	2.422E-08	2.436E-08	2.451E-08	2.466E-08	2.481E-08	2.496E-08	2.524E-08	0.000E+00
ru109	0.000E+00	2.748E-06	2.763E-06	2.777E-06	2.791E-06	2.804E-06	2.818E-06	2.832E-06	2.846E-06	2.871E-06	0.000E+00
rh109	0.000E+00	7.328E-06	7.367E-06	7.403E-06	7.439E-06	7.474E-06	7.510E-06	7.545E-06	7.580E-06	7.645E-06	0.000E+00
rh109m	0.000E+00	2.290E-06	2.302E-06	2.313E-06	2.325E-06	2.336E-06	2.347E-06	2.358E-06	2.369E-06	2.389E-06	0.000E+00
pd109	0.000E+00	5.046E-03	5.079E-03	5.109E-03	5.139E-03	5.169E-03	5.200E-03	5.230E-03	5.260E-03	5.316E-03	0.000E+00
pd109m	0.000E+00	1.294E-07	1.307E-07	1.319E-07	1.331E-07	1.343E-07	1.355E-07	1.367E-07	1.380E-07	1.403E-07	0.000E+00
ag109	1.027E+01	1.039E+01	1.051E+01	1.064E+01	1.076E+01	1.089E+01	1.101E+01	1.114E+01	1.126E+01	1.151E+01	1.152E+01
ag109m	5.088E-15	4.052E-06	4.078E-06	4.103E-06	4.127E-06	4.151E-06	4.175E-06	4.200E-06	4.224E-06	4.269E-06	1.030E-14
cd109	5.136E-09	5.804E-09	6.455E-09	7.089E-09	7.707E-09	8.312E-09	8.904E-09	9.485E-09	1.006E-08	1.117E-08	1.039E-08
nb110	0.000E+00	1.136E-14	1.143E-14	1.150E-14	1.156E-14	1.163E-14	1.169E-14	1.176E-14	1.182E-14	1.195E-14	0.000E+00
mo110	0.000E+00	2.487E-10	2.506E-10	2.523E-10	2.541E-10	2.559E-10	2.577E-10	2.595E-10	2.613E-10	2.648E-10	0.000E+00
tc110	0.000E+00	2.177E-09	2.194E-09	2.210E-09	2.226E-09	2.242E-09	2.258E-09	2.274E-09	2.290E-09	2.321E-09	0.000E+00
ru110	0.000E+00	3.706E-07	3.729E-07	3.751E-07	3.772E-07	3.793E-07	3.815E-07	3.836E-07	3.858E-07	3.898E-07	0.000E+00
rh110	0.000E+00	1.346E-08	1.353E-08	1.359E-08	1.364E-08	1.370E-08	1.376E-08	1.381E-08	1.387E-08	1.397E-08	0.000E+00
rh110m	0.000E+00	8.256E-07	8.306E-07	8.352E-07	8.397E-07	8.443E-07	8.489E-07	8.535E-07	8.581E-07	8.666E-07	0.000E+00
pd110	4.603E+00	4.668E+00	4.733E+00	4.798E+00	4.863E+00	4.929E+00	4.995E+00	5.061E+00	5.128E+00	5.263E+00	5.263E+00
ag110	9.697E-11	8.929E-07	9.056E-07	9.180E-07	9.304E-07	9.429E-07	9.554E-07	9.680E-07	9.806E-07	1.005E-06	2.976E-10

ag110m	6.255E-03	8.320E-03	1.025E-02	1.205E-02	1.374E-02	1.532E-02	1.680E-02	1.820E-02	1.951E-02	2.193E-02	1.919E-02	
cd110	2.989E+00	3.057E+00	3.125E+00	3.196E+00	3.267E+00	3.339E+00	3.412E+00	3.487E+00	3.562E+00	3.716E+00	3.719E+00	
nb111	0.000E+00	1.021E-16	1.025E-16	1.028E-16	1.032E-16	1.035E-16	1.038E-16	1.042E-16	1.045E-16	1.051E-16	0.000E+00	
mo111	0.000E+00	3.612E-12	3.634E-12	3.654E-12	3.675E-12	3.696E-12	3.717E-12	3.738E-12	3.760E-12	3.800E-12	0.000E+00	
tc111	0.000E+00	9.920E-10	9.994E-10	1.006E-09	1.013E-09	1.021E-09	1.028E-09	1.035E-09	1.042E-09	1.056E-09	0.000E+00	
ru111	0.000E+00	1.304E-08	1.312E-08	1.320E-08	1.328E-08	1.336E-08	1.344E-08	1.352E-08	1.360E-08	1.375E-08	0.000E+00	
rh111	0.000E+00	1.785E-07	1.795E-07	1.804E-07	1.814E-07	1.823E-07	1.833E-07	1.842E-07	1.851E-07	1.868E-07	0.000E+00	
pd111	0.000E+00	2.429E-05	2.443E-05	2.456E-05	2.468E-05	2.481E-05	2.494E-05	2.506E-05	2.519E-05	2.542E-05	0.000E+00	
pd111m	0.000E+00	1.546E-05	1.553E-05	1.560E-05	1.566E-05	1.572E-05	1.578E-05	1.584E-05	1.590E-05	1.600E-05	0.000E+00	
ag111	1.819E-34	1.060E-02	1.121E-02	1.130E-02	1.136E-02	1.141E-02	1.147E-02	1.153E-02	1.159E-02	1.170E-02	1.350E-04	
ag111m	0.000E+00	1.123E-06	1.130E-06	1.135E-06	1.141E-06	1.147E-06	1.153E-06	1.159E-06	1.165E-06	1.175E-06	0.000E+00	
cd111	2.399E+00	2.421E+00	2.454E+00	2.487E+00	2.520E+00	2.554E+00	2.588E+00	2.622E+00	2.656E+00	2.725E+00	2.736E+00	
cd111m	0.000E+00	5.360E-08	5.493E-08	5.627E-08	5.762E-08	5.900E-08	6.040E-08	6.183E-08	6.328E-08	6.620E-08	0.000E+00	
nb112	0.000E+00	1.754E-18	1.759E-18	1.762E-18	1.766E-18	1.770E-18	1.773E-18	1.777E-18	1.781E-18	1.787E-18	0.000E+00	
mo112	0.000E+00	9.514E-13	9.552E-13	9.586E-13	9.620E-13	9.654E-13	9.688E-13	9.723E-13	9.758E-13	9.820E-13	0.000E+00	
tc112	0.000E+00	3.433E-11	3.454E-11	3.474E-11	3.494E-11	3.514E-11	3.534E-11	3.554E-11	3.574E-11	3.612E-11	0.000E+00	
ru112	0.000E+00	9.586E-09	9.641E-09	9.692E-09	9.743E-09	9.794E-09	9.845E-09	9.896E-09	9.948E-09	1.004E-08	0.000E+00	
rh112	0.000E+00	9.721E-09	9.771E-09	9.817E-09	9.863E-09	9.908E-09	9.954E-09	1.000E-08	1.005E-08	1.013E-08	0.000E+00	
pd112	0.000E+00	6.090E-04	6.120E-04	6.147E-04	6.175E-04	6.202E-04	6.229E-04	6.257E-04	6.284E-04	6.334E-04	2.103E-20	
ag112	0.000E+00	9.107E-05	9.152E-05	9.193E-05	9.234E-05	9.275E-05	9.316E-05	9.357E-05	9.397E-05	9.472E-05	3.687E-21	
cd112	1.235E+00	1.251E+00	1.267E+00	1.284E+00	1.301E+00	1.318E+00	1.335E+00	1.352E+00	1.369E+00	1.404E+00	1.405E+00	
mo113	0.000E+00	4.123E-15	4.135E-15	4.145E-15	4.155E-15	4.165E-15	4.175E-15	4.185E-15	4.195E-15	4.212E-15	0.000E+00	
tc113	0.000E+00	1.160E-11	1.166E-11	1.171E-11	1.176E-11	1.181E-11	1.186E-11	1.191E-11	1.196E-11	1.205E-11	0.000E+00	
ru113	0.000E+00	2.477E-09	2.490E-09	2.502E-09	2.513E-09	2.525E-09	2.537E-09	2.549E-09	2.561E-09	2.583E-09	0.000E+00	
rh113	0.000E+00	2.771E-09	2.785E-09	2.797E-09	2.809E-09	2.821E-09	2.833E-09	2.845E-09	2.857E-09	2.880E-09	0.000E+00	
pd113	0.000E+00	4.297E-07	4.316E-07	4.334E-07	4.351E-07	4.369E-07	4.386E-07	4.404E-07	4.421E-07	4.453E-07	0.000E+00	
ag113	0.000E+00	8.688E-05	8.728E-05	8.763E-05	8.798E-05	8.833E-05	8.868E-05	8.903E-05	8.938E-05	9.002E-05	0.000E+00	
ag113m	0.000E+00	6.199E-08	6.227E-08	6.252E-08	6.277E-08	6.302E-08	6.326E-08	6.351E-08	6.376E-08	6.421E-08	0.000E+00	
cd113	1.478E-02	1.452E-02	1.444E-02	1.441E-02	1.441E-02	1.443E-02	1.445E-02	1.448E-02	1.451E-02	1.458E-02	1.467E-02	
cd113m	1.164E-02	1.178E-02	1.192E-02	1.206E-02	1.220E-02	1.234E-02	1.248E-02	1.262E-02	1.276E-02	1.305E-02	1.297E-02	
in113	2.163E-03	2.210E-03	2.257E-03	2.306E-03	2.354E-03	2.404E-03	2.453E-03	2.504E-03	2.555E-03	2.658E-03	2.742E-03	
in113m	0.000E+00	2.944E-14	2.955E-14	2.966E-14	2.976E-14	2.986E-14	2.995E-14	3.005E-14	3.015E-14	3.031E-14	0.000E+00	

case 5 fission products page 94
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
mo114	0.000E+00	3.402E-15	3.411E-15	3.418E-15	3.425E-15	3.432E-15	3.438E-15	3.445E-15	3.452E-15	3.464E-15	0.000E+00
tc114	0.000E+00	5.365E-13	5.383E-13	5.400E-13	5.416E-13	5.432E-13	5.448E-13	5.465E-13	5.481E-13	5.510E-13	0.000E+00
ru114	0.000E+00	2.377E-09	2.386E-09	2.393E-09	2.401E-09	2.409E-09	2.417E-09	2.425E-09	2.433E-09	2.448E-09	0.000E+00
rh114	0.000E+00	2.648E-09	2.658E-09	2.667E-09	2.676E-09	2.685E-09	2.693E-09	2.702E-09	2.711E-09	2.727E-09	0.000E+00
pd114	0.000E+00	5.388E-07	5.407E-07	5.424E-07	5.441E-07	5.457E-07	5.474E-07	5.491E-07	5.507E-07	5.537E-07	0.000E+00
ag114	0.000E+00	1.752E-08	1.758E-08	1.764E-08	1.769E-08	1.775E-08	1.780E-08	1.786E-08	1.791E-08	1.801E-08	0.000E+00
cd114	1.331E+00	1.347E+00	1.363E+00	1.379E+00	1.396E+00	1.412E+00	1.428E+00	1.444E+00	1.461E+00	1.494E+00	1.494E+00
in114	1.022E-15	5.462E-11	7.270E-11	8.516E-11	9.404E-11	1.006E-10	1.058E-10	1.100E-10	1.136E-10	1.199E-10	4.347E-11
in114m	6.354E-11	1.625E-06	2.707E-06	3.440E-06	3.949E-06	4.316E-06	4.591E-06	4.809E-06	4.990E-06	5.292E-06	2.703E-06
sn114	3.589E-05	3.699E-05	3.868E-05	4.076E-05	4.312E-05	4.568E-05	4.839E-05	5.123E-05	5.416E-05	6.030E-05	6.277E-05
mo115	0.000E+00	4.984E-18	4.995E-18	5.004E-18	5.012E-18	5.021E-18	5.029E-18	5.038E-18	5.046E-18	5.060E-18	0.000E+00
tc115	0.000E+00	2.420E-14	2.426E-14	2.431E-14	2.436E-14	2.441E-14	2.446E-14	2.451E-14	2.456E-14	2.465E-14	0.000E+00
ru115	0.000E+00	5.773E-11	5.791E-11	5.806E-11	5.820E-11	5.835E-11	5.850E-11	5.865E-11	5.881E-11	5.907E-11	0.000E+00
rh115	0.000E+00	5.257E-09	5.273E-09	5.288E-09	5.302E-09	5.317E-09	5.332E-09	5.346E-09	5.361E-09	5.387E-09	0.000E+00
pd115	0.000E+00	8.440E-08	8.467E-08	8.489E-08	8.511E-08	8.533E-08	8.555E-08	8.577E-08	8.599E-08	8.637E-08	0.000E+00
ag115	0.000E+00	2.115E-06	2.121E-06	2.127E-06	2.132E-06	2.138E-06	2.144E-06	2.149E-06	2.155E-06	2.164E-06	0.000E+00
ag115m	0.000E+00	1.333E-08	1.337E-08	1.341E-08	1.344E-08	1.348E-08	1.351E-08	1.355E-08	1.358E-08	1.364E-08	0.000E+00
cd115	0.000E+00	4.775E-04	4.791E-04	4.806E-04	4.820E-04	4.834E-04	4.849E-04	4.863E-04	4.877E-04	4.901E-04	1.610E-10
cd115m	5.324E-09	1.727E-04	2.789E-04	3.443E-04	3.848E-04	4.101E-04	4.262E-04	4.366E-04	4.436E-04	4.520E-04	2.144E-04
in115	2.004E-01	2.007E-01	2.016E-01	2.024E-01	2.033E-01	2.042E-01	2.051E-01	2.060E-01	2.069E-01	2.086E-01	2.094E-01
in115m	2.465E-15	4.006E-05	4.020E-05	4.032E-05	4.044E-05	4.056E-05	4.068E-05	4.080E-05	4.092E-05	4.112E-05	1.140E-10
sn115	2.000E-02	2.019E-02	2.041E-02	2.063E-02	2.085E-02	2.106E-02	2.128E-02	2.150E-02	2.172E-02	2.217E-02	2.219E-02
tc116	0.000E+00	4.338E-15	4.348E-15	4.356E-15	4.363E-15	4.371E-15	4.379E-15	4.386E-15	4.394E-15	4.406E-15	0.000E+00
ru116	0.000E+00	3.610E-11	3.618E-11	3.623E-11	3.629E-11	3.635E-11	3.641E-11	3.647E-11	3.653E-11	3.662E-11	0.000E+00
rh116	0.000E+00	2.952E-10	2.958E-10	2.962E-10	2.966E-10	2.970E-10	2.975E-10	2.979E-10	2.983E-10	2.990E-10	0.000E+00
pd116	0.000E+00	3.094E-08	3.101E-08	3.105E-08	3.110E-08	3.114E-08	3.119E-08	3.124E-08	3.128E-08	3.135E-08	0.000E+00
ag116	0.000E+00	4.505E-07	4.514E-07	4.522E-07	4.529E-07	4.536E-07	4.543E-07	4.550E-07	4.557E-07	4.568E-07	0.000E+00

ag117m	0.000E+00	8.011E-09	8.034E-09	8.053E-09	8.073E-09	8.092E-09	8.110E-09	8.129E-09	8.148E-09	8.179E-09	0.000E+00
cd117	0.000E+00	2.356E-05	2.363E-05	2.369E-05	2.375E-05	2.380E-05	2.386E-05	2.391E-05	2.397E-05	2.406E-05	0.000E+00
cd117m	0.000E+00	7.300E-06	7.322E-06	7.341E-06	7.359E-06	7.377E-06	7.395E-06	7.413E-06	7.431E-06	7.461E-06	0.000E+00
in117	0.000E+00	5.158E-06	5.174E-06	5.187E-06	5.199E-06	5.212E-06	5.224E-06	5.236E-06	5.249E-06	5.269E-06	0.000E+00
in117m	0.000E+00	1.678E-05	1.683E-05	1.687E-05	1.692E-05	1.696E-05	1.700E-05	1.703E-05	1.707E-05	1.714E-05	0.000E+00
sn117	5.322E-01	5.382E-01	5.443E-01	5.504E-01	5.566E-01	5.627E-01	5.689E-01	5.751E-01	5.813E-01	5.937E-01	5.938E-01
sn117m	1.561E-22	2.022E-05	2.452E-05	2.562E-05	2.610E-05	2.644E-05	2.677E-05	2.709E-05	2.741E-05	2.806E-05	2.439E-06
tc118	0.000E+00	1.130E-18	1.133E-18	1.135E-18	1.136E-18	1.138E-18	1.140E-18	1.142E-18	1.144E-18	1.147E-18	0.000E+00
ru118	0.000E+00	3.632E-13	3.640E-13	3.647E-13	3.654E-13	3.661E-13	3.667E-13	3.674E-13	3.681E-13	3.692E-13	0.000E+00
rh118	0.000E+00	9.243E-12	9.268E-12	9.289E-12	9.310E-12	9.331E-12	9.352E-12	9.373E-12	9.395E-12	9.431E-12	0.000E+00
pd118	0.000E+00	2.470E-09	2.477E-09	2.482E-09	2.488E-09	2.493E-09	2.499E-09	2.505E-09	2.510E-09	2.519E-09	0.000E+00
ag118	0.000E+00	5.194E-09	5.206E-09	5.216E-09	5.226E-09	5.236E-09	5.246E-09	5.256E-09	5.265E-09	5.281E-09	0.000E+00
ag118m	0.000E+00	1.959E-09	1.964E-09	1.968E-09	1.972E-09	1.975E-09	1.979E-09	1.983E-09	1.986E-09	1.992E-09	0.000E+00

case 5 fission products page 95
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
cd118	0.000E+00	7.332E-06	7.351E-06	7.366E-06	7.380E-06	7.395E-06	7.409E-06	7.424E-06	7.438E-06	7.461E-06	0.000E+00
in118	0.000E+00	1.216E-08	1.219E-08	1.222E-08	1.224E-08	1.227E-08	1.229E-08	1.232E-08	1.234E-08	1.238E-08	0.000E+00
in118m	0.000E+00	8.702E-10	8.733E-10	8.759E-10	8.785E-10	8.810E-10	8.835E-10	8.860E-10	8.885E-10	8.926E-10	0.000E+00
sn118	4.291E-01	4.338E-01	4.385E-01	4.432E-01	4.479E-01	4.527E-01	4.574E-01	4.621E-01	4.669E-01	4.765E-01	4.765E-01
ru119	0.000E+00	1.374E-14	1.376E-14	1.378E-14	1.380E-14	1.382E-14	1.384E-14	1.386E-14	1.388E-14	1.391E-14	0.000E+00
rh119	0.000E+00	4.618E-12	4.624E-12	4.627E-12	4.630E-12	4.633E-12	4.637E-12	4.640E-12	4.643E-12	4.646E-12	0.000E+00
pd119	0.000E+00	6.938E-10	6.942E-10	6.942E-10	6.942E-10	6.942E-10	6.942E-10	6.942E-10	6.942E-10	6.936E-10	0.000E+00
ag119	0.000E+00	3.269E-09	3.273E-09	3.276E-09	3.279E-09	3.282E-09	3.285E-09	3.287E-09	3.290E-09	3.293E-09	0.000E+00
cd119	0.000E+00	2.747E-07	2.752E-07	2.757E-07	2.761E-07	2.765E-07	2.770E-07	2.774E-07	2.778E-07	2.784E-07	0.000E+00
cd119m	0.000E+00	1.096E-07	1.099E-07	1.101E-07	1.104E-07	1.106E-07	1.109E-07	1.111E-07	1.114E-07	1.118E-07	0.000E+00
in119	0.000E+00	1.556E-07	1.561E-07	1.564E-07	1.568E-07	1.571E-07	1.575E-07	1.579E-07	1.582E-07	1.588E-07	0.000E+00
in119m	0.000E+00	1.665E-06	1.668E-06	1.671E-06	1.674E-06	1.676E-06	1.679E-06	1.681E-06	1.684E-06	1.688E-06	0.000E+00
sn119	4.548E-01	4.597E-01	4.646E-01	4.695E-01	4.744E-01	4.793E-01	4.843E-01	4.892E-01	4.942E-01	5.042E-01	5.042E-01
sn119m	2.345E-04	2.715E-04	3.064E-04	3.393E-04	3.703E-04	3.995E-04	4.271E-04	4.532E-04	4.780E-04	5.237E-04	4.675E-04
ru120	0.000E+00	3.176E-15	3.183E-15	3.189E-15	3.194E-15	3.200E-15	3.205E-15	3.211E-15	3.216E-15	3.225E-15	0.000E+00
rh120	0.000E+00	4.042E-13	4.051E-13	4.059E-13	4.066E-13	4.073E-13	4.081E-13	4.088E-13	4.096E-13	4.108E-13	0.000E+00
pd120	0.000E+00	8.792E-10	8.810E-10	8.824E-10	8.837E-10	8.851E-10	8.865E-10	8.879E-10	8.893E-10	8.915E-10	0.000E+00
ag120	0.000E+00	1.241E-09	1.243E-09	1.246E-09	1.248E-09	1.250E-09	1.252E-09	1.254E-09	1.256E-09	1.259E-09	0.000E+00

cd120	0.000E+00	1.224E-07	1.226E-07	1.229E-07	1.231E-07	1.233E-07	1.235E-07	1.237E-07	1.240E-07	1.243E-07	0.000E+00
in120	0.000E+00	7.556E-09	7.574E-09	7.588E-09	7.602E-09	7.615E-09	7.629E-09	7.643E-09	7.656E-09	7.677E-09	0.000E+00
in120m	0.000E+00	2.061E-09	2.068E-09	2.074E-09	2.079E-09	2.085E-09	2.090E-09	2.095E-09	2.101E-09	2.109E-09	0.000E+00
sn120	4.441E-01	4.489E-01	4.537E-01	4.585E-01	4.633E-01	4.681E-01	4.729E-01	4.777E-01	4.825E-01	4.922E-01	4.922E-01
rh121	0.000E+00	1.619E-13	1.622E-13	1.625E-13	1.628E-13	1.631E-13	1.634E-13	1.636E-13	1.639E-13	1.644E-13	0.000E+00
pd121	0.000E+00	6.072E-11	6.085E-11	6.094E-11	6.104E-11	6.114E-11	6.123E-11	6.133E-11	6.143E-11	6.158E-11	0.000E+00
ag121	0.000E+00	6.065E-10	6.077E-10	6.086E-10	6.095E-10	6.104E-10	6.114E-10	6.123E-10	6.132E-10	6.146E-10	0.000E+00
cd121	0.000E+00	3.264E-08	3.271E-08	3.277E-08	3.282E-08	3.287E-08	3.293E-08	3.298E-08	3.304E-08	3.312E-08	0.000E+00
in121	0.000E+00	5.532E-09	5.548E-09	5.561E-09	5.574E-09	5.587E-09	5.600E-09	5.613E-09	5.625E-09	5.646E-09	0.000E+00
in121m	0.000E+00	5.743E-07	5.756E-07	5.765E-07	5.775E-07	5.785E-07	5.794E-07	5.804E-07	5.813E-07	5.828E-07	0.000E+00
sn121	2.067E-07	2.588E-04	2.593E-04	2.598E-04	2.603E-04	2.607E-04	2.612E-04	2.616E-04	2.620E-04	2.627E-04	2.300E-07
sn121m	4.746E-03	4.800E-03	4.854E-03	4.909E-03	4.963E-03	5.017E-03	5.071E-03	5.126E-03	5.180E-03	5.290E-03	5.281E-03
sb121	4.538E-01	4.581E-01	4.627E-01	4.674E-01	4.720E-01	4.766E-01	4.812E-01	4.859E-01	4.905E-01	4.998E-01	5.000E-01
rh122	0.000E+00	7.725E-15	7.742E-15	7.755E-15	7.769E-15	7.782E-15	7.795E-15	7.809E-15	7.822E-15	7.843E-15	0.000E+00
pd122	0.000E+00	4.400E-11	4.409E-11	4.416E-11	4.423E-11	4.429E-11	4.436E-11	4.443E-11	4.450E-11	4.460E-11	0.000E+00
ag122	0.000E+00	1.888E-10	1.892E-10	1.894E-10	1.897E-10	1.900E-10	1.902E-10	1.905E-10	1.908E-10	1.912E-10	0.000E+00
cd122	0.000E+00	1.370E-08	1.372E-08	1.375E-08	1.377E-08	1.379E-08	1.381E-08	1.383E-08	1.385E-08	1.388E-08	0.000E+00
in122	0.000E+00	4.387E-09	4.396E-09	4.404E-09	4.411E-09	4.418E-09	4.425E-09	4.432E-09	4.439E-09	4.450E-09	0.000E+00
in122m	0.000E+00	3.199E-09	3.209E-09	3.216E-09	3.224E-09	3.232E-09	3.239E-09	3.247E-09	3.254E-09	3.266E-09	0.000E+00
sn122	5.775E-01	5.837E-01	5.900E-01	5.962E-01	6.025E-01	6.087E-01	6.150E-01	6.213E-01	6.276E-01	6.402E-01	6.402E-01
sb122	0.000E+00	5.533E-05	5.603E-05	5.669E-05	5.736E-05	5.802E-05	5.869E-05	5.936E-05	6.003E-05	6.132E-05	2.732E-10
sb122m	0.000E+00	5.996E-09	6.070E-09	6.142E-09	6.213E-09	6.285E-09	6.358E-09	6.430E-09	6.503E-09	6.644E-09	0.000E+00
te122	2.108E-02	2.146E-02	2.189E-02	2.233E-02	2.277E-02	2.322E-02	2.367E-02	2.413E-02	2.460E-02	2.554E-02	2.560E-02
rh123	0.000E+00	8.284E-16	8.302E-16	8.317E-16	8.331E-16	8.345E-16	8.360E-16	8.374E-16	8.389E-16	8.412E-16	0.000E+00
pd123	0.000E+00	1.650E-12	1.654E-12	1.657E-12	1.660E-12	1.662E-12	1.665E-12	1.668E-12	1.671E-12	1.676E-12	0.000E+00
ag123	0.000E+00	6.135E-11	6.148E-11	6.159E-11	6.170E-11	6.180E-11	6.191E-11	6.202E-11	6.213E-11	6.230E-11	0.000E+00
cd123	0.000E+00	1.504E-08	1.507E-08	1.510E-08	1.512E-08	1.515E-08	1.517E-08	1.520E-08	1.523E-08	1.527E-08	0.000E+00
in123	0.000E+00	1.309E-08	1.312E-08	1.315E-08	1.317E-08	1.320E-08	1.323E-08	1.325E-08	1.328E-08	1.332E-08	0.000E+00
in123m	0.000E+00	2.850E-08	2.857E-08	2.863E-08	2.868E-08	2.874E-08	2.879E-08	2.885E-08	2.890E-08	2.899E-08	0.000E+00
sn123	1.034E-04	4.746E-04	7.879E-04	1.052E-03	1.275E-03	1.464E-03	1.623E-03	1.757E-03	1.870E-03	2.046E-03	1.581E-03
sn123m	0.000E+00	6.851E-06	6.866E-06	6.878E-06	6.889E-06	6.901E-06	6.912E-06	6.923E-06	6.935E-06	6.952E-06	0.000E+00
sb123	5.375E-01	5.426E-01	5.478E-01	5.530E-01	5.583E-01	5.636E-01	5.689E-01	5.743E-01	5.797E-01	5.906E-01	5.911E-01

case 5 fission products page 96
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
te123	1.680E-04	1.687E-04	1.698E-04	1.715E-04	1.735E-04	1.759E-04	1.785E-04	1.814E-04	1.846E-04	1.915E-04	1.952E-04
te123m	3.355E-07	2.981E-06	5.242E-06	7.185E-06	8.864E-06	1.032E-05	1.160E-05	1.273E-05	1.373E-05	1.545E-05	1.170E-05
pd124	0.000E+00	1.531E-12	1.534E-12	1.536E-12	1.538E-12	1.540E-12	1.542E-12	1.545E-12	1.547E-12	1.550E-12	0.000E+00
ag124	0.000E+00	3.014E-11	3.018E-11	3.021E-11	3.024E-11	3.027E-11	3.030E-11	3.032E-11	3.035E-11	3.039E-11	0.000E+00
cd124	0.000E+00	2.338E-09	2.341E-09	2.344E-09	2.346E-09	2.349E-09	2.351E-09	2.353E-09	2.356E-09	2.359E-09	0.000E+00
in124	0.000E+00	1.570E-08	1.573E-08	1.575E-08	1.578E-08	1.580E-08	1.582E-08	1.585E-08	1.587E-08	1.590E-08	0.000E+00
sn124	9.681E-01	9.785E-01	9.890E-01	9.994E-01	1.010E+00	1.020E+00	1.031E+00	1.041E+00	1.052E+00	1.073E+00	1.073E+00
sb124	2.711E-07	3.060E-04	5.217E-04	6.748E-04	7.846E-04	8.644E-04	9.233E-04	9.677E-04	1.002E-03	1.053E-03	6.056E-04
sb124m	0.000E+00	4.101E-10	4.134E-10	4.165E-10	4.197E-10	4.229E-10	4.261E-10	4.293E-10	4.325E-10	4.387E-10	0.000E+00
te124	1.785E-02	1.792E-02	1.808E-02	1.830E-02	1.858E-02	1.888E-02	1.922E-02	1.957E-02	1.993E-02	2.070E-02	2.114E-02
pd125	0.000E+00	1.188E-13	1.190E-13	1.192E-13	1.193E-13	1.195E-13	1.196E-13	1.198E-13	1.199E-13	1.201E-13	0.000E+00
ag125	0.000E+00	1.805E-11	1.806E-11	1.807E-11	1.808E-11	1.808E-11	1.809E-11	1.810E-11	1.810E-11	1.810E-11	0.000E+00
cd125	0.000E+00	2.496E-09	2.498E-09	2.500E-09	2.501E-09	2.503E-09	2.504E-09	2.506E-09	2.507E-09	2.508E-09	0.000E+00
in125	0.000E+00	6.615E-09	6.629E-09	6.639E-09	6.649E-09	6.659E-09	6.669E-09	6.679E-09	6.689E-09	6.703E-09	0.000E+00
in125m	0.000E+00	2.677E-08	2.683E-08	2.688E-08	2.693E-08	2.698E-08	2.703E-08	2.707E-08	2.712E-08	2.719E-08	0.000E+00
sn125	4.841E-28	1.256E-03	1.387E-03	1.403E-03	1.407E-03	1.410E-03	1.412E-03	1.415E-03	1.417E-03	1.421E-03	4.505E-05
sn125m	0.000E+00	2.967E-06	2.974E-06	2.980E-06	2.986E-06	2.991E-06	2.997E-06	3.002E-06	3.008E-06	3.016E-06	0.000E+00
sb125	4.820E-01	4.832E-01	4.855E-01	4.879E-01	4.903E-01	4.926E-01	4.949E-01	4.972E-01	4.995E-01	5.040E-01	4.888E-01
te125	6.987E-01	7.093E-01	7.200E-01	7.306E-01	7.413E-01	7.520E-01	7.628E-01	7.736E-01	7.844E-01	8.063E-01	8.229E-01
te125m	6.846E-03	6.724E-03	6.649E-03	6.608E-03	6.589E-03	6.587E-03	6.595E-03	6.610E-03	6.631E-03	6.680E-03	6.660E-03
pd126	0.000E+00	4.161E-14	4.170E-14	4.177E-14	4.184E-14	4.191E-14	4.198E-14	4.205E-14	4.213E-14	4.224E-14	0.000E+00
ag126	0.000E+00	3.390E-12	3.397E-12	3.402E-12	3.407E-12	3.412E-12	3.418E-12	3.423E-12	3.428E-12	3.436E-12	0.000E+00
cd126	0.000E+00	9.648E-10	9.665E-10	9.677E-10	9.689E-10	9.701E-10	9.713E-10	9.725E-10	9.738E-10	9.755E-10	0.000E+00
in126	0.000E+00	9.859E-09	9.884E-09	9.904E-09	9.924E-09	9.944E-09	9.963E-09	9.983E-09	1.000E-08	1.003E-08	0.000E+00
sn126	2.196E+00	2.222E+00	2.247E+00	2.273E+00	2.299E+00	2.325E+00	2.350E+00	2.376E+00	2.402E+00	2.454E+00	2.454E+00
sb126	1.044E-07	9.452E-05	1.109E-04	1.140E-04	1.149E-04	1.154E-04	1.158E-04	1.162E-04	1.166E-04	1.173E-04	8.117E-06
sb126m	7.934E-10	1.572E-07	1.578E-07	1.584E-07	1.589E-07	1.594E-07	1.599E-07	1.604E-07	1.609E-07	1.618E-07	8.865E-10
te126	3.621E-02	3.665E-02	3.717E-02	3.771E-02	3.826E-02	3.880E-02	3.935E-02	3.991E-02	4.047E-02	4.159E-02	4.170E-02
xe126	5.459E-10	5.612E-10	5.768E-10	5.928E-10	6.091E-10	6.258E-10	6.429E-10	6.603E-10	6.782E-10	7.150E-10	7.150E-10
ag127	0.000E+00	2.378E-12	2.384E-12	2.389E-12	2.394E-12	2.399E-12	2.403E-12	2.408E-12	2.413E-12	2.422E-12	0.000E+00
cd127	0.000E+00	8.344E-10	8.362E-10	8.376E-10	8.390E-10	8.404E-10	8.419E-10	8.433E-10	8.448E-10	8.471E-10	0.000E+00

in127 0.000E+00 6.960E-09 6.976E-09 6.990E-09 7.003E-09 7.016E-09 7.029E-09 7.042E-09 7.055E-09 7.076E-09 0.000E+00
in127m 0.000E+00 2.275E-08 2.280E-08 2.285E-08 2.289E-08 2.293E-08 2.298E-08 2.302E-08 2.306E-08 2.313E-08 0.000E+00
sn127 0.000E+00 9.226E-05 9.250E-05 9.271E-05 9.290E-05 9.310E-05 9.330E-05 9.349E-05 9.368E-05 9.399E-05 0.000E+00
sn127m 0.000E+00 4.014E-06 4.024E-06 4.033E-06 4.041E-06 4.049E-06 4.057E-06 4.065E-06 4.073E-06 4.085E-06 0.000E+00
sb127 0.000E+00 9.951E-03 1.001E-02 1.003E-02 1.005E-02 1.007E-02 1.009E-02 1.011E-02 1.013E-02 1.018E-02 1.813E-06
te127 3.296E-06 8.602E-04 8.917E-04 9.151E-04 9.347E-04 9.510E-04 9.647E-04 9.763E-04 9.861E-04 1.001E-03 1.165E-04
te127m 9.416E-04 8.352E-03 1.591E-02 2.211E-02 2.719E-02 3.137E-02 3.480E-02 3.762E-02 3.994E-02 4.324E-02 3.324E-02
i127 4.984E+00 5.019E+00 5.066E+00 5.113E+00 5.162E+00 5.212E+00 5.262E+00 5.314E+00 5.365E+00 5.469E+00 5.490E+00
xe127 1.801E-14 1.233E-08 1.937E-08 2.353E-08 2.610E-08 2.781E-08 2.906E-08 3.006E-08 3.093E-08 3.250E-08 1.303E-08
ag128 0.000E+00 6.119E-13 6.131E-13 6.141E-13 6.150E-13 6.160E-13 6.170E-13 6.179E-13 6.189E-13 6.204E-13 0.000E+00
cd128 0.000E+00 1.402E-09 1.404E-09 1.405E-09 1.407E-09 1.408E-09 1.409E-09 1.410E-09 1.412E-09 1.413E-09 0.000E+00
in128 0.000E+00 9.431E-09 9.437E-09 9.438E-09 9.439E-09 9.440E-09 9.441E-09 9.442E-09 9.444E-09 9.440E-09 0.000E+00
sn128 0.000E+00 1.729E-04 1.731E-04 1.732E-04 1.733E-04 1.734E-04 1.736E-04 1.737E-04 1.738E-04 1.739E-04 0.000E+00
sb128 0.000E+00 1.712E-04 1.715E-04 1.718E-04 1.721E-04 1.724E-04 1.726E-04 1.729E-04 1.732E-04 1.735E-04 0.000E+00
sb128m 0.000E+00 3.232E-05 3.236E-05 3.239E-05 3.241E-05 3.244E-05 3.247E-05 3.249E-05 3.252E-05 3.254E-05 0.000E+00
te128 1.051E+01 1.062E+01 1.072E+01 1.083E+01 1.094E+01 1.104E+01 1.115E+01 1.125E+01 1.136E+01 1.157E+01 1.157E+01
i128 0.000E+00 3.448E-06 3.487E-06 3.526E-06 3.566E-06 3.607E-06 3.648E-06 3.690E-06 3.733E-06 3.816E-06 0.000E+00
xe128 1.810E-01 1.851E-01 1.891E-01 1.932E-01 1.974E-01 2.016E-01 2.059E-01 2.102E-01 2.145E-01 2.234E-01 2.234E-01
cd129 0.000E+00 2.000E-10 2.004E-10 2.006E-10 2.009E-10 2.011E-10 2.013E-10 2.016E-10 2.018E-10 2.022E-10 0.000E+00

case 5 fission products page 97
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
in129	0.000E+00	7.177E-09	7.182E-09	7.184E-09	7.186E-09	7.188E-09	7.191E-09	7.193E-09	7.195E-09	7.195E-09	0.000E+00
sn129	0.000E+00	5.641E-06	5.650E-06	5.656E-06	5.662E-06	5.668E-06	5.674E-06	5.680E-06	5.686E-06	5.693E-06	0.000E+00
sn129m	0.000E+00	1.671E-05	1.671E-05	1.670E-05	1.670E-05	1.669E-05	1.668E-05	1.668E-05	1.667E-05	1.664E-05	0.000E+00
sb129	0.000E+00	1.783E-03	1.785E-03	1.786E-03	1.788E-03	1.789E-03	1.790E-03	1.792E-03	1.793E-03	1.794E-03	0.000E+00
te129	1.227E-11	4.157E-04	4.308E-04	4.387E-04	4.430E-04	4.454E-04	4.468E-04	4.477E-04	4.483E-04	4.489E-04	2.174E-05
te129m	1.331E-08	2.997E-02	4.576E-02	5.400E-02	5.831E-02	6.058E-02	6.178E-02	6.244E-02	6.280E-02	6.316E-02	2.358E-02
i129	2.142E+01	2.160E+01	2.179E+01	2.199E+01	2.219E+01	2.239E+01	2.260E+01	2.281E+01	2.301E+01	2.343E+01	2.347E+01
xe129	6.196E-04	6.353E-04	6.547E-04	6.749E-04	6.955E-04	7.167E-04	7.383E-04	7.604E-04	7.830E-04	8.297E-04	8.347E-04
xe129m	1.057E-32	3.736E-06	4.142E-06	4.267E-06	4.369E-06	4.471E-06	4.574E-06	4.678E-06	4.784E-06	4.997E-06	1.184E-07
cd130	0.000E+00	1.182E-10	1.184E-10	1.185E-10	1.186E-10	1.187E-10	1.188E-10	1.189E-10	1.190E-10	1.191E-10	0.000E+00
in130	0.000E+00	2.766E-09	2.764E-09	2.760E-09	2.757E-09	2.753E-09	2.750E-09	2.747E-09	2.744E-09	2.735E-09	0.000E+00
sn130	0.000E+00	2.567E-05	2.567E-05	2.566E-05	2.565E-05	2.564E-05	2.563E-05	2.562E-05	2.561E-05	2.557E-05	0.000E+00

sb130	0.000E+00	9.043E-05	9.054E-05	9.062E-05	9.069E-05	9.076E-05	9.083E-05	9.089E-05	9.096E-05	9.102E-05	0.000E+00
sb130m	0.000E+00	5.846E-05	5.847E-05	5.845E-05	5.843E-05	5.841E-05	5.838E-05	5.836E-05	5.834E-05	5.826E-05	0.000E+00
te130	4.295E+01	4.334E+01	4.374E+01	4.414E+01	4.454E+01	4.493E+01	4.533E+01	4.573E+01	4.612E+01	4.692E+01	4.692E+01
i130	0.000E+00	2.547E-04	2.575E-04	2.602E-04	2.630E-04	2.658E-04	2.686E-04	2.714E-04	2.743E-04	2.798E-04	0.000E+00
i130m	0.000E+00	1.629E-06	1.647E-06	1.665E-06	1.683E-06	1.701E-06	1.720E-06	1.738E-06	1.757E-06	1.793E-06	0.000E+00
xe130	5.896E-01	6.010E-01	6.129E-01	6.248E-01	6.369E-01	6.492E-01	6.615E-01	6.740E-01	6.866E-01	7.123E-01	7.125E-01
cd131	0.000E+00	4.143E-12	4.151E-12	4.157E-12	4.163E-12	4.169E-12	4.175E-12	4.181E-12	4.187E-12	4.196E-12	0.000E+00
in131	0.000E+00	1.026E-09	1.027E-09	1.027E-09	1.027E-09	1.027E-09	1.027E-09	1.027E-09	1.027E-09	1.026E-09	0.000E+00
sn131	0.000E+00	3.837E-06	3.839E-06	3.838E-06	3.838E-06	3.838E-06	3.838E-06	3.838E-06	3.838E-06	3.835E-06	0.000E+00
sb131	0.000E+00	3.760E-04	3.760E-04	3.759E-04	3.757E-04	3.756E-04	3.754E-04	3.753E-04	3.752E-04	3.746E-04	0.000E+00
te131	0.000E+00	4.421E-04	4.423E-04	4.422E-04	4.422E-04	4.421E-04	4.421E-04	4.420E-04	4.420E-04	4.416E-04	6.721E-17
te131m	0.000E+00	7.688E-03	7.701E-03	7.711E-03	7.721E-03	7.731E-03	7.740E-03	7.749E-03	7.758E-03	7.771E-03	2.149E-14
i131	9.486E-31	2.257E-01	2.411E-01	2.422E-01	2.422E-01	2.423E-01	2.423E-01	2.423E-01	2.423E-01	2.431E-01	4.039E-03
xe131	5.621E+01	5.636E+01	5.672E+01	5.711E+01	5.749E+01	5.786E+01	5.824E+01	5.861E+01	5.898E+01	5.971E+01	5.997E+01
xe131m	2.438E-22	3.053E-03	4.267E-03	4.511E-03	4.558E-03	4.571E-03	4.579E-03	4.585E-03	4.592E-03	4.600E-03	6.608E-04
cd132	0.000E+00	6.488E-13	6.500E-13	6.509E-13	6.518E-13	6.528E-13	6.537E-13	6.546E-13	6.555E-13	6.569E-13	0.000E+00
in132	0.000E+00	1.904E-10	1.905E-10	1.905E-10	1.904E-10	1.904E-10	1.904E-10	1.904E-10	1.904E-10	1.903E-10	0.000E+00
sn132	0.000E+00	3.218E-06	3.221E-06	3.222E-06	3.223E-06	3.224E-06	3.226E-06	3.227E-06	3.228E-06	3.228E-06	0.000E+00
sb132	0.000E+00	4.192E-05	4.195E-05	4.196E-05	4.198E-05	4.199E-05	4.200E-05	4.201E-05	4.203E-05	4.202E-05	0.000E+00
sb132m	0.000E+00	2.634E-05	2.634E-05	2.633E-05	2.631E-05	2.630E-05	2.628E-05	2.627E-05	2.626E-05	2.621E-05	0.000E+00
te132	0.000E+00	1.420E-01	1.422E-01	1.422E-01	1.422E-01	1.422E-01	1.422E-01	1.422E-01	1.422E-01	1.422E-01	5.227E-06
i132	0.000E+00	4.229E-03	4.235E-03	4.235E-03	4.235E-03	4.235E-03	4.235E-03	4.235E-03	4.236E-03	4.236E-03	1.573E-07
xe132	1.229E+02	1.240E+02	1.253E+02	1.266E+02	1.278E+02	1.291E+02	1.304E+02	1.317E+02	1.330E+02	1.355E+02	1.357E+02
cs132	0.000E+00	4.387E-06	4.579E-06	4.628E-06	4.673E-06	4.717E-06	4.762E-06	4.807E-06	4.851E-06	4.937E-06	2.906E-08
ba132	1.480E-05	1.500E-05	1.529E-05	1.558E-05	1.588E-05	1.617E-05	1.648E-05	1.678E-05	1.709E-05	1.771E-05	1.780E-05
in133	0.000E+00	3.735E-12	3.743E-12	3.750E-12	3.756E-12	3.762E-12	3.768E-12	3.775E-12	3.781E-12	3.791E-12	0.000E+00
sn133	0.000E+00	3.143E-08	3.145E-08	3.146E-08	3.147E-08	3.148E-08	3.150E-08	3.151E-08	3.152E-08	3.152E-08	0.000E+00
sb133	0.000E+00	3.364E-05	3.362E-05	3.359E-05	3.357E-05	3.354E-05	3.351E-05	3.348E-05	3.346E-05	3.338E-05	0.000E+00
te133	0.000E+00	2.929E-04	2.929E-04	2.927E-04	2.925E-04	2.924E-04	2.922E-04	2.921E-04	2.919E-04	2.914E-04	0.000E+00
te133m	0.000E+00	1.070E-03	1.070E-03	1.069E-03	1.069E-03	1.068E-03	1.067E-03	1.066E-03	1.066E-03	1.064E-03	0.000E+00
i133	0.000E+00	5.445E-02	5.446E-02	5.444E-02	5.443E-02	5.441E-02	5.439E-02	5.438E-02	5.436E-02	5.429E-02	1.185E-18
i133m	0.000E+00	5.083E-07	5.089E-07	5.092E-07	5.095E-07	5.097E-07	5.100E-07	5.103E-07	5.106E-07	5.108E-07	0.000E+00
xe133	0.000E+00	3.120E-01	3.178E-01	3.178E-01	3.177E-01	3.177E-01	3.176E-01	3.175E-01	3.174E-01	3.300E-01	7.113E-04
xe133m	0.000E+00	4.350E-03	4.352E-03	4.352E-03	4.352E-03	4.352E-03	4.353E-03	4.353E-03	4.353E-03	4.349E-03	1.765E-09
cs133	1.420E+02	1.428E+02	1.439E+02	1.450E+02	1.462E+02	1.473E+02	1.484E+02	1.496E+02	1.507E+02	1.529E+02	1.533E+02
ba133	1.025E-08	1.036E-08	1.047E-08	1.058E-08	1.069E-08	1.080E-08	1.091E-08	1.102E-08	1.113E-08	1.135E-08	1.125E-08
in134	0.000E+00	4.539E-13	4.550E-13	4.558E-13	4.566E-13	4.574E-13	4.582E-13	4.590E-13	4.598E-13	4.611E-13	0.000E+00
sn134	0.000E+00	3.914E-09	3.921E-09	3.927E-09	3.932E-09	3.938E-09	3.943E-09	3.949E-09	3.954E-09	3.963E-09	0.000E+00

case 5 fission products page 98
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
sb134	0.000E+00	3.464E-08	3.461E-08	3.457E-08	3.453E-08	3.449E-08	3.445E-08	3.441E-08	3.437E-08	3.427E-08	0.000E+00
sb134m	0.000E+00	3.160E-07	3.162E-07	3.162E-07	3.162E-07	3.163E-07	3.163E-07	3.164E-07	3.165E-07	3.164E-07	0.000E+00
te134	0.000E+00	1.594E-03	1.593E-03	1.591E-03	1.590E-03	1.588E-03	1.586E-03	1.584E-03	1.583E-03	1.578E-03	0.000E+00
i134	0.000E+00	2.553E-03	2.553E-03	2.552E-03	2.550E-03	2.549E-03	2.548E-03	2.547E-03	2.545E-03	2.541E-03	0.000E+00
i134m	0.000E+00	1.631E-05	1.634E-05	1.637E-05	1.639E-05	1.642E-05	1.644E-05	1.647E-05	1.649E-05	1.653E-05	0.000E+00
xe134	1.793E+02	1.809E+02	1.825E+02	1.841E+02	1.857E+02	1.872E+02	1.888E+02	1.904E+02	1.920E+02	1.951E+02	1.951E+02
xe134m	0.000E+00	4.467E-09	4.476E-09	4.483E-09	4.490E-09	4.497E-09	4.503E-09	4.510E-09	4.516E-09	4.526E-09	0.000E+00
cs134	4.352E+00	4.461E+00	4.569E+00	4.675E+00	4.781E+00	4.886E+00	4.990E+00	5.093E+00	5.195E+00	5.397E+00	5.164E+00
cs134m	0.000E+00	1.054E-04	1.065E-04	1.076E-04	1.086E-04	1.096E-04	1.107E-04	1.117E-04	1.128E-04	1.148E-04	0.000E+00
ba134	8.267E+00	8.395E+00	8.525E+00	8.658E+00	8.795E+00	8.935E+00	9.077E+00	9.223E+00	9.371E+00	9.677E+00	9.911E+00
sn135	0.000E+00	1.364E-10	1.366E-10	1.369E-10	1.371E-10	1.373E-10	1.375E-10	1.377E-10	1.380E-10	1.383E-10	0.000E+00
sb135	0.000E+00	3.290E-08	3.293E-08	3.294E-08	3.294E-08	3.296E-08	3.297E-08	3.298E-08	3.299E-08	3.299E-08	0.000E+00
te135	0.000E+00	6.611E-06	6.612E-06	6.611E-06	6.609E-06	6.607E-06	6.606E-06	6.605E-06	6.603E-06	6.596E-06	0.000E+00
i135	0.000E+00	1.659E-02	1.660E-02	1.659E-02	1.659E-02	1.659E-02	1.658E-02	1.658E-02	1.658E-02	1.656E-02	0.000E+00
xe135	0.000E+00	1.532E-02	1.532E-02	1.531E-02	1.530E-02	1.528E-02	1.527E-02	1.526E-02	1.525E-02	1.523E-02	0.000E+00
xe135m	0.000E+00	1.422E-04	1.423E-04	1.424E-04	1.424E-04	1.425E-04	1.425E-04	1.426E-04	1.427E-04	1.427E-04	0.000E+00
cs135	6.030E+01	6.115E+01	6.203E+01	6.290E+01	6.377E+01	6.465E+01	6.552E+01	6.639E+01	6.726E+01	6.900E+01	6.903E+01
cs135m	0.000E+00	1.021E-05	1.048E-05	1.075E-05	1.101E-05	1.127E-05	1.153E-05	1.179E-05	1.205E-05	1.255E-05	0.000E+00
ba135	1.695E-02	1.827E-02	1.963E-02	2.101E-02	2.241E-02	2.383E-02	2.528E-02	2.675E-02	2.825E-02	3.133E-02	3.135E-02
ba135m	0.000E+00	1.174E-05	1.195E-05	1.216E-05	1.237E-05	1.259E-05	1.281E-05	1.304E-05	1.327E-05	1.375E-05	1.129E-17
sn136	0.000E+00	2.070E-11	2.074E-11	2.078E-11	2.081E-11	2.085E-11	2.088E-11	2.092E-11	2.095E-11	2.100E-11	0.000E+00
sb136	0.000E+00	2.499E-09	2.502E-09	2.504E-09	2.507E-09	2.509E-09	2.511E-09	2.514E-09	2.516E-09	2.520E-09	0.000E+00
te136	0.000E+00	2.697E-06	2.697E-06	2.695E-06	2.693E-06	2.691E-06	2.689E-06	2.688E-06	2.686E-06	2.681E-06	0.000E+00
i136	0.000E+00	2.650E-05	2.649E-05	2.647E-05	2.645E-05	2.644E-05	2.642E-05	2.640E-05	2.638E-05	2.633E-05	0.000E+00
i136m	0.000E+00	7.368E-06	7.368E-06	7.364E-06	7.361E-06	7.357E-06	7.353E-06	7.350E-06	7.346E-06	7.334E-06	0.000E+00
xe136	2.516E+02	2.535E+02	2.555E+02	2.574E+02	2.593E+02	2.613E+02	2.632E+02	2.652E+02	2.671E+02	2.710E+02	2.710E+02
cs136	3.120E-20	1.596E-02	1.918E-02	2.000E-02	2.036E-02	2.063E-02	2.089E-02	2.115E-02	2.141E-02	2.191E-02	1.748E-03
ba136	2.020E+00	2.037E+00	2.067E+00	2.100E+00	2.134E+00	2.168E+00	2.203E+00	2.238E+00	2.273E+00	2.346E+00	2.366E+00
ba136m	9.477E-28	4.850E-10	5.827E-10	6.074E-10	6.184E-10	6.268E-10	6.346E-10	6.425E-10	6.503E-10	6.656E-10	5.311E-11
sb137	0.000E+00	1.306E-09	1.299E-09	1.291E-09	1.283E-09	1.275E-09	1.268E-09	1.260E-09	1.252E-09	1.236E-09	0.000E+00
te137	0.000E+00	1.846E-07	1.846E-07	1.846E-07	1.846E-07	1.845E-07	1.845E-07	1.845E-07	1.845E-07	1.844E-07	0.000E+00

i137	0.000E+00	8.433E-06	8.434E-06	8.431E-06	8.427E-06	8.424E-06	8.421E-06	8.419E-06	8.416E-06	8.405E-06	0.000E+00
xe137	0.000E+00	1.557E-04	1.557E-04	1.557E-04	1.556E-04	1.556E-04	1.555E-04	1.555E-04	1.555E-04	1.553E-04	0.000E+00
cs137	1.388E+02	1.399E+02	1.410E+02	1.420E+02	1.431E+02	1.442E+02	1.453E+02	1.463E+02	1.474E+02	1.496E+02	1.491E+02
ba137	1.297E+01	1.325E+01	1.353E+01	1.381E+01	1.410E+01	1.439E+01	1.467E+01	1.497E+01	1.526E+01	1.586E+01	1.631E+01
ba137m	2.119E-05	2.140E-05	2.157E-05	2.173E-05	2.190E-05	2.206E-05	2.223E-05	2.239E-05	2.256E-05	2.288E-05	2.277E-05
sb138	0.000E+00	7.509E-12	7.526E-12	7.539E-12	7.553E-12	7.566E-12	7.579E-12	7.593E-12	7.606E-12	7.628E-12	0.000E+00
te138	0.000E+00	1.823E-08	1.826E-08	1.828E-08	1.830E-08	1.831E-08	1.833E-08	1.835E-08	1.837E-08	1.840E-08	0.000E+00
i138	0.000E+00	1.140E-06	1.140E-06	1.140E-06	1.140E-06	1.140E-06	1.139E-06	1.139E-06	1.139E-06	1.138E-06	0.000E+00
xe138	0.000E+00	5.367E-04	5.365E-04	5.361E-04	5.357E-04	5.353E-04	5.348E-04	5.344E-04	5.340E-04	5.328E-04	0.000E+00
cs138	0.000E+00	1.335E-03	1.335E-03	1.334E-03	1.334E-03	1.333E-03	1.332E-03	1.331E-03	1.330E-03	1.328E-03	0.000E+00
cs138m	0.000E+00	5.331E-06	5.341E-06	5.348E-06	5.355E-06	5.362E-06	5.369E-06	5.375E-06	5.382E-06	5.391E-06	0.000E+00
ba138	1.527E+02	1.540E+02	1.554E+02	1.567E+02	1.580E+02	1.594E+02	1.607E+02	1.620E+02	1.633E+02	1.660E+02	1.660E+02
la138	9.304E-04	9.393E-04	9.481E-04	9.569E-04	9.658E-04	9.746E-04	9.834E-04	9.923E-04	1.001E-03	1.019E-03	1.019E-03
sb139	0.000E+00	7.188E-13	7.204E-13	7.216E-13	7.228E-13	7.240E-13	7.252E-13	7.264E-13	7.276E-13	7.296E-13	0.000E+00
te139	0.000E+00	1.205E-09	1.207E-09	1.208E-09	1.209E-09	1.211E-09	1.212E-09	1.214E-09	1.215E-09	1.217E-09	0.000E+00
i139	0.000E+00	1.921E-07	1.918E-07	1.914E-07	1.911E-07	1.907E-07	1.904E-07	1.900E-07	1.897E-07	1.889E-07	0.000E+00
xe139	0.000E+00	1.865E-05	1.863E-05	1.861E-05	1.858E-05	1.856E-05	1.854E-05	1.851E-05	1.849E-05	1.843E-05	0.000E+00
cs139	0.000E+00	3.607E-04	3.606E-04	3.604E-04	3.601E-04	3.598E-04	3.596E-04	3.593E-04	3.591E-04	3.583E-04	0.000E+00
ba139	0.000E+00	3.384E-03	3.383E-03	3.381E-03	3.379E-03	3.376E-03	3.374E-03	3.372E-03	3.370E-03	3.363E-03	0.000E+00

case 5 fission products page 99
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
la139	1.448E+02	1.460E+02	1.473E+02	1.485E+02	1.497E+02	1.510E+02	1.522E+02	1.534E+02	1.547E+02	1.572E+02	1.572E+02
ce139	3.818E-08	1.535E-07	2.523E-07	3.373E-07	4.105E-07	4.737E-07	5.283E-07	5.756E-07	6.166E-07	6.836E-07	5.368E-07
pr139	0.000E+00	3.452E-11	3.478E-11	3.508E-11	3.541E-11	3.575E-11	3.610E-11	3.646E-11	3.682E-11	3.752E-11	0.000E+00
te140	0.000E+00	2.714E-10	2.716E-10	2.718E-10	2.720E-10	2.721E-10	2.723E-10	2.725E-10	2.726E-10	2.728E-10	0.000E+00
i140	0.000E+00	1.875E-08	1.876E-08	1.875E-08	1.874E-08	1.874E-08	1.873E-08	1.873E-08	1.872E-08	1.870E-08	0.000E+00
xe140	0.000E+00	4.431E-06	4.426E-06	4.419E-06	4.411E-06	4.404E-06	4.397E-06	4.390E-06	4.383E-06	4.366E-06	0.000E+00
cs140	0.000E+00	3.718E-05	3.717E-05	3.714E-05	3.711E-05	3.708E-05	3.705E-05	3.702E-05	3.699E-05	3.691E-05	0.000E+00
ba140	3.175E-19	6.057E-01	7.137E-01	7.326E-01	7.356E-01	7.358E-01	7.355E-01	7.350E-01	7.346E-01	7.334E-01	5.401E-02
la140	4.810E-20	8.170E-02	9.808E-02	1.010E-01	1.015E-01	1.015E-01	1.015E-01	1.014E-01	1.014E-01	9.914E-02	8.183E-03
ce140	1.516E+02	1.523E+02	1.535E+02	1.548E+02	1.562E+02	1.575E+02	1.589E+02	1.602E+02	1.616E+02	1.642E+02	1.650E+02
pr140	0.000E+00	1.550E-09	1.561E-09	1.575E-09	1.590E-09	1.605E-09	1.621E-09	1.637E-09	1.653E-09	1.684E-09	0.000E+00
te141	0.000E+00	1.011E-12	1.013E-12	1.015E-12	1.017E-12	1.019E-12	1.020E-12	1.022E-12	1.024E-12	1.026E-12	0.000E+00

i141	0.000E+00	1.375E-09	1.377E-09	1.378E-09	1.379E-09	1.381E-09	1.382E-09	1.383E-09	1.385E-09	1.386E-09	0.000E+00
xe141	0.000E+00	2.189E-07	2.187E-07	2.185E-07	2.182E-07	2.180E-07	2.177E-07	2.175E-07	2.172E-07	2.166E-07	0.000E+00
cs141	0.000E+00	1.118E-05	1.117E-05	1.116E-05	1.115E-05	1.114E-05	1.113E-05	1.112E-05	1.111E-05	1.109E-05	0.000E+00
ba141	0.000E+00	6.721E-04	6.719E-04	6.714E-04	6.709E-04	6.704E-04	6.699E-04	6.694E-04	6.690E-04	6.675E-04	0.000E+00
la141	0.000E+00	8.737E-03	8.735E-03	8.729E-03	8.723E-03	8.717E-03	8.710E-03	8.704E-03	8.698E-03	8.680E-03	0.000E+00
ce141	2.134E-07	8.501E-01	1.287E+00	1.508E+00	1.620E+00	1.676E+00	1.704E+00	1.718E+00	1.724E+00	1.728E+00	6.242E-01
pr141	1.340E+02	1.343E+02	1.350E+02	1.359E+02	1.370E+02	1.381E+02	1.392E+02	1.403E+02	1.414E+02	1.437E+02	1.448E+02
nd141	0.000E+00	5.131E-11	5.167E-11	5.206E-11	5.245E-11	5.284E-11	5.324E-11	5.363E-11	5.402E-11	5.475E-11	0.000E+00
te142	0.000E+00	8.782E-13	8.807E-13	8.828E-13	8.850E-13	8.871E-13	8.893E-13	8.915E-13	8.937E-13	8.975E-13	0.000E+00
i142	0.000E+00	1.647E-10	1.652E-10	1.655E-10	1.659E-10	1.663E-10	1.667E-10	1.671E-10	1.675E-10	1.682E-10	0.000E+00
xe142	0.000E+00	6.176E-08	6.175E-08	6.171E-08	6.167E-08	6.163E-08	6.159E-08	6.155E-08	6.151E-08	6.140E-08	0.000E+00
cs142	0.000E+00	4.404E-07	4.401E-07	4.396E-07	4.392E-07	4.387E-07	4.383E-07	4.378E-07	4.374E-07	4.362E-07	0.000E+00
ba142	0.000E+00	3.717E-04	3.715E-04	3.712E-04	3.708E-04	3.705E-04	3.701E-04	3.698E-04	3.694E-04	3.685E-04	0.000E+00
la142	0.000E+00	3.319E-03	3.318E-03	3.315E-03	3.312E-03	3.309E-03	3.306E-03	3.303E-03	3.301E-03	3.293E-03	0.000E+00
ce142	1.348E+02	1.360E+02	1.371E+02	1.383E+02	1.394E+02	1.406E+02	1.417E+02	1.429E+02	1.440E+02	1.463E+02	1.463E+02
pr142	0.000E+00	1.184E-03	1.193E-03	1.203E-03	1.214E-03	1.226E-03	1.238E-03	1.250E-03	1.263E-03	1.286E-03	9.363E-22
pr142m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
nd142	1.585E+00	1.616E+00	1.649E+00	1.682E+00	1.715E+00	1.748E+00	1.782E+00	1.816E+00	1.850E+00	1.920E+00	1.921E+00
i143	0.000E+00	3.911E-12	3.919E-12	3.925E-12	3.931E-12	3.936E-12	3.942E-12	3.948E-12	3.954E-12	3.963E-12	0.000E+00
xe143	0.000E+00	7.402E-09	7.406E-09	7.408E-09	7.409E-09	7.410E-09	7.412E-09	7.413E-09	7.415E-09	7.414E-09	0.000E+00
cs143	0.000E+00	2.328E-07	2.325E-07	2.321E-07	2.317E-07	2.314E-07	2.310E-07	2.306E-07	2.302E-07	2.294E-07	0.000E+00
ba143	0.000E+00	7.247E-06	7.240E-06	7.231E-06	7.221E-06	7.212E-06	7.203E-06	7.193E-06	7.184E-06	7.161E-06	0.000E+00
la143	0.000E+00	4.904E-04	4.901E-04	4.895E-04	4.889E-04	4.883E-04	4.877E-04	4.872E-04	4.866E-04	4.852E-04	0.000E+00
ce143	0.000E+00	6.921E-02	6.916E-02	6.908E-02	6.900E-02	6.892E-02	6.884E-02	6.876E-02	6.868E-02	6.848E-02	2.138E-12
pr143	4.238E-18	5.138E-01	6.302E-01	6.526E-01	6.564E-01	6.565E-01	6.560E-01	6.552E-01	6.545E-01	6.580E-01	6.323E-02
nd143	1.054E+02	1.055E+02	1.060E+02	1.066E+02	1.072E+02	1.078E+02	1.084E+02	1.090E+02	1.096E+02	1.108E+02	1.114E+02
i144	0.000E+00	5.781E-14	5.794E-14	5.804E-14	5.814E-14	5.824E-14	5.834E-14	5.844E-14	5.854E-14	5.869E-14	0.000E+00
xe144	0.000E+00	1.844E-09	1.846E-09	1.848E-09	1.850E-09	1.852E-09	1.853E-09	1.855E-09	1.857E-09	1.859E-09	0.000E+00
cs144	0.000E+00	3.962E-08	3.962E-08	3.959E-08	3.957E-08	3.954E-08	3.952E-08	3.950E-08	3.947E-08	3.941E-08	0.000E+00
ba144	0.000E+00	4.411E-06	4.405E-06	4.397E-06	4.389E-06	4.381E-06	4.373E-06	4.365E-06	4.357E-06	4.339E-06	0.000E+00
la144	0.000E+00	2.094E-05	2.092E-05	2.089E-05	2.086E-05	2.083E-05	2.081E-05	2.078E-05	2.075E-05	2.068E-05	0.000E+00
ce144	5.511E+00	6.063E+00	6.574E+00	7.045E+00	7.480E+00	7.881E+00	8.252E+00	8.594E+00	8.909E+00	9.467E+00	8.424E+00
pr144	2.321E-04	2.560E-04	2.776E-04	2.975E-04	3.158E-04	3.327E-04	3.483E-04	3.627E-04	3.760E-04	3.995E-04	3.548E-04
pr144m	1.354E-06	1.499E-06	1.625E-06	1.741E-06	1.847E-06	1.946E-06	2.037E-06	2.121E-06	2.199E-06	2.336E-06	2.069E-06
nd144	1.417E+02	1.426E+02	1.435E+02	1.445E+02	1.456E+02	1.467E+02	1.478E+02	1.489E+02	1.501E+02	1.525E+02	1.535E+02
i145	0.000E+00	2.414E-15	2.420E-15	2.424E-15	2.428E-15	2.432E-15	2.436E-15	2.440E-15	2.444E-15	2.450E-15	0.000E+00
xe145	0.000E+00	1.553E-10	1.557E-10	1.560E-10	1.563E-10	1.566E-10	1.570E-10	1.573E-10	1.576E-10	1.581E-10	0.000E+00
cs145	0.000E+00	5.759E-09	5.765E-09	5.768E-09	5.771E-09	5.775E-09	5.778E-09	5.782E-09	5.785E-09	5.789E-09	0.000E+00

case 5 fission products page 100
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
ba145	0.000E+00	7.483E-07	7.476E-07	7.466E-07	7.456E-07	7.446E-07	7.436E-07	7.427E-07	7.417E-07	7.393E-07	0.000E+00
la145	0.000E+00	8.873E-06	8.866E-06	8.856E-06	8.846E-06	8.836E-06	8.826E-06	8.816E-06	8.806E-06	8.781E-06	0.000E+00
ce145	0.000E+00	7.252E-05	7.248E-05	7.241E-05	7.234E-05	7.227E-05	7.220E-05	7.213E-05	7.206E-05	7.186E-05	0.000E+00
pr145	0.000E+00	8.659E-03	8.655E-03	8.646E-03	8.637E-03	8.629E-03	8.620E-03	8.612E-03	8.603E-03	8.581E-03	0.000E+00
nd145	8.364E+01	8.428E+01	8.492E+01	8.556E+01	8.620E+01	8.684E+01	8.747E+01	8.811E+01	8.874E+01	8.999E+01	9.000E+01
pm145	6.260E-05	6.306E-05	6.369E-05	6.446E-05	6.538E-05	6.643E-05	6.761E-05	6.891E-05	7.032E-05	7.347E-05	7.576E-05
sm145	8.204E-06	1.072E-05	1.311E-05	1.539E-05	1.756E-05	1.962E-05	2.160E-05	2.348E-05	2.528E-05	2.866E-05	2.599E-05
xe146	0.000E+00	8.733E-12	8.751E-12	8.766E-12	8.780E-12	8.794E-12	8.809E-12	8.823E-12	8.837E-12	8.860E-12	0.000E+00
cs146	0.000E+00	7.206E-10	7.202E-10	7.195E-10	7.188E-10	7.181E-10	7.174E-10	7.168E-10	7.161E-10	7.144E-10	0.000E+00
ba146	0.000E+00	1.964E-07	1.961E-07	1.957E-07	1.953E-07	1.950E-07	1.946E-07	1.942E-07	1.939E-07	1.931E-07	0.000E+00
la146	0.000E+00	1.459E-06	1.458E-06	1.456E-06	1.454E-06	1.452E-06	1.450E-06	1.448E-06	1.446E-06	1.442E-06	0.000E+00
ce146	0.000E+00	2.620E-04	2.619E-04	2.617E-04	2.616E-04	2.614E-04	2.612E-04	2.610E-04	2.608E-04	2.603E-04	0.000E+00
pr146	0.000E+00	4.719E-04	4.718E-04	4.715E-04	4.712E-04	4.708E-04	4.705E-04	4.702E-04	4.699E-04	4.689E-04	0.000E+00
nd146	7.890E+01	7.965E+01	8.040E+01	8.115E+01	8.190E+01	8.265E+01	8.340E+01	8.416E+01	8.491E+01	8.642E+01	8.642E+01
pm146	4.237E-04	4.249E-04	4.262E-04	4.274E-04	4.286E-04	4.299E-04	4.311E-04	4.324E-04	4.337E-04	4.363E-04	4.291E-04
sm146	8.957E-04	9.322E-04	9.691E-04	1.006E-03	1.044E-03	1.082E-03	1.121E-03	1.160E-03	1.199E-03	1.279E-03	1.282E-03
xe147	0.000E+00	9.793E-15	9.814E-15	9.831E-15	9.847E-15	9.863E-15	9.880E-15	9.896E-15	9.913E-15	9.938E-15	0.000E+00
cs147	0.000E+00	2.664E-11	2.669E-11	2.674E-11	2.678E-11	2.683E-11	2.687E-11	2.691E-11	2.696E-11	2.703E-11	0.000E+00
ba147	0.000E+00	1.083E-08	1.084E-08	1.085E-08	1.086E-08	1.086E-08	1.087E-08	1.087E-08	1.088E-08	1.089E-08	0.000E+00
la147	0.000E+00	4.480E-07	4.480E-07	4.478E-07	4.476E-07	4.474E-07	4.472E-07	4.470E-07	4.468E-07	4.462E-07	0.000E+00
ce147	0.000E+00	1.384E-05	1.384E-05	1.383E-05	1.382E-05	1.381E-05	1.381E-05	1.380E-05	1.379E-05	1.377E-05	0.000E+00
pr147	0.000E+00	2.114E-04	2.114E-04	2.113E-04	2.112E-04	2.111E-04	2.110E-04	2.109E-04	2.108E-04	2.105E-04	0.000E+00
nd147	9.525E-23	2.140E-01	2.428E-01	2.466E-01	2.470E-01	2.470E-01	2.469E-01	2.468E-01	2.468E-01	2.465E-01	1.192E-02
pm147	1.423E+01	1.404E+01	1.405E+01	1.408E+01	1.411E+01	1.414E+01	1.416E+01	1.419E+01	1.422E+01	1.426E+01	1.401E+01
sm147	2.304E+01	2.326E+01	2.349E+01	2.371E+01	2.393E+01	2.415E+01	2.437E+01	2.458E+01	2.480E+01	2.524E+01	2.573E+01
cs148	0.000E+00	1.850E-12	1.854E-12	1.857E-12	1.861E-12	1.864E-12	1.867E-12	1.870E-12	1.874E-12	1.879E-12	0.000E+00
ba148	0.000E+00	1.892E-09	1.895E-09	1.898E-09	1.900E-09	1.902E-09	1.905E-09	1.907E-09	1.910E-09	1.913E-09	0.000E+00
la148	0.000E+00	3.407E-08	3.409E-08	3.409E-08	3.410E-08	3.410E-08	3.410E-08	3.411E-08	3.411E-08	3.410E-08	0.000E+00
ce148	0.000E+00	9.750E-06	9.751E-06	9.747E-06	9.743E-06	9.739E-06	9.735E-06	9.731E-06	9.728E-06	9.714E-06	0.000E+00
pr148	0.000E+00	2.758E-05	2.759E-05	2.758E-05	2.758E-05	2.757E-05	2.757E-05	2.757E-05	2.756E-05	2.753E-05	0.000E+00
nd148	4.332E+01	4.370E+01	4.408E+01	4.446E+01	4.484E+01	4.523E+01	4.561E+01	4.599E+01	4.637E+01	4.713E+01	4.713E+01

pm148	1.531E-09	1.724E-02	1.758E-02	1.767E-02	1.775E-02	1.782E-02	1.789E-02	1.795E-02	1.801E-02	1.827E-02	2.189E-04
pm148m	2.226E-07	3.975E-02	5.234E-02	5.644E-02	5.786E-02	5.843E-02	5.872E-02	5.893E-02	5.910E-02	5.940E-02	2.654E-02
sm148	1.191E+01	1.208E+01	1.227E+01	1.247E+01	1.267E+01	1.288E+01	1.308E+01	1.329E+01	1.350E+01	1.392E+01	1.397E+01
cs149	0.000E+00	1.815E-14	1.819E-14	1.822E-14	1.825E-14	1.829E-14	1.832E-14	1.835E-14	1.838E-14	1.843E-14	0.000E+00
ba149	0.000E+00	2.441E-10	2.446E-10	2.450E-10	2.454E-10	2.459E-10	2.463E-10	2.467E-10	2.471E-10	2.477E-10	0.000E+00
la149	0.000E+00	2.258E-08	2.261E-08	2.263E-08	2.265E-08	2.267E-08	2.269E-08	2.270E-08	2.272E-08	2.275E-08	0.000E+00
ce149	0.000E+00	4.698E-07	4.699E-07	4.699E-07	4.698E-07	4.698E-07	4.697E-07	4.697E-07	4.697E-07	4.693E-07	0.000E+00
pr149	0.000E+00	1.911E-05	1.912E-05	1.913E-05	1.913E-05	1.914E-05	1.914E-05	1.915E-05	1.915E-05	1.915E-05	0.000E+00
nd149	0.000E+00	9.328E-04	9.337E-04	9.343E-04	9.348E-04	9.353E-04	9.359E-04	9.364E-04	9.370E-04	9.374E-04	0.000E+00
pm149	0.000E+00	3.150E-02	3.243E-02	3.275E-02	3.287E-02	3.293E-02	3.298E-02	3.302E-02	3.306E-02	3.299E-02	9.963E-09
sm149	4.650E-01	3.074E-01	2.772E-01	2.703E-01	2.689E-01	2.686E-01	2.685E-01	2.684E-01	2.682E-01	2.685E-01	3.025E-01
eu149	3.240E-14	6.213E-12	1.065E-11	1.375E-11	1.585E-11	1.720E-11	1.798E-11	1.835E-11	1.843E-11	1.802E-11	1.260E-11
cs150	0.000E+00	1.188E-15	1.191E-15	1.193E-15	1.195E-15	1.197E-15	1.199E-15	1.201E-15	1.203E-15	1.207E-15	0.000E+00
ba150	0.000E+00	3.087E-11	3.094E-11	3.100E-11	3.106E-11	3.112E-11	3.117E-11	3.123E-11	3.129E-11	3.139E-11	0.000E+00
la150	0.000E+00	9.741E-10	9.763E-10	9.781E-10	9.800E-10	9.818E-10	9.836E-10	9.855E-10	9.874E-10	9.904E-10	0.000E+00
ce150	0.000E+00	1.644E-07	1.647E-07	1.648E-07	1.650E-07	1.651E-07	1.653E-07	1.654E-07	1.656E-07	1.658E-07	0.000E+00
pr150	0.000E+00	5.488E-07	5.496E-07	5.501E-07	5.507E-07	5.512E-07	5.518E-07	5.523E-07	5.529E-07	5.536E-07	0.000E+00
nd150	2.077E+01	2.097E+01	2.118E+01	2.138E+01	2.158E+01	2.178E+01	2.199E+01	2.219E+01	2.239E+01	2.280E+01	2.280E+01
pm150	0.000E+00	4.001E-06	4.111E-06	4.153E-06	4.175E-06	4.191E-06	4.204E-06	4.217E-06	4.229E-06	4.236E-06	0.000E+00

case 5 fission products page 101
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
sm150	3.354E+01	3.388E+01	3.415E+01	3.439E+01	3.464E+01	3.488E+01	3.512E+01	3.536E+01	3.560E+01	3.607E+01	3.607E+01
eu150	6.556E-08	7.361E-08	8.104E-08	8.790E-08	9.426E-08	1.002E-07	1.057E-07	1.109E-07	1.157E-07	1.246E-07	1.243E-07
ba151	0.000E+00	1.075E-13	1.078E-13	1.080E-13	1.082E-13	1.084E-13	1.086E-13	1.088E-13	1.090E-13	1.093E-13	0.000E+00
la151	0.000E+00	1.972E-10	1.977E-10	1.981E-10	1.986E-10	1.990E-10	1.995E-10	1.999E-10	2.004E-10	2.011E-10	0.000E+00
ce151	0.000E+00	1.212E-08	1.214E-08	1.216E-08	1.219E-08	1.221E-08	1.223E-08	1.225E-08	1.228E-08	1.231E-08	0.000E+00
pr151	0.000E+00	8.816E-07	8.833E-07	8.846E-07	8.859E-07	8.873E-07	8.886E-07	8.899E-07	8.913E-07	8.934E-07	0.000E+00
nd151	0.000E+00	5.882E-05	5.894E-05	5.904E-05	5.913E-05	5.923E-05	5.932E-05	5.942E-05	5.952E-05	5.967E-05	0.000E+00
pm151	0.000E+00	8.166E-03	8.184E-03	8.197E-03	8.211E-03	8.224E-03	8.237E-03	8.251E-03	8.264E-03	8.285E-03	5.080E-15
sm151	2.086E+00	2.085E+00	2.092E+00	2.099E+00	2.106E+00	2.112E+00	2.119E+00	2.125E+00	2.132E+00	2.144E+00	2.150E+00
eu151	3.929E-02	3.617E-02	3.340E-02	3.094E-02	2.876E-02	2.683E-02	2.511E-02	2.359E-02	2.224E-02	1.998E-02	2.216E-02
ba152	0.000E+00	8.112E-16	8.181E-16	8.247E-16	8.314E-16	8.382E-16	8.450E-16	8.519E-16	8.588E-16	8.723E-16	0.000E+00
la152	0.000E+00	1.139E-12	1.146E-12	1.153E-12	1.160E-12	1.167E-12	1.174E-12	1.181E-12	1.188E-12	1.202E-12	0.000E+00

ce152	0.000E+00	1.070E-08	1.074E-08	1.077E-08	1.081E-08	1.085E-08	1.088E-08	1.092E-08	1.096E-08	1.103E-08	0.000E+00
pr152	0.000E+00	1.039E-07	1.042E-07	1.044E-07	1.047E-07	1.049E-07	1.051E-07	1.054E-07	1.056E-07	1.060E-07	0.000E+00
nd152	0.000E+00	3.645E-05	3.654E-05	3.661E-05	3.668E-05	3.675E-05	3.682E-05	3.689E-05	3.696E-05	3.707E-05	0.000E+00
pm152	0.000E+00	1.360E-05	1.363E-05	1.365E-05	1.368E-05	1.371E-05	1.373E-05	1.376E-05	1.379E-05	1.383E-05	0.000E+00
pm152m	0.000E+00	8.912E-07	8.937E-07	8.958E-07	8.979E-07	9.000E-07	9.020E-07	9.040E-07	9.060E-07	9.093E-07	0.000E+00
sm152	1.680E+01	1.694E+01	1.708E+01	1.721E+01	1.735E+01	1.748E+01	1.761E+01	1.775E+01	1.788E+01	1.814E+01	1.814E+01
eu152	7.151E-03	9.782E-03	1.210E-02	1.414E-02	1.593E-02	1.750E-02	1.887E-02	2.007E-02	2.112E-02	2.284E-02	2.268E-02
eu152m	0.000E+00	2.715E-05	2.513E-05	2.332E-05	2.172E-05	2.029E-05	1.903E-05	1.791E-05	1.692E-05	1.524E-05	0.000E+00
gd152	9.412E-03	1.053E-02	1.159E-02	1.256E-02	1.347E-02	1.432E-02	1.511E-02	1.585E-02	1.655E-02	1.784E-02	1.790E-02
la153	0.000E+00	7.168E-13	7.187E-13	7.202E-13	7.217E-13	7.232E-13	7.247E-13	7.262E-13	7.277E-13	7.303E-13	0.000E+00
ce153	0.000E+00	8.249E-10	8.273E-10	8.294E-10	8.314E-10	8.335E-10	8.356E-10	8.377E-10	8.398E-10	8.434E-10	0.000E+00
pr153	0.000E+00	2.955E-08	2.964E-08	2.972E-08	2.980E-08	2.988E-08	2.996E-08	3.004E-08	3.012E-08	3.026E-08	0.000E+00
nd153	0.000E+00	2.057E-06	2.062E-06	2.067E-06	2.071E-06	2.076E-06	2.081E-06	2.085E-06	2.090E-06	2.098E-06	0.000E+00
pm153	0.000E+00	1.199E-05	1.202E-05	1.205E-05	1.207E-05	1.210E-05	1.213E-05	1.215E-05	1.218E-05	1.223E-05	0.000E+00
sm153	0.000E+00	2.459E-02	2.480E-02	2.500E-02	2.519E-02	2.538E-02	2.558E-02	2.577E-02	2.596E-02	2.633E-02	8.454E-10
eu153	1.246E+01	1.260E+01	1.276E+01	1.292E+01	1.308E+01	1.324E+01	1.340E+01	1.356E+01	1.372E+01	1.405E+01	1.408E+01
gd153	4.418E-05	6.123E-05	7.913E-05	9.765E-05	1.166E-04	1.357E-04	1.550E-04	1.743E-04	1.934E-04	2.312E-04	2.015E-04
la154	0.000E+00	8.650E-15	8.672E-15	8.691E-15	8.710E-15	8.729E-15	8.748E-15	8.767E-15	8.786E-15	8.818E-15	0.000E+00
ce154	0.000E+00	1.166E-10	1.170E-10	1.173E-10	1.176E-10	1.179E-10	1.183E-10	1.186E-10	1.189E-10	1.195E-10	0.000E+00
pr154	0.000E+00	1.354E-09	1.359E-09	1.365E-09	1.370E-09	1.375E-09	1.380E-09	1.386E-09	1.391E-09	1.401E-09	0.000E+00
nd154	0.000E+00	6.106E-07	6.128E-07	6.148E-07	6.168E-07	6.188E-07	6.208E-07	6.228E-07	6.248E-07	6.284E-07	0.000E+00
pm154	0.000E+00	1.997E-06	2.004E-06	2.011E-06	2.017E-06	2.023E-06	2.030E-06	2.036E-06	2.043E-06	2.054E-06	0.000E+00
pm154m	0.000E+00	6.569E-07	6.592E-07	6.612E-07	6.631E-07	6.650E-07	6.670E-07	6.689E-07	6.708E-07	6.741E-07	0.000E+00
sm154	4.081E+00	4.127E+00	4.173E+00	4.219E+00	4.266E+00	4.313E+00	4.360E+00	4.407E+00	4.454E+00	4.549E+00	4.549E+00
eu154	1.672E+00	1.712E+00	1.751E+00	1.790E+00	1.829E+00	1.868E+00	1.906E+00	1.944E+00	1.982E+00	2.058E+00	2.036E+00
gd154	4.896E-01	5.004E-01	5.114E-01	5.227E-01	5.343E-01	5.461E-01	5.581E-01	5.704E-01	5.829E-01	6.086E-01	6.303E-01
la155	0.000E+00	4.393E-17	4.403E-17	4.411E-17	4.419E-17	4.427E-17	4.435E-17	4.443E-17	4.450E-17	4.463E-17	0.000E+00
ce155	0.000E+00	2.635E-12	2.643E-12	2.650E-12	2.657E-12	2.664E-12	2.670E-12	2.677E-12	2.684E-12	2.696E-12	0.000E+00
pr155	0.000E+00	3.148E-10	3.162E-10	3.175E-10	3.187E-10	3.200E-10	3.213E-10	3.226E-10	3.239E-10	3.263E-10	0.000E+00
nd155	0.000E+00	9.653E-08	9.696E-08	9.735E-08	9.773E-08	9.812E-08	9.852E-08	9.891E-08	9.930E-08	1.000E-07	0.000E+00
pm155	0.000E+00	5.913E-07	5.938E-07	5.960E-07	5.982E-07	6.004E-07	6.026E-07	6.047E-07	6.069E-07	6.109E-07	0.000E+00
sm155	0.000E+00	2.010E-05	2.019E-05	2.027E-05	2.035E-05	2.043E-05	2.051E-05	2.059E-05	2.067E-05	2.081E-05	0.000E+00
eu155	3.880E-01	4.064E-01	4.231E-01	4.382E-01	4.521E-01	4.650E-01	4.771E-01	4.884E-01	4.992E-01	5.195E-01	5.095E-01
gd155m	0.000E+00	8.499E-14	6.472E-14	5.113E-14	4.209E-14	3.614E-14	3.228E-14	2.984E-14	2.835E-14	2.709E-14	0.000E+00
gd155	1.549E-01	1.101E-01	7.989E-02	5.956E-02	4.596E-02	3.690E-02	3.091E-02	2.700E-02	2.449E-02	2.198E-02	3.199E-02
ce156	0.000E+00	2.335E-13	2.342E-13	2.348E-13	2.354E-13	2.360E-13	2.366E-13	2.372E-13	2.379E-13	2.389E-13	0.000E+00
pr156	0.000E+00	1.537E-11	1.545E-11	1.552E-11	1.559E-11	1.567E-11	1.574E-11	1.582E-11	1.589E-11	1.603E-11	0.000E+00
nd156	0.000E+00	3.726E-08	3.747E-08	3.766E-08	3.786E-08	3.805E-08	3.825E-08	3.844E-08	3.864E-08	3.901E-08	0.000E+00

case 5 fission products page 102
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d
pm156	0.000E+00	8.184E-08	8.226E-08	8.264E-08	8.302E-08	8.340E-08	8.378E-08	8.416E-08	8.454E-08	8.524E-08	0.000E+00
sm156	0.000E+00	3.257E-04	3.272E-04	3.286E-04	3.300E-04	3.314E-04	3.328E-04	3.342E-04	3.356E-04	3.381E-04	0.000E+00
eu156	3.574E-17	4.989E-02	6.345E-02	6.831E-02	7.101E-02	7.311E-02	7.498E-02	7.673E-02	7.839E-02	8.151E-02	9.152E-03
gd156	6.075E+00	6.168E+00	6.286E+00	6.407E+00	6.526E+00	6.644E+00	6.761E+00	6.880E+00	6.999E+00	7.243E+00	7.316E+00
ce157	0.000E+00	4.006E-15	4.018E-15	4.028E-15	4.037E-15	4.047E-15	4.057E-15	4.067E-15	4.077E-15	4.094E-15	0.000E+00
pr157	0.000E+00	2.327E-12	2.339E-12	2.349E-12	2.359E-12	2.370E-12	2.380E-12	2.391E-12	2.401E-12	2.421E-12	0.000E+00
nd157	0.000E+00	1.173E-09	1.180E-09	1.187E-09	1.195E-09	1.202E-09	1.209E-09	1.216E-09	1.223E-09	1.236E-09	0.000E+00
pm157	0.000E+00	1.708E-07	1.718E-07	1.728E-07	1.738E-07	1.747E-07	1.757E-07	1.767E-07	1.777E-07	1.795E-07	0.000E+00
sm157	0.000E+00	2.904E-06	2.919E-06	2.934E-06	2.948E-06	2.962E-06	2.977E-06	2.991E-06	3.005E-06	3.031E-06	0.000E+00
eu157	0.000E+00	3.595E-04	3.664E-04	3.699E-04	3.726E-04	3.751E-04	3.775E-04	3.798E-04	3.822E-04	3.862E-04	0.000E+00
gd157	1.163E-02	9.341E-03	9.155E-03	9.206E-03	9.278E-03	9.347E-03	9.414E-03	9.480E-03	9.544E-03	9.706E-03	1.010E-02
pr158	0.000E+00	5.380E-14	5.405E-14	5.428E-14	5.450E-14	5.473E-14	5.496E-14	5.519E-14	5.542E-14	5.584E-14	0.000E+00
nd158	0.000E+00	2.115E-10	2.129E-10	2.141E-10	2.154E-10	2.167E-10	2.180E-10	2.193E-10	2.206E-10	2.230E-10	0.000E+00
pm158	0.000E+00	2.827E-09	2.847E-09	2.866E-09	2.885E-09	2.903E-09	2.922E-09	2.941E-09	2.960E-09	2.996E-09	0.000E+00
sm158	0.000E+00	1.024E-06	1.030E-06	1.035E-06	1.041E-06	1.047E-06	1.052E-06	1.058E-06	1.063E-06	1.074E-06	0.000E+00
eu158	0.000E+00	9.627E-06	9.682E-06	9.733E-06	9.784E-06	9.834E-06	9.885E-06	9.935E-06	9.986E-06	1.008E-05	0.000E+00
gd158	1.650E+00	1.673E+00	1.695E+00	1.717E+00	1.739E+00	1.761E+00	1.784E+00	1.806E+00	1.829E+00	1.875E+00	1.875E+00
pr159	0.000E+00	2.337E-15	2.347E-15	2.355E-15	2.364E-15	2.372E-15	2.381E-15	2.390E-15	2.398E-15	2.414E-15	0.000E+00
nd159	0.000E+00	4.472E-12	4.500E-12	4.526E-12	4.552E-12	4.579E-12	4.605E-12	4.632E-12	4.659E-12	4.709E-12	0.000E+00
pm159	0.000E+00	5.064E-10	5.104E-10	5.141E-10	5.179E-10	5.218E-10	5.256E-10	5.294E-10	5.333E-10	5.407E-10	0.000E+00
sm159	0.000E+00	2.042E-07	2.055E-07	2.068E-07	2.081E-07	2.094E-07	2.106E-07	2.119E-07	2.132E-07	2.156E-07	0.000E+00
eu159	0.000E+00	1.917E-06	1.929E-06	1.940E-06	1.951E-06	1.962E-06	1.972E-06	1.983E-06	1.994E-06	2.015E-06	0.000E+00
gd159	0.000E+00	1.356E-04	1.366E-04	1.375E-04	1.384E-04	1.393E-04	1.402E-04	1.411E-04	1.421E-04	1.438E-04	3.027E-23
tb159	2.361E-01	2.392E-01	2.424E-01	2.457E-01	2.490E-01	2.523E-01	2.557E-01	2.590E-01	2.624E-01	2.692E-01	2.693E-01
nd160	0.000E+00	3.191E-13	3.208E-13	3.223E-13	3.239E-13	3.255E-13	3.271E-13	3.287E-13	3.303E-13	3.333E-13	0.000E+00
pm160	0.000E+00	1.368E-11	1.379E-11	1.389E-11	1.400E-11	1.410E-11	1.421E-11	1.431E-11	1.442E-11	1.462E-11	0.000E+00
sm160	0.000E+00	2.717E-08	2.736E-08	2.754E-08	2.772E-08	2.790E-08	2.807E-08	2.825E-08	2.843E-08	2.877E-08	0.000E+00
eu160	0.000E+00	3.158E-08	3.178E-08	3.195E-08	3.213E-08	3.231E-08	3.249E-08	3.267E-08	3.285E-08	3.318E-08	0.000E+00
gd160	1.077E-01	1.092E-01	1.107E-01	1.122E-01	1.138E-01	1.153E-01	1.169E-01	1.185E-01	1.200E-01	1.232E-01	1.232E-01
tb160	2.195E-06	5.190E-04	9.044E-04	1.194E-03	1.413E-03	1.581E-03	1.712E-03	1.816E-03	1.900E-03	2.029E-03	1.281E-03
dy160	1.900E-02	1.892E-02	1.897E-02	1.912E-02	1.935E-02	1.963E-02	1.995E-02	2.031E-02	2.069E-02	2.150E-02	2.225E-02

nd161	0.000E+00	4.816E-15	4.838E-15	4.858E-15	4.879E-15	4.899E-15	4.920E-15	4.940E-15	4.961E-15	4.999E-15	0.000E+00
pm161	0.000E+00	1.672E-12	1.685E-12	1.697E-12	1.710E-12	1.722E-12	1.735E-12	1.747E-12	1.760E-12	1.784E-12	0.000E+00
sm161	0.000E+00	3.809E-10	3.838E-10	3.866E-10	3.894E-10	3.922E-10	3.950E-10	3.978E-10	4.006E-10	4.060E-10	0.000E+00
eu161	0.000E+00	1.160E-08	1.168E-08	1.174E-08	1.181E-08	1.188E-08	1.195E-08	1.202E-08	1.209E-08	1.222E-08	0.000E+00
gd161	0.000E+00	8.478E-08	8.529E-08	8.576E-08	8.623E-08	8.670E-08	8.717E-08	8.763E-08	8.810E-08	8.897E-08	0.000E+00
tb161	0.000E+00	2.235E-04	2.354E-04	2.383E-04	2.404E-04	2.424E-04	2.441E-04	2.458E-04	2.474E-04	2.503E-04	2.017E-06
dy161	3.790E-02	3.811E-02	3.855E-02	3.899E-02	3.944E-02	3.990E-02	4.035E-02	4.081E-02	4.127E-02	4.219E-02	4.244E-02
pm162	0.000E+00	3.532E-14	3.554E-14	3.574E-14	3.595E-14	3.615E-14	3.636E-14	3.657E-14	3.678E-14	3.717E-14	0.000E+00
sm162	0.000E+00	6.010E-11	6.052E-11	6.093E-11	6.133E-11	6.173E-11	6.214E-11	6.254E-11	6.295E-11	6.372E-11	0.000E+00
eu162	0.000E+00	1.134E-08	1.141E-08	1.147E-08	1.153E-08	1.160E-08	1.166E-08	1.172E-08	1.179E-08	1.191E-08	0.000E+00
gd162	0.000E+00	8.297E-08	8.341E-08	8.381E-08	8.421E-08	8.460E-08	8.500E-08	8.539E-08	8.578E-08	8.649E-08	0.000E+00
tb162	0.000E+00	7.808E-08	7.850E-08	7.887E-08	7.924E-08	7.961E-08	7.998E-08	8.035E-08	8.071E-08	8.138E-08	0.000E+00
tb162m	0.000E+00	2.473E-08	2.483E-08	2.492E-08	2.501E-08	2.510E-08	2.519E-08	2.527E-08	2.536E-08	2.551E-08	0.000E+00
dy162	2.801E-02	2.843E-02	2.885E-02	2.927E-02	2.969E-02	3.011E-02	3.054E-02	3.096E-02	3.139E-02	3.225E-02	3.225E-02
sm163	0.000E+00	1.134E-12	1.142E-12	1.150E-12	1.158E-12	1.166E-12	1.174E-12	1.182E-12	1.189E-12	1.205E-12	0.000E+00
eu163	0.000E+00	1.049E-10	1.055E-10	1.062E-10	1.068E-10	1.074E-10	1.080E-10	1.086E-10	1.093E-10	1.104E-10	0.000E+00
gd163	0.000E+00	5.425E-09	5.454E-09	5.480E-09	5.506E-09	5.532E-09	5.558E-09	5.583E-09	5.609E-09	5.656E-09	0.000E+00
tb163	0.000E+00	7.881E-08	7.922E-08	7.959E-08	7.995E-08	8.032E-08	8.068E-08	8.104E-08	8.140E-08	8.205E-08	0.000E+00
tb163m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

case 5 fission products page 103
power= 1.12mw, burnup= 4291.mwd, flux= 9.20E+12n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	31.7 d	63.4 d	95.1 d	126.8 d	158.5 d	190.2 d	221.9 d	253.6 d	317.0 d	365.0 d	
dy163	1.840E-02	1.874E-02	1.909E-02	1.944E-02	1.980E-02	2.015E-02	2.052E-02	2.088E-02	2.125E-02	2.200E-02	2.200E-02
sm164	0.000E+00	7.990E-14	8.043E-14	8.092E-14	8.141E-14	8.190E-14	8.240E-14	8.289E-14	8.339E-14	8.434E-14	0.000E+00
eu164	0.000E+00	2.494E-12	2.510E-12	2.526E-12	2.541E-12	2.557E-12	2.572E-12	2.588E-12	2.603E-12	2.632E-12	0.000E+00
gd164	0.000E+00	2.269E-08	2.281E-08	2.292E-08	2.303E-08	2.314E-08	2.325E-08	2.335E-08	2.346E-08	2.366E-08	0.000E+00
tb164	0.000E+00	4.400E-09	4.422E-09	4.442E-09	4.462E-09	4.481E-09	4.501E-09	4.521E-09	4.540E-09	4.575E-09	0.000E+00
dy164	4.376E-03	4.456E-03	4.537E-03	4.618E-03	4.701E-03	4.785E-03	4.869E-03	4.955E-03	5.041E-03	5.217E-03	5.217E-03
sm165	0.000E+00	1.158E-15	1.164E-15	1.170E-15	1.176E-15	1.181E-15	1.187E-15	1.193E-15	1.199E-15	1.210E-15	0.000E+00
eu165	0.000E+00	2.375E-13	2.391E-13	2.406E-13	2.421E-13	2.436E-13	2.451E-13	2.466E-13	2.481E-13	2.510E-13	0.000E+00
gd165	0.000E+00	1.606E-10	1.614E-10	1.622E-10	1.630E-10	1.638E-10	1.646E-10	1.654E-10	1.662E-10	1.676E-10	0.000E+00
tb165	0.000E+00	1.063E-09	1.068E-09	1.073E-09	1.077E-09	1.082E-09	1.087E-09	1.091E-09	1.096E-09	1.104E-09	0.000E+00
dy165	0.000E+00	6.712E-07	6.837E-07	6.961E-07	7.086E-07	7.213E-07	7.341E-07	7.471E-07	7.603E-07	7.866E-07	0.000E+00
dy165m	0.000E+00	4.571E-09	4.655E-09	4.739E-09	4.824E-09	4.910E-09	4.997E-09	5.085E-09	5.174E-09	5.353E-09	0.000E+00

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ho165   5.436E-03 5.565E-03 5.697E-03 5.832E-03 5.968E-03 6.107E-03 6.249E-03 6.392E-03 6.538E-03 6.837E-03 6.838E-03
dy166   0.000E+00 4.284E-07 4.309E-07 4.326E-07 4.343E-07 4.360E-07 4.377E-07 4.394E-07 4.411E-07 4.460E-07 2.512E-11
ho166   0.000E+00 1.321E-06 1.352E-06 1.384E-06 1.415E-06 1.448E-06 1.481E-06 1.515E-06 1.549E-06 1.619E-06 1.228E-11
ho166m  1.346E-05 1.385E-05 1.425E-05 1.466E-05 1.507E-05 1.550E-05 1.593E-05 1.638E-05 1.683E-05 1.778E-05 1.777E-05
er166   8.833E-04 9.065E-04 9.319E-04 9.579E-04 9.845E-04 1.012E-03 1.040E-03 1.068E-03 1.097E-03 1.157E-03 1.159E-03
er167   1.443E-05 1.490E-05 1.538E-05 1.588E-05 1.638E-05 1.690E-05 1.743E-05 1.797E-05 1.853E-05 1.968E-05 1.968E-05
er167m  0.000E+00 1.053E-16 1.057E-16 1.061E-16 1.064E-16 1.068E-16 1.071E-16 1.075E-16 1.078E-16 1.084E-16 0.000E+00
er168   1.312E-05 1.365E-05 1.420E-05 1.478E-05 1.537E-05 1.598E-05 1.661E-05 1.727E-05 1.794E-05 1.936E-05 1.936E-05
er169   1.624E-34 1.854E-09 2.040E-09 2.065E-09 2.075E-09 2.082E-09 2.090E-09 2.098E-09 2.105E-09 2.118E-09 6.150E-11
er170   3.764E-07 3.816E-07 3.869E-07 3.922E-07 3.975E-07 4.028E-07 4.081E-07 4.135E-07 4.189E-07 4.297E-07 4.297E-07
er171   0.000E+00 9.568E-11 9.611E-11 9.650E-11 9.687E-11 9.725E-11 9.762E-11 9.799E-11 9.835E-11 9.900E-11 0.000E+00
er172   0.000E+00 3.959E-10 3.979E-10 3.997E-10 4.015E-10 4.032E-10 4.050E-10 4.067E-10 4.085E-10 4.116E-10 3.810E-17
totals  4.025E+03 4.060E+03 4.096E+03 4.132E+03 4.168E+03 4.204E+03 4.240E+03 4.276E+03 4.311E+03 4.383E+03 4.383E+03

flux          9.126E+12 9.147E+12 9.163E+12 9.180E+12 9.196E+12 9.212E+12 9.229E+12 9.245E+12 9.271E+12 0.000E+00

library information...

    cross-section data taken from position number  5 of library on unit 33.

    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    pass  1
    pass  0
    *scale-system control module sas2 library*
    used a time-dependent neutron spectrum, for each of the above passes
      pass 0 applies start-up fuel densiities
      pass n applies mid time densities of nth library interval
    first library updated was...
    ********************************************************************************
    *                                                                              *
    *        prelim lwr origen-s binary working library--id = 1143                 *
    *      made from modified card-image origen-s libraries of scale 4.2           *
```

```
*    data from the light element, actinide, and fission product libraries    *
*      decay data, including gamma and total energy, are from endf/b-vi      *
*                                                                            *
*    neutron flux spectrum factors and cross sections were produced from     *
*   the "presas2" case updating all nuclides on the scale "burnup" library   *
*                                                                            *
*              fission product yields are from endf/b-v                      *
*                                                                            *
*          photon libraries use an 18-energy-group structure                 *
*         the photon data are from the master photon data base,              *
*          produced to include bremsstrahlung from uo2 matrix                *
*                                                                            *
*     see information above this box (if present) for later updates          *
*                                                                            *
******************************************************************************
*                                                                            *

******************************************************************************

      .other identification and sizes of library.

       data set name:  C:\scale5\tmpdir\ft33f001

     8/15/ 94    date library was produced

         1697   total number of nuclides in library
          689   number of light-element nuclides
          129   number of actinide nuclides
          879   number of fission product nuclides

         8025   number of nonzero off-diagonal matrix elements

******************************************************************************
```

case 6 light elements page 104
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
h 1	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03	3.097E+03
h 2	5.439E+00	5.500E+00	5.560E+00	5.621E+00	5.681E+00	5.742E+00	5.803E+00	5.865E+00	5.926E+00	5.988E+00	6.049E+00
h 3	3.985E-06	4.109E-06	4.231E-06	4.351E-06	4.470E-06	4.589E-06	4.707E-06	4.824E-06	4.942E-06	5.060E-06	5.178E-06
h 4	0.000E+00	2.881E-25	2.976E-25	3.069E-25	3.161E-25	3.253E-25	3.345E-25	3.437E-25	3.530E-25	3.623E-25	3.717E-25
he 3	3.616E-07	3.394E-07	3.203E-07	3.040E-07	2.901E-07	2.784E-07	2.685E-07	2.604E-07	2.538E-07	2.484E-07	2.443E-07
he 4	1.814E+00	1.825E+00	1.837E+00	1.849E+00	1.861E+00	1.873E+00	1.885E+00	1.897E+00	1.909E+00	1.922E+00	1.934E+00
he 6	0.000E+00	3.777E-16	3.790E-16	3.800E-16	3.810E-16	3.819E-16	3.829E-16	3.839E-16	3.849E-16	3.858E-16	3.868E-16
li 6	2.139E-07	2.154E-07	2.170E-07	2.185E-07	2.200E-07	2.215E-07	2.229E-07	2.243E-07	2.257E-07	2.271E-07	2.284E-07
li 7	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00	1.685E+00
li 8	0.000E+00	6.265E-13	6.285E-13	6.302E-13	6.318E-13	6.334E-13	6.350E-13	6.367E-13	6.383E-13	6.398E-13	6.414E-13
be 8	0.000E+00	1.495E-18	1.500E-18	1.504E-18	1.508E-18	1.512E-18	1.516E-18	1.519E-18	1.523E-18	1.527E-18	1.531E-18
be 9	1.657E-06	1.660E-06	1.663E-06	1.666E-06	1.669E-06	1.672E-06	1.674E-06	1.677E-06	1.680E-06	1.683E-06	1.686E-06
be 10	3.068E-05	3.117E-05	3.166E-05	3.217E-05	3.269E-05	3.321E-05	3.374E-05	3.428E-05	3.483E-05	3.538E-05	3.595E-05
be 11	0.000E+00	2.599E-15	2.607E-15	2.614E-15	2.621E-15	2.628E-15	2.635E-15	2.641E-15	2.648E-15	2.655E-15	2.661E-15
b 10	5.360E-04	4.790E-04	4.279E-04	3.822E-04	3.412E-04	3.046E-04	2.718E-04	2.424E-04	2.162E-04	1.928E-04	1.718E-04
b 11	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01	1.059E+01
b 12	0.000E+00	1.579E-14	1.584E-14	1.588E-14	1.592E-14	1.597E-14	1.601E-14	1.605E-14	1.609E-14	1.613E-14	1.617E-14
c 12	1.183E-04	1.200E-04	1.216E-04	1.232E-04	1.249E-04	1.265E-04	1.282E-04	1.298E-04	1.315E-04	1.332E-04	1.348E-04
c 13	2.734E+00	2.773E+00	2.811E+00	2.849E+00	2.887E+00	2.926E+00	2.965E+00	3.003E+00	3.042E+00	3.081E+00	3.120E+00
c 14	6.736E-03	6.828E-03	6.921E-03	7.014E-03	7.108E-03	7.201E-03	7.295E-03	7.389E-03	7.484E-03	7.578E-03	7.673E-03
c 15	0.000E+00	1.513E-11	1.518E-11	1.522E-11	1.526E-11	1.530E-11	1.534E-11	1.538E-11	1.542E-11	1.546E-11	1.549E-11
n 13	0.000E+00	1.025E-19	1.050E-19	1.075E-19	1.100E-19	1.126E-19	1.153E-19	1.179E-19	1.206E-19	1.234E-19	1.262E-19
n 14	3.618E-06	3.696E-06	3.775E-06	3.855E-06	3.936E-06	4.018E-06	4.101E-06	4.186E-06	4.271E-06	4.358E-06	4.445E-06
n 15	2.587E-03	2.624E-03	2.660E-03	2.697E-03	2.734E-03	2.771E-03	2.807E-03	2.844E-03	2.881E-03	2.919E-03	2.956E-03
n 16	0.000E+00	4.201E-10	4.214E-10	4.225E-10	4.236E-10	4.247E-10	4.258E-10	4.268E-10	4.279E-10	4.290E-10	4.300E-10
o 16	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04	5.036E+04
o 17	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01	2.039E+01
o 18	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02	1.159E+02
o 19	0.000E+00	1.928E-11	1.935E-11	1.940E-11	1.945E-11	1.950E-11	1.954E-11	1.959E-11	1.964E-11	1.969E-11	1.974E-11
f 19	1.103E-04	1.118E-04	1.133E-04	1.148E-04	1.163E-04	1.178E-04	1.193E-04	1.208E-04	1.223E-04	1.239E-04	1.254E-04
f 20	0.000E+00	1.984E-16	2.017E-16	2.049E-16	2.081E-16	2.114E-16	2.146E-16	2.179E-16	2.212E-16	2.245E-16	2.279E-16

ti 46	5.029E-15	5.243E-15	5.514E-15	5.831E-15	6.185E-15	6.571E-15	6.985E-15	7.425E-15	7.888E-15	8.373E-15	8.880E-15
ti 47	7.405E-05	7.504E-05	7.603E-05	7.702E-05	7.802E-05	7.902E-05	8.002E-05	8.102E-05	8.203E-05	8.304E-05	8.404E-05
ti 48	1.829E-07	1.879E-07	1.930E-07	1.982E-07	2.034E-07	2.088E-07	2.142E-07	2.197E-07	2.253E-07	2.310E-07	2.367E-07
ti 49	1.699E-04	1.722E-04	1.745E-04	1.769E-04	1.792E-04	1.815E-04	1.838E-04	1.862E-04	1.885E-04	1.909E-04	1.932E-04
ti 50	7.999E-04	8.106E-04	8.214E-04	8.323E-04	8.431E-04	8.540E-04	8.649E-04	8.758E-04	8.868E-04	8.978E-04	9.088E-04
ti 51	0.000E+00	1.543E-11	1.557E-11	1.572E-11	1.587E-11	1.602E-11	1.617E-11	1.633E-11	1.649E-11	1.664E-11	1.680E-11
v 49	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
v 50	2.857E-03	2.892E-03	2.927E-03	2.963E-03	2.998E-03	3.034E-03	3.069E-03	3.104E-03	3.140E-03	3.175E-03	3.210E-03
v 51	5.184E-01	5.217E-01	5.271E-01	5.335E-01	5.403E-01	5.472E-01	5.543E-01	5.613E-01	5.684E-01	5.755E-01	5.826E-01
v 52	0.000E+00	1.113E-08	1.125E-08	1.138E-08	1.152E-08	1.166E-08	1.180E-08	1.194E-08	1.208E-08	1.223E-08	1.237E-08
v 53	0.000E+00	1.748E-11	1.753E-11	1.757E-11	1.761E-11	1.765E-11	1.769E-11	1.773E-11	1.777E-11	1.781E-11	1.785E-11
v 54	0.000E+00	1.058E-13	1.063E-13	1.068E-13	1.072E-13	1.076E-13	1.081E-13	1.085E-13	1.090E-13	1.094E-13	1.098E-13
cr 50	1.829E+01	1.828E+01	1.827E+01	1.827E+01	1.826E+01	1.825E+01	1.825E+01	1.824E+01	1.823E+01	1.822E+01	1.822E+01
cr 51	1.789E-03	5.474E-03	7.031E-03	7.693E-03	7.981E-03	8.111E-03	8.176E-03	8.214E-03	8.240E-03	8.260E-03	8.279E-03
cr 52	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.761E+02	3.760E+02	3.760E+02	3.760E+02	3.760E+02	3.760E+02	3.760E+02
cr 53	4.274E+01	4.273E+01	4.272E+01	4.271E+01	4.270E+01	4.269E+01	4.268E+01	4.267E+01	4.266E+01	4.265E+01	4.264E+01
cr 54	1.243E+01	1.245E+01	1.247E+01	1.249E+01	1.251E+01	1.253E+01	1.254E+01	1.256E+01	1.258E+01	1.260E+01	1.262E+01
cr 55	0.000E+00	1.134E-08	1.139E-08	1.144E-08	1.148E-08	1.153E-08	1.158E-08	1.162E-08	1.167E-08	1.172E-08	1.176E-08
mn 54	2.416E-03	2.616E-03	2.802E-03	2.975E-03	3.137E-03	3.287E-03	3.427E-03	3.558E-03	3.679E-03	3.793E-03	3.899E-03

case 6 light elements page 105
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
mn 55	2.824E+01	2.823E+01	2.822E+01	2.821E+01	2.820E+01	2.819E+01	2.818E+01	2.817E+01	2.816E+01	2.815E+01	2.814E+01
mn 56	0.000E+00	5.839E-05	5.856E-05	5.869E-05	5.882E-05	5.895E-05	5.908E-05	5.920E-05	5.933E-05	5.946E-05	5.958E-05
mn 57	0.000E+00	4.707E-11	4.733E-11	4.756E-11	4.778E-11	4.801E-11	4.824E-11	4.847E-11	4.870E-11	4.893E-11	4.916E-11
mn 58	0.000E+00	1.080E-13	1.085E-13	1.088E-13	1.092E-13	1.096E-13	1.100E-13	1.104E-13	1.108E-13	1.112E-13	1.116E-13
fe 54	6.704E+01	6.703E+01	6.703E+01	6.703E+01	6.702E+01	6.702E+01	6.701E+01	6.701E+01	6.700E+01	6.700E+01	6.700E+01
fe 55	9.767E-02	9.906E-02	1.004E-01	1.018E-01	1.031E-01	1.044E-01	1.057E-01	1.069E-01	1.081E-01	1.094E-01	1.106E-01
fe 56	1.099E+03	1.099E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03	1.098E+03
fe 57	3.142E+01	3.149E+01	3.156E+01	3.163E+01	3.170E+01	3.177E+01	3.184E+01	3.191E+01	3.199E+01	3.206E+01	3.213E+01
fe 58	3.873E+00	3.877E+00	3.880E+00	3.884E+00	3.888E+00	3.891E+00	3.895E+00	3.900E+00	3.904E+00	3.908E+00	3.912E+00
fe 59	8.694E-05	1.567E-04	1.977E-04	2.219E-04	2.364E-04	2.452E-04	2.507E-04	2.543E-04	2.567E-04	2.586E-04	2.600E-04
co 58m	0.000E+00	7.305E-10	7.319E-10	7.328E-10	7.337E-10	7.346E-10	7.354E-10	7.363E-10	7.372E-10	7.380E-10	7.388E-10
co 58	3.161E-03	4.412E-03	5.212E-03	5.725E-03	6.056E-03	6.270E-03	6.410E-03	6.504E-03	6.567E-03	6.612E-03	6.644E-03

co 59	4.587E+00	4.581E+00	4.576E+00	4.570E+00	4.564E+00	4.558E+00	4.553E+00	4.547E+00	4.541E+00	4.536E+00	4.530E+00	
co 60	2.873E-01	2.902E-01	2.932E-01	2.961E-01	2.990E-01	3.019E-01	3.047E-01	3.075E-01	3.103E-01	3.131E-01	3.158E-01	
co 60m	0.000E+00	1.076E-06	1.078E-06	1.079E-06	1.081E-06	1.082E-06	1.083E-06	1.085E-06	1.086E-06	1.088E-06	1.089E-06	
co 61	0.000E+00	7.482E-08	7.580E-08	7.673E-08	7.766E-08	7.858E-08	7.950E-08	8.042E-08	8.133E-08	8.224E-08	8.314E-08	
co 62	0.000E+00	6.402E-12	6.421E-12	6.436E-12	6.450E-12	6.465E-12	6.479E-12	6.494E-12	6.508E-12	6.522E-12	6.536E-12	
ni 58	3.006E+02	3.006E+02	3.006E+02	3.005E+02	3.005E+02	3.005E+02	3.004E+02	3.004E+02	3.003E+02	3.003E+02	3.003E+02	
ni 59	2.163E+00	2.188E+00	2.214E+00	2.240E+00	2.266E+00	2.292E+00	2.318E+00	2.343E+00	2.369E+00	2.395E+00	2.420E+00	
ni 60	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	
ni 61	5.862E+00	5.870E+00	5.878E+00	5.886E+00	5.894E+00	5.902E+00	5.910E+00	5.919E+00	5.927E+00	5.935E+00	5.943E+00	
ni 62	1.666E+01	1.665E+01	1.665E+01	1.664E+01	1.664E+01	1.663E+01	1.663E+01	1.662E+01	1.662E+01	1.661E+01	1.661E+01	
ni 63	4.029E-01	4.081E-01	4.134E-01	4.188E-01	4.241E-01	4.294E-01	4.347E-01	4.400E-01	4.454E-01	4.507E-01	4.561E-01	
ni 64	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	4.454E+00	
ni 65	0.000E+00	7.863E-07	7.889E-07	7.909E-07	7.929E-07	7.950E-07	7.970E-07	7.990E-07	8.010E-07	8.030E-07	8.050E-07	
ni 66	1.030E-17	4.306E-11	4.334E-11	4.357E-11	4.379E-11	4.402E-11	4.424E-11	4.446E-11	4.469E-11	4.491E-11	4.513E-11	
cu 62	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
cu 63	1.260E-02	1.287E-02	1.314E-02	1.341E-02	1.369E-02	1.397E-02	1.425E-02	1.453E-02	1.482E-02	1.512E-02	1.542E-02	
cu 64	0.000E+00	3.978E-08	4.075E-08	4.170E-08	4.267E-08	4.365E-08	4.465E-08	4.566E-08	4.669E-08	4.773E-08	4.879E-08	
cu 65	1.315E-02	1.333E-02	1.351E-02	1.369E-02	1.388E-02	1.406E-02	1.424E-02	1.442E-02	1.461E-02	1.479E-02	1.497E-02	
cu 66	1.605E-20	1.338E-10	1.361E-10	1.383E-10	1.405E-10	1.427E-10	1.449E-10	1.471E-10	1.493E-10	1.516E-10	1.538E-10	
cu 67	4.676E-20	3.594E-14	3.667E-14	3.735E-14	3.804E-14	3.873E-14	3.943E-14	4.014E-14	4.085E-14	4.157E-14	4.230E-14	
zn 63	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
zn 64	9.515E-06	1.017E-05	1.085E-05	1.155E-05	1.226E-05	1.299E-05	1.374E-05	1.450E-05	1.528E-05	1.608E-05	1.690E-05	
zn 65	9.868E-10	1.183E-09	1.381E-09	1.582E-09	1.785E-09	1.992E-09	2.202E-09	2.416E-09	2.634E-09	2.856E-09	3.083E-09	
zn 66	3.291E-05	3.382E-05	3.474E-05	3.567E-05	3.662E-05	3.759E-05	3.857E-05	3.956E-05	4.057E-05	4.160E-05	4.264E-05	
zn 67	2.006E-08	2.089E-08	2.175E-08	2.263E-08	2.354E-08	2.447E-08	2.543E-08	2.642E-08	2.744E-08	2.848E-08	2.956E-08	
zn 68	1.328E-10	1.401E-10	1.478E-10	1.559E-10	1.643E-10	1.730E-10	1.822E-10	1.917E-10	2.015E-10	2.118E-10	2.225E-10	
zn 69	0.000E+00	1.325E-17	1.402E-17	1.483E-17	1.566E-17	1.654E-17	1.746E-17	1.841E-17	1.941E-17	2.045E-17	2.154E-17	
zn 69m	0.000E+00	1.305E-17	1.381E-17	1.460E-17	1.543E-17	1.629E-17	1.719E-17	1.814E-17	1.912E-17	2.015E-17	2.122E-17	
zn 70	1.212E-18	1.314E-18	1.423E-18	1.541E-18	1.667E-18	1.801E-18	1.945E-18	2.099E-18	2.264E-18	2.439E-18	2.626E-18	
zn 71	0.000E+00	1.431E-28	1.556E-28	1.688E-28	1.831E-28	1.984E-28	2.148E-28	2.324E-28	2.512E-28	2.713E-28	2.928E-28	
zn 71m	0.000E+00	1.456E-27	1.582E-27	1.717E-27	1.862E-27	2.018E-27	2.185E-27	2.363E-27	2.555E-27	2.760E-27	2.978E-27	
sr 84	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 85m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 86	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 87	1.098E-03	1.113E-03	1.127E-03	1.141E-03	1.156E-03	1.170E-03	1.185E-03	1.199E-03	1.214E-03	1.228E-03	1.243E-03	
sr 87m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr 88	1.040E-01	1.054E-01	1.068E-01	1.083E-01	1.097E-01	1.111E-01	1.125E-01	1.140E-01	1.154E-01	1.169E-01	1.183E-01	

case 6 light elements page 106
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
sr 89	8.448E-05	1.382E-04	1.719E-04	1.930E-04	2.063E-04	2.148E-04	2.203E-04	2.239E-04	2.264E-04	2.282E-04	2.295E-04
sr 90	2.876E-06	2.946E-06	3.019E-06	3.093E-06	3.168E-06	3.244E-06	3.322E-06	3.400E-06	3.480E-06	3.561E-06	3.643E-06
sr 91	0.000E+00	1.115E-07	1.119E-07	1.122E-07	1.125E-07	1.128E-07	1.131E-07	1.133E-07	1.136E-07	1.139E-07	1.142E-07
sr 93	0.000E+00	1.593E-11	1.598E-11	1.602E-11	1.606E-11	1.610E-11	1.614E-11	1.618E-11	1.622E-11	1.626E-11	1.630E-11
y 89	7.841E-03	7.895E-03	7.969E-03	8.056E-03	8.152E-03	8.252E-03	8.356E-03	8.461E-03	8.568E-03	8.677E-03	8.786E-03
y 89m	2.889E-14	4.727E-14	5.878E-14	6.599E-14	7.055E-14	7.345E-14	7.533E-14	7.657E-14	7.742E-14	7.802E-14	7.846E-14
y 90	2.009E-09	4.418E-04	4.433E-04	4.444E-04	4.456E-04	4.467E-04	4.478E-04	4.490E-04	4.501E-04	4.512E-04	4.523E-04
y 90m	0.000E+00	1.105E-12	1.119E-12	1.135E-12	1.151E-12	1.168E-12	1.186E-12	1.204E-12	1.222E-12	1.241E-12	1.259E-12
y 91	2.690E-04	4.029E-04	4.924E-04	5.523E-04	5.924E-04	6.196E-04	6.382E-04	6.510E-04	6.601E-04	6.667E-04	6.716E-04
y 92	0.000E+00	1.476E-06	1.481E-06	1.484E-06	1.488E-06	1.492E-06	1.496E-06	1.500E-06	1.504E-06	1.507E-06	1.511E-06
y 93	0.000E+00	8.503E-10	8.530E-10	8.552E-10	8.573E-10	8.595E-10	8.616E-10	8.638E-10	8.659E-10	8.680E-10	8.701E-10
y 94	0.000E+00	8.084E-09	8.111E-09	8.132E-09	8.153E-09	8.173E-09	8.194E-09	8.215E-09	8.235E-09	8.256E-09	8.276E-09
y 96	0.000E+00	2.899E-13	2.908E-13	2.915E-13	2.923E-13	2.930E-13	2.937E-13	2.945E-13	2.952E-13	2.959E-13	2.966E-13
zr 89	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
zr 90	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04	4.982E+04
zr 91	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.093E+04	1.092E+04	1.092E+04	1.092E+04	1.092E+04	1.092E+04
zr 92	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04	1.696E+04
zr 93	1.758E+01	1.782E+01	1.805E+01	1.829E+01	1.853E+01	1.877E+01	1.901E+01	1.925E+01	1.949E+01	1.973E+01	1.997E+01
zr 94	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04	1.758E+04
zr 95	9.547E-02	1.368E-01	1.653E-01	1.851E-01	1.989E-01	2.085E-01	2.153E-01	2.201E-01	2.236E-01	2.262E-01	2.281E-01
zr 96	2.881E+03	2.880E+03	2.880E+03	2.880E+03	2.880E+03	2.880E+03	2.880E+03	2.880E+03	2.880E+03	2.879E+03	2.879E+03
zr 97	8.806E-24	3.976E-03	3.989E-03	3.999E-03	4.009E-03	4.019E-03	4.029E-03	4.039E-03	4.049E-03	4.059E-03	4.068E-03
nb 91	2.168E-15	2.423E-15	2.689E-15	2.964E-15	3.251E-15	3.548E-15	3.856E-15	4.175E-15	4.505E-15	4.848E-15	5.202E-15
nb 92	4.170E-12	4.661E-12	5.171E-12	5.701E-12	6.252E-12	6.823E-12	7.415E-12	8.028E-12	8.664E-12	9.322E-12	1.000E-11
nb 93	3.573E-06	3.705E-06	3.840E-06	3.977E-06	4.116E-06	4.259E-06	4.404E-06	4.552E-06	4.703E-06	4.856E-06	5.012E-06
nb 93m	3.200E-05	3.263E-05	3.327E-05	3.391E-05	3.457E-05	3.523E-05	3.590E-05	3.658E-05	3.726E-05	3.795E-05	3.865E-05
nb 94	3.325E-09	3.717E-09	4.123E-09	4.546E-09	4.984E-09	5.438E-09	5.908E-09	6.396E-09	6.900E-09	7.422E-09	7.962E-09
nb 95	7.275E-02	6.905E-02	7.639E-02	8.644E-02	9.590E-02	1.037E-01	1.098E-01	1.144E-01	1.178E-01	1.203E-01	1.222E-01
nb 95m	6.334E-05	8.225E-05	1.012E-04	1.143E-04	1.234E-04	1.297E-04	1.342E-04	1.374E-04	1.397E-04	1.414E-04	1.426E-04
nb 96	7.968E-22	6.390E-07	7.077E-07	8.027E-07	8.930E-07	9.687E-07	1.028E-06	1.074E-06	1.109E-06	1.136E-06	1.156E-06
nb 97	6.747E-25	2.827E-04	2.836E-04	2.843E-04	2.850E-04	2.858E-04	2.865E-04	2.872E-04	2.879E-04	2.886E-04	2.893E-04

nb 97m	8.241E-27	3.717E-06	3.729E-06	3.738E-06	3.748E-06	3.757E-06	3.767E-06	3.776E-06	3.785E-06	3.794E-06	3.804E-06
nb 98	0.000E+00	6.721E-17	6.924E-17	7.126E-17	7.332E-17	7.541E-17	7.755E-17	7.972E-17	8.194E-17	8.419E-17	8.648E-17
nb100	0.000E+00	4.058E-25	4.157E-25	4.258E-25	4.361E-25	4.468E-25	4.578E-25	4.692E-25	4.809E-25	4.930E-25	5.055E-25
mo 92	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 93	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
mo 94	2.081E-13	2.195E-13	2.323E-13	2.464E-13	2.619E-13	2.788E-13	2.973E-13	3.173E-13	3.389E-13	3.622E-13	3.872E-13
mo 95	5.943E+00	5.984E+00	6.028E+00	6.077E+00	6.134E+00	6.196E+00	6.263E+00	6.333E+00	6.407E+00	6.482E+00	6.558E+00
mo 96	2.085E-01	2.150E-01	2.216E-01	2.282E-01	2.350E-01	2.418E-01	2.487E-01	2.557E-01	2.628E-01	2.700E-01	2.773E-01
mo 97	1.007E+01	1.020E+01	1.033E+01	1.047E+01	1.060E+01	1.074E+01	1.088E+01	1.101E+01	1.115E+01	1.129E+01	1.142E+01
mo 98	6.709E-02	6.891E-02	7.076E-02	7.263E-02	7.454E-02	7.648E-02	7.844E-02	8.044E-02	8.247E-02	8.452E-02	8.661E-02
mo 99	1.955E-12	4.969E-07	5.120E-07	5.269E-07	5.421E-07	5.577E-07	5.734E-07	5.895E-07	6.059E-07	6.225E-07	6.395E-07
mo100	6.234E-09	6.350E-09	6.485E-09	6.624E-09	6.767E-09	6.915E-09	7.068E-09	7.226E-09	7.388E-09	7.555E-09	7.727E-09
mo101	0.000E+00	1.041E-16	1.067E-16	1.093E-16	1.119E-16	1.147E-16	1.175E-16	1.204E-16	1.234E-16	1.265E-16	1.297E-16
tc 97	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tc 97m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
tc 98	2.876E-11	3.037E-11	3.205E-11	3.381E-11	3.563E-11	3.753E-11	3.951E-11	4.157E-11	4.371E-11	4.594E-11	4.826E-11
tc 99	1.213E-05	1.256E-05	1.306E-05	1.357E-05	1.411E-05	1.465E-05	1.521E-05	1.579E-05	1.638E-05	1.699E-05	1.761E-05
tc100	0.000E+00	2.201E-13	2.296E-13	2.393E-13	2.493E-13	2.596E-13	2.702E-13	2.812E-13	2.924E-13	3.040E-13	3.160E-13

case 6 light elements page 107
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
tc101	0.000E+00	1.013E-16	1.038E-16	1.063E-16	1.088E-16	1.115E-16	1.143E-16	1.171E-16	1.200E-16	1.231E-16	1.262E-16
cd106	6.447E-40	7.660E-40	8.939E-40	1.029E-39	1.171E-39	1.322E-39	1.482E-39	1.652E-39	1.832E-39	2.024E-39	2.229E-39
cd107	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
cd108	6.774E-34	8.049E-34	9.393E-34	1.081E-33	1.232E-33	1.391E-33	1.561E-33	1.741E-33	1.933E-33	2.138E-33	2.357E-33
cd109	1.189E-37	1.586E-37	2.040E-37	2.553E-37	3.125E-37	3.759E-37	4.456E-37	5.219E-37	6.052E-37	6.957E-37	7.938E-37
cd110	1.723E-30	2.033E-30	2.393E-30	2.808E-30	3.287E-30	3.836E-30	4.465E-30	5.182E-30	5.998E-30	6.923E-30	7.970E-30
cd111	1.213E-06	1.229E-06	1.245E-06	1.261E-06	1.277E-06	1.293E-06	1.309E-06	1.325E-06	1.341E-06	1.358E-06	1.374E-06
cd111m	0.000E+00	1.374E-38	1.636E-38	1.963E-38	2.290E-38	2.683E-38	3.141E-38	3.664E-38	4.253E-38	4.908E-38	5.627E-38
cd112	1.037E-05	1.051E-05	1.064E-05	1.078E-05	1.091E-05	1.105E-05	1.118E-05	1.132E-05	1.145E-05	1.159E-05	1.172E-05
cd113	4.532E-08	4.527E-08	4.527E-08	4.527E-08	4.528E-08	4.529E-08	4.530E-08	4.532E-08	4.533E-08	4.534E-08	4.536E-08
cd113m	1.714E-08	1.761E-08	1.808E-08	1.856E-08	1.904E-08	1.953E-08	2.003E-08	2.054E-08	2.105E-08	2.156E-08	2.209E-08
cd114	6.330E-04	6.434E-04	6.574E-04	6.737E-04	6.914E-04	7.101E-04	7.296E-04	7.495E-04	7.699E-04	7.906E-04	8.117E-04

cd115	2.408E-15	1.039E-08	1.064E-08	1.091E-08	1.121E-08	1.153E-08	1.186E-08	1.220E-08	1.254E-08	1.289E-08	1.325E-08
cd115m	7.467E-09	1.404E-08	1.808E-08	2.069E-08	2.249E-08	2.385E-08	2.496E-08	2.594E-08	2.685E-08	2.772E-08	2.859E-08
cd116	7.660E-06	7.765E-06	7.870E-06	7.976E-06	8.081E-06	8.187E-06	8.293E-06	8.400E-06	8.506E-06	8.613E-06	8.721E-06
cd117	0.000E+00	3.915E-10	3.928E-10	3.938E-10	3.948E-10	3.958E-10	3.968E-10	3.979E-10	3.989E-10	3.999E-10	4.009E-10
cd117m	0.000E+00	4.496E-13	4.572E-13	4.645E-13	4.718E-13	4.792E-13	4.867E-13	4.942E-13	5.017E-13	5.093E-13	5.169E-13
cd119	0.000E+00	2.029E-13	2.036E-13	2.041E-13	2.046E-13	2.052E-13	2.057E-13	2.062E-13	2.067E-13	2.072E-13	2.077E-13
cd121	0.000E+00	5.233E-15	5.250E-15	5.263E-15	5.276E-15	5.290E-15	5.303E-15	5.316E-15	5.329E-15	5.342E-15	5.354E-15
in113	2.995E-01	3.012E-01	3.034E-01	3.058E-01	3.085E-01	3.114E-01	3.145E-01	3.177E-01	3.211E-01	3.245E-01	3.280E-01
in113m	5.704E-06	6.929E-06	7.932E-06	8.750E-06	9.418E-06	9.966E-06	1.041E-05	1.078E-05	1.109E-05	1.134E-05	1.155E-05
in114	4.491E-09	1.440E-08	1.642E-08	1.774E-08	1.864E-08	1.928E-08	1.978E-08	2.019E-08	2.054E-08	2.086E-08	2.117E-08
in114m	2.792E-04	4.713E-04	5.922E-04	6.697E-04	7.206E-04	7.556E-04	7.809E-04	8.004E-04	8.166E-04	8.307E-04	8.438E-04
in115	4.722E-06	4.736E-06	4.753E-06	4.771E-06	4.789E-06	4.808E-06	4.826E-06	4.844E-06	4.862E-06	4.880E-06	4.898E-06
in116	0.000E+00	7.081E-12	7.105E-12	7.123E-12	7.142E-12	7.160E-12	7.179E-12	7.197E-12	7.216E-12	7.234E-12	7.252E-12
in116m	0.000E+00	1.647E-10	1.658E-10	1.669E-10	1.680E-10	1.690E-10	1.701E-10	1.712E-10	1.723E-10	1.733E-10	1.744E-10
in117	0.000E+00	1.293E-09	1.297E-09	1.301E-09	1.304E-09	1.308E-09	1.311E-09	1.314E-09	1.318E-09	1.321E-09	1.324E-09
in117m	0.000E+00	2.778E-10	2.787E-10	2.794E-10	2.802E-10	2.809E-10	2.816E-10	2.823E-10	2.830E-10	2.838E-10	2.845E-10
in118	0.000E+00	8.244E-13	8.271E-13	8.292E-13	8.314E-13	8.335E-13	8.356E-13	8.377E-13	8.399E-13	8.420E-13	8.440E-13
in119	0.000E+00	1.713E-11	1.718E-11	1.723E-11	1.727E-11	1.732E-11	1.736E-11	1.741E-11	1.745E-11	1.750E-11	1.754E-11
in119m	0.000E+00	1.222E-12	1.226E-12	1.229E-12	1.232E-12	1.236E-12	1.239E-12	1.242E-12	1.245E-12	1.248E-12	1.251E-12
in120	0.000E+00	2.006E-22	2.020E-22	2.030E-22	2.041E-22	2.051E-22	2.062E-22	2.072E-22	2.083E-22	2.093E-22	2.104E-22
in120m	0.000E+00	4.514E-21	4.544E-21	4.568E-21	4.591E-21	4.615E-21	4.639E-21	4.663E-21	4.686E-21	4.710E-21	4.734E-21
in121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
sn112	1.476E+01	1.476E+01	1.475E+01	1.475E+01	1.475E+01	1.474E+01	1.474E+01	1.473E+01	1.473E+01	1.472E+01	1.472E+01
sn113	9.496E-03	1.154E-02	1.321E-02	1.457E-02	1.568E-02	1.659E-02	1.734E-02	1.796E-02	1.846E-02	1.888E-02	1.923E-02
sn113m	0.000E+00	8.199E-07	8.223E-07	8.242E-07	8.261E-07	8.280E-07	8.298E-07	8.317E-07	8.335E-07	8.353E-07	8.371E-07
sn114	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.025E+01	1.024E+01	1.024E+01	1.024E+01	1.024E+01	1.024E+01
sn115	5.360E+00	5.354E+00	5.347E+00	5.340E+00	5.333E+00	5.327E+00	5.320E+00	5.313E+00	5.307E+00	5.300E+00	5.293E+00
sn116	2.285E+02	2.285E+02	2.285E+02	2.285E+02	2.285E+02	2.284E+02	2.284E+02	2.284E+02	2.284E+02	2.284E+02	2.284E+02
sn117	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02	1.222E+02
sn117m	1.030E-03	1.365E-02	1.584E-02	1.624E-02	1.635E-02	1.640E-02	1.644E-02	1.648E-02	1.652E-02	1.656E-02	1.660E-02
sn118	3.865E+02	3.865E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02	3.866E+02
sn119	1.391E+02	1.391E+02	1.391E+02	1.392E+02	1.392E+02	1.392E+02	1.392E+02	1.392E+02	1.392E+02	1.392E+02	1.392E+02
sn119m	1.834E-01	2.000E-01	2.155E-01	2.298E-01	2.430E-01	2.553E-01	2.667E-01	2.772E-01	2.870E-01	2.962E-01	3.046E-01
sn120	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02	5.240E+02
sn121	1.855E-07	3.973E-04	3.986E-04	3.997E-04	4.007E-04	4.017E-04	4.028E-04	4.038E-04	4.048E-04	4.058E-04	4.068E-04
sn121m	4.258E-03	4.314E-03	4.370E-03	4.426E-03	4.481E-03	4.537E-03	4.594E-03	4.650E-03	4.706E-03	4.762E-03	4.819E-03
sn122	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01	7.552E+01
sn123	2.312E-03	2.765E-03	3.143E-03	3.459E-03	3.724E-03	3.945E-03	4.131E-03	4.288E-03	4.420E-03	4.531E-03	4.626E-03

case 6 light elements page 108
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
sn123m	0.000E+00	5.924E-09	5.943E-09	5.959E-09	5.974E-09	5.989E-09	6.004E-09	6.019E-09	6.034E-09	6.049E-09	6.064E-09
sn124	9.310E+01	9.310E+01	9.309E+01	9.309E+01	9.308E+01	9.308E+01	9.307E+01	9.306E+01	9.306E+01	9.305E+01	9.305E+01
sn125	1.630E-06	6.456E-05	6.992E-05	7.052E-05	7.073E-05	7.091E-05	7.109E-05	7.126E-05	7.144E-05	7.161E-05	7.178E-05
sn125m	0.000E+00	1.561E-06	1.566E-06	1.570E-06	1.574E-06	1.578E-06	1.582E-06	1.586E-06	1.590E-06	1.594E-06	1.598E-06
sb121	5.968E-01	6.040E-01	6.117E-01	6.193E-01	6.270E-01	6.346E-01	6.423E-01	6.499E-01	6.576E-01	6.653E-01	6.730E-01
sb122	3.260E-10	1.011E-04	1.027E-04	1.042E-04	1.058E-04	1.074E-04	1.089E-04	1.105E-04	1.121E-04	1.137E-04	1.153E-04
sb122m	0.000E+00	9.627E-10	9.780E-10	9.928E-10	1.008E-09	1.023E-09	1.038E-09	1.053E-09	1.068E-09	1.083E-09	1.098E-09
sb123	6.501E-02	6.543E-02	6.592E-02	6.647E-02	6.708E-02	6.774E-02	6.843E-02	6.915E-02	6.990E-02	7.067E-02	7.145E-02
sb124	6.542E-05	9.811E-05	1.206E-04	1.362E-04	1.473E-04	1.554E-04	1.615E-04	1.664E-04	1.704E-04	1.739E-04	1.770E-04
sb124m	0.000E+00	7.382E-12	7.462E-12	7.544E-12	7.633E-12	7.727E-12	7.826E-12	7.928E-12	8.034E-12	8.143E-12	8.254E-12
sb125	1.530E-01	1.551E-01	1.571E-01	1.592E-01	1.612E-01	1.632E-01	1.651E-01	1.671E-01	1.689E-01	1.708E-01	1.726E-01
sb126	4.284E-07	7.230E-06	8.321E-06	8.592E-06	8.745E-06	8.880E-06	9.011E-06	9.140E-06	9.267E-06	9.394E-06	9.519E-06
sb126m	0.000E+00	7.847E-09	7.978E-09	8.103E-09	8.227E-09	8.349E-09	8.471E-09	8.590E-09	8.709E-09	8.827E-09	8.943E-09
te120	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te121m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
te122	3.239E-02	3.315E-02	3.402E-02	3.490E-02	3.579E-02	3.670E-02	3.762E-02	3.855E-02	3.950E-02	4.046E-02	4.143E-02
te123	2.548E-04	2.584E-04	2.629E-04	2.682E-04	2.742E-04	2.808E-04	2.878E-04	2.953E-04	3.031E-04	3.114E-04	3.199E-04
te123m	1.753E-05	2.174E-05	2.539E-05	2.860E-05	3.144E-05	3.399E-05	3.630E-05	3.843E-05	4.041E-05	4.226E-05	4.403E-05
te124	2.185E-03	2.230E-03	2.288E-03	2.352E-03	2.423E-03	2.497E-03	2.575E-03	2.656E-03	2.738E-03	2.823E-03	2.909E-03
te125	2.764E-01	2.800E-01	2.837E-01	2.875E-01	2.913E-01	2.951E-01	2.990E-01	3.029E-01	3.069E-01	3.109E-01	3.150E-01
te125m	2.093E-03	2.082E-03	2.085E-03	2.096E-03	2.112E-03	2.132E-03	2.154E-03	2.178E-03	2.202E-03	2.226E-03	2.251E-03
te126	3.177E-03	3.263E-03	3.357E-03	3.454E-03	3.552E-03	3.651E-03	3.752E-03	3.855E-03	3.959E-03	4.065E-03	4.172E-03
te127	3.180E-10	5.509E-09	5.745E-09	5.972E-09	6.195E-09	6.416E-09	6.635E-09	6.854E-09	7.073E-09	7.293E-09	7.515E-09
te127m	9.085E-08	1.147E-07	1.352E-07	1.530E-07	1.686E-07	1.825E-07	1.952E-07	2.067E-07	2.175E-07	2.276E-07	2.373E-07
te128	1.629E-08	1.710E-08	1.795E-08	1.885E-08	1.980E-08	2.079E-08	2.182E-08	2.290E-08	2.402E-08	2.520E-08	2.642E-08
te129	1.148E-17	9.964E-16	1.058E-15	1.118E-15	1.179E-15	1.242E-15	1.307E-15	1.376E-15	1.447E-15	1.522E-15	1.599E-15
te129m	1.245E-14	3.142E-14	4.202E-14	4.860E-14	5.330E-14	5.714E-14	6.065E-14	6.408E-14	6.754E-14	7.110E-14	7.479E-14
te130	7.606E-17	7.777E-17	8.056E-17	8.399E-17	8.784E-17	9.201E-17	9.648E-17	1.012E-16	1.062E-16	1.115E-16	1.171E-16
te131	1.567E-38	4.836E-25	5.026E-25	5.253E-25	5.508E-25	5.784E-25	6.080E-25	6.395E-25	6.728E-25	7.081E-25	7.454E-25
te131m	5.011E-36	2.539E-24	2.638E-24	2.758E-24	2.891E-24	3.037E-24	3.192E-24	3.357E-24	3.532E-24	3.717E-24	3.913E-24

i125	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
i126	1.700E-20	2.715E-19	3.100E-19	3.300E-19	3.492E-19	3.690E-19	3.897E-19	4.113E-19	4.338E-19	4.573E-19	4.819E-19	
i127	8.156E-06	8.475E-06	8.813E-06	9.165E-06	9.530E-06	9.909E-06	1.030E-05	1.071E-05	1.112E-05	1.156E-05	1.200E-05	
i128	0.000E+00	8.049E-12	8.398E-12	8.756E-12	9.128E-12	9.516E-12	9.917E-12	1.033E-11	1.076E-11	1.121E-11	1.167E-11	
i129	7.555E-12	8.035E-12	8.552E-12	9.100E-12	9.680E-12	1.029E-11	1.093E-11	1.161E-11	1.232E-11	1.307E-11	1.386E-11	
i130	0.000E+00	1.219E-16	1.302E-16	1.389E-16	1.481E-16	1.579E-16	1.682E-16	1.790E-16	1.905E-16	2.026E-16	2.153E-16	
i130m	0.000E+00	1.104E-18	1.179E-18	1.258E-18	1.341E-18	1.430E-18	1.523E-18	1.621E-18	1.725E-18	1.834E-18	1.950E-18	
i131	5.548E-22	6.484E-20	7.290E-20	7.814E-20	8.356E-20	8.930E-20	9.538E-20	1.018E-19	1.086E-19	1.158E-19	1.234E-19	
i132	0.000E+00	2.270E-26	2.560E-26	2.756E-26	2.960E-26	3.177E-26	3.408E-26	3.653E-26	3.915E-26	4.192E-26	4.487E-26	
sm144	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sm145	3.423E-21	3.801E-21	4.157E-21	4.491E-21	4.806E-21	5.103E-21	5.383E-21	5.648E-21	5.898E-21	6.134E-21	6.358E-21	
sm146	2.214E-19	2.286E-19	2.358E-19	2.431E-19	2.504E-19	2.578E-19	2.652E-19	2.727E-19	2.802E-19	2.878E-19	2.954E-19	
sm147	3.116E-15	3.127E-15	3.139E-15	3.151E-15	3.163E-15	3.176E-15	3.188E-15	3.201E-15	3.214E-15	3.226E-15	3.239E-15	
sm148	1.216E-12	1.217E-12	1.218E-12	1.219E-12	1.220E-12	1.221E-12	1.222E-12	1.222E-12	1.223E-12	1.223E-12	1.224E-12	
sm149	1.429E-09	1.350E-09	1.280E-09	1.212E-09	1.149E-09	1.088E-09	1.031E-09	9.764E-10	9.247E-10	8.757E-10	8.292E-10	
sm150	2.296E-06	2.297E-06	2.297E-06	2.297E-06	2.297E-06	2.297E-06	2.297E-06	2.296E-06	2.295E-06	2.295E-06	2.294E-06	
sm151	7.901E-08	7.894E-08	7.897E-08	7.901E-08	7.904E-08	7.908E-08	7.910E-08	7.912E-08	7.913E-08	7.913E-08	7.911E-08	
sm152	3.451E-06	3.474E-06	3.498E-06	3.521E-06	3.543E-06	3.564E-06	3.585E-06	3.605E-06	3.624E-06	3.643E-06	3.661E-06	
sm153	6.444E-16	2.746E-08	2.757E-08	2.767E-08	2.776E-08	2.785E-08	2.794E-08	2.803E-08	2.812E-08	2.821E-08	2.829E-08	

case 6 light elements page 109
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
sm154	1.175E-05	1.195E-05	1.216E-05	1.236E-05	1.257E-05	1.278E-05	1.298E-05	1.319E-05	1.340E-05	1.361E-05	1.382E-05
sm155	0.000E+00	4.273E-11	4.292E-11	4.309E-11	4.326E-11	4.342E-11	4.359E-11	4.376E-11	4.392E-11	4.409E-11	4.426E-11
eu151	2.159E-09	2.074E-09	1.999E-09	1.934E-09	1.877E-09	1.826E-09	1.781E-09	1.741E-09	1.704E-09	1.671E-09	1.641E-09
eu152	1.588E-06	1.604E-06	1.617E-06	1.628E-06	1.638E-06	1.646E-06	1.652E-06	1.657E-06	1.660E-06	1.662E-06	1.663E-06
eu152m	0.000E+00	1.610E-09	1.594E-09	1.577E-09	1.561E-09	1.544E-09	1.528E-09	1.511E-09	1.495E-09	1.479E-09	1.463E-09
eu153	5.780E-01	5.704E-01	5.630E-01	5.556E-01	5.484E-01	5.412E-01	5.340E-01	5.270E-01	5.200E-01	5.131E-01	5.063E-01
eu154	1.038E-01	1.049E-01	1.058E-01	1.065E-01	1.071E-01	1.076E-01	1.079E-01	1.081E-01	1.082E-01	1.082E-01	1.081E-01
eu155	2.018E-02	2.063E-02	2.103E-02	2.137E-02	2.165E-02	2.189E-02	2.209E-02	2.226E-02	2.239E-02	2.248E-02	2.255E-02
eu156	3.051E-04	3.021E-03	3.636E-03	3.819E-03	3.908E-03	3.971E-03	4.024E-03	4.068E-03	4.106E-03	4.137E-03	4.163E-03
gd152	1.910E-02	1.809E-02	1.712E-02	1.621E-02	1.534E-02	1.452E-02	1.374E-02	1.300E-02	1.230E-02	1.163E-02	1.100E-02
gd153	8.645E-03	8.796E-03	8.885E-03	8.918E-03	8.903E-03	8.848E-03	8.757E-03	8.637E-03	8.491E-03	8.324E-03	8.140E-03
gd154	9.108E+00	9.079E+00	9.051E+00	9.022E+00	8.993E+00	8.965E+00	8.936E+00	8.908E+00	8.879E+00	8.851E+00	8.823E+00

gd155m	0.000E+00	7.451E-13	7.462E-13	7.469E-13	7.476E-13	7.483E-13	7.490E-13	7.497E-13	7.504E-13	7.511E-13	7.517E-13	
gd155	5.150E-02	5.095E-02	5.059E-02	5.032E-02	5.010E-02	4.991E-02	4.974E-02	4.958E-02	4.942E-02	4.926E-02	4.910E-02	
gd156	1.964E+02	1.963E+02	1.962E+02	1.961E+02	1.960E+02	1.959E+02	1.958E+02	1.957E+02	1.957E+02	1.956E+02	1.955E+02	
gd157	5.102E-02	5.084E-02	5.080E-02	5.078E-02	5.075E-02	5.073E-02	5.070E-02	5.068E-02	5.066E-02	5.063E-02	5.061E-02	
gd158	2.390E+02	2.390E+02	2.391E+02	2.391E+02	2.391E+02	2.392E+02	2.392E+02	2.392E+02	2.393E+02	2.393E+02	2.394E+02	
gd159	4.610E-22	3.037E-03	3.048E-03	3.058E-03	3.067E-03	3.076E-03	3.085E-03	3.094E-03	3.103E-03	3.112E-03	3.121E-03	
gd160	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.199E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	1.198E+02	
gd161	0.000E+00	1.041E-06	1.044E-06	1.047E-06	1.049E-06	1.052E-06	1.054E-06	1.057E-06	1.059E-06	1.062E-06	1.065E-06	
gd162	0.000E+00	1.440E-10	1.449E-10	1.457E-10	1.464E-10	1.471E-10	1.479E-10	1.486E-10	1.493E-10	1.501E-10	1.508E-10	
tb157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
tb159	5.823E+00	5.892E+00	5.964E+00	6.037E+00	6.109E+00	6.181E+00	6.253E+00	6.326E+00	6.398E+00	6.470E+00	6.542E+00	
tb160	2.796E-02	3.873E-02	4.660E-02	5.243E-02	5.682E-02	6.020E-02	6.286E-02	6.502E-02	6.683E-02	6.840E-02	6.979E-02	
tb161	1.796E-05	2.913E-03	3.052E-03	3.094E-03	3.125E-03	3.151E-03	3.173E-03	3.193E-03	3.210E-03	3.226E-03	3.241E-03	
tb162	0.000E+00	1.330E-10	1.339E-10	1.346E-10	1.353E-10	1.359E-10	1.366E-10	1.373E-10	1.380E-10	1.386E-10	1.393E-10	
dy156	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
dy157	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
dy158	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
dy159	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
dy160	5.817E-01	5.850E-01	5.914E-01	5.998E-01	6.098E-01	6.210E-01	6.329E-01	6.455E-01	6.586E-01	6.719E-01	6.856E-01	
dy161	5.576E-01	5.626E-01	5.705E-01	5.785E-01	5.867E-01	5.949E-01	6.032E-01	6.116E-01	6.201E-01	6.286E-01	6.372E-01	
dy162	2.438E-01	2.493E-01	2.549E-01	2.605E-01	2.662E-01	2.719E-01	2.777E-01	2.836E-01	2.895E-01	2.954E-01	3.014E-01	
dy163	1.068E-01	1.104E-01	1.140E-01	1.178E-01	1.216E-01	1.255E-01	1.295E-01	1.335E-01	1.376E-01	1.418E-01	1.461E-01	
dy164	1.675E-02	1.744E-02	1.815E-02	1.888E-02	1.962E-02	2.039E-02	2.118E-02	2.198E-02	2.281E-02	2.366E-02	2.453E-02	
dy165	0.000E+00	3.251E-06	3.395E-06	3.540E-06	3.690E-06	3.844E-06	4.003E-06	4.166E-06	4.334E-06	4.507E-06	4.684E-06	
dy165m	0.000E+00	1.857E-08	1.939E-08	2.022E-08	2.108E-08	2.196E-08	2.286E-08	2.379E-08	2.475E-08	2.573E-08	2.674E-08	
dy166	4.327E-12	1.491E-07	1.564E-07	1.635E-07	1.709E-07	1.785E-07	1.863E-07	1.944E-07	2.027E-07	2.113E-07	2.202E-07	
ho163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
ho165	1.276E-02	1.347E-02	1.422E-02	1.500E-02	1.581E-02	1.666E-02	1.754E-02	1.845E-02	1.939E-02	2.038E-02	2.140E-02	
ho166	2.116E-12	3.909E-06	4.140E-06	4.377E-06	4.625E-06	4.884E-06	5.153E-06	5.434E-06	5.727E-06	6.031E-06	6.348E-06	
ho166m	4.549E-05	4.877E-05	5.225E-05	5.592E-05	5.981E-05	6.392E-05	6.825E-05	7.283E-05	7.765E-05	8.273E-05	8.808E-05	
er162	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
er163	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
er164	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
er165	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
er166	1.142E-03	1.218E-03	1.303E-03	1.393E-03	1.488E-03	1.588E-03	1.693E-03	1.805E-03	1.922E-03	2.045E-03	2.175E-03	
er167	1.459E-05	1.576E-05	1.701E-05	1.833E-05	1.975E-05	2.125E-05	2.285E-05	2.455E-05	2.635E-05	2.826E-05	3.028E-05	
er167m	0.000E+00	9.700E-13	1.041E-12	1.115E-12	1.194E-12	1.278E-12	1.366E-12	1.460E-12	1.559E-12	1.663E-12	1.773E-12	
er168	8.591E-06	9.427E-06	1.033E-05	1.131E-05	1.237E-05	1.351E-05	1.474E-05	1.606E-05	1.749E-05	1.903E-05	2.068E-05	

case 6 light elements page 110
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
er169	3.137E-11	1.493E-09	1.754E-09	1.935E-09	2.122E-09	2.325E-09	2.545E-09	2.782E-09	3.038E-09	3.314E-09	3.611E-09
er170	5.501E-12	5.889E-12	6.384E-12	6.987E-12	7.700E-12	8.528E-12	9.476E-12	1.055E-11	1.176E-11	1.312E-11	1.464E-11
er171	0.000E+00	2.566E-17	2.791E-17	3.062E-17	3.383E-17	3.756E-17	4.184E-17	4.671E-17	5.221E-17	5.839E-17	6.530E-17
er172	4.733E-28	1.129E-20	1.232E-20	1.355E-20	1.501E-20	1.671E-20	1.866E-20	2.089E-20	2.340E-20	2.624E-20	2.941E-20
totals	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05	1.561E+05
flux	1.264E+13	1.269E+13	1.272E+13	1.275E+13	1.278E+13	1.282E+13	1.285E+13	1.288E+13	1.291E+13	1.294E+13	

case 6 actinides page 111
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
he 4	9.036E-02	9.448E-02	9.922E-02	1.045E-01	1.102E-01	1.164E-01	1.229E-01	1.298E-01	1.369E-01	1.443E-01	1.519E-01
th226	2.019E-17	1.042E-16	1.332E-16	1.450E-16	1.514E-16	1.562E-16	1.607E-16	1.652E-16	1.697E-16	1.743E-16	1.791E-16
th227	2.411E-11	2.471E-11	2.532E-11	2.594E-11	2.659E-11	2.725E-11	2.793E-11	2.862E-11	2.933E-11	3.006E-11	3.081E-11
th228	9.828E-07	1.004E-06	1.025E-06	1.047E-06	1.069E-06	1.092E-06	1.116E-06	1.141E-06	1.166E-06	1.192E-06	1.219E-06
th229	2.773E-08	3.002E-08	3.236E-08	3.475E-08	3.720E-08	3.971E-08	4.227E-08	4.489E-08	4.758E-08	5.032E-08	5.313E-08
th230	4.573E-04	4.593E-04	4.611E-04	4.629E-04	4.647E-04	4.663E-04	4.679E-04	4.694E-04	4.709E-04	4.722E-04	4.735E-04
th231	6.602E-09	2.481E-07	2.498E-07	2.512E-07	2.527E-07	2.541E-07	2.555E-07	2.568E-07	2.581E-07	2.594E-07	2.607E-07
th232	8.096E-05	8.244E-05	8.393E-05	8.543E-05	8.694E-05	8.845E-05	8.998E-05	9.150E-05	9.304E-05	9.458E-05	9.613E-05
th233	0.000E+00	4.217E-11	4.308E-11	4.396E-11	4.485E-11	4.575E-11	4.666E-11	4.757E-11	4.849E-11	4.942E-11	5.035E-11
th234	2.643E-06	2.643E-06	2.642E-06	2.641E-06	2.641E-06	2.640E-06	2.639E-06	2.639E-06	2.638E-06	2.637E-06	2.637E-06
pa231	1.458E-04	1.498E-04	1.540E-04	1.582E-04	1.624E-04	1.666E-04	1.708E-04	1.750E-04	1.792E-04	1.833E-04	1.875E-04
pa232	4.988E-19	7.492E-08	7.729E-08	7.962E-08	8.195E-08	8.428E-08	8.662E-08	8.897E-08	9.131E-08	9.366E-08	9.601E-08
pa233	1.675E-06	1.712E-06	1.741E-06	1.769E-06	1.796E-06	1.823E-06	1.850E-06	1.876E-06	1.903E-06	1.930E-06	1.957E-06
pa234m	8.911E-11	8.931E-11	8.929E-11	8.928E-11	8.926E-11	8.924E-11	8.922E-11	8.920E-11	8.918E-11	8.917E-11	8.915E-11
pa234	3.980E-11	1.069E-10	1.083E-10	1.096E-10	1.108E-10	1.120E-10	1.133E-10	1.145E-10	1.158E-10	1.170E-10	1.183E-10
pa235	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
u230	1.990E-14	1.028E-13	1.314E-13	1.429E-13	1.493E-13	1.541E-13	1.585E-13	1.629E-13	1.673E-13	1.719E-13	1.766E-13

u231	6.514E-16	2.514E-12	2.589E-12	2.656E-12	2.727E-12	2.799E-12	2.874E-12	2.952E-12	3.032E-12	3.114E-12	3.199E-12	
u232	6.089E-05	6.223E-05	6.369E-05	6.521E-05	6.678E-05	6.841E-05	7.009E-05	7.182E-05	7.360E-05	7.544E-05	7.732E-05	
u233	2.701E-04	2.714E-04	2.726E-04	2.739E-04	2.751E-04	2.763E-04	2.775E-04	2.787E-04	2.798E-04	2.810E-04	2.821E-04	
u234	2.800E+01	2.785E+01	2.771E+01	2.757E+01	2.742E+01	2.728E+01	2.714E+01	2.700E+01	2.686E+01	2.673E+01	2.659E+01	
u235	1.624E+03	1.600E+03	1.576E+03	1.553E+03	1.530E+03	1.508E+03	1.485E+03	1.463E+03	1.441E+03	1.420E+03	1.398E+03	
u236	5.561E+02	5.595E+02	5.629E+02	5.661E+02	5.694E+02	5.725E+02	5.757E+02	5.787E+02	5.817E+02	5.846E+02	5.875E+02	
u237	1.806E-03	3.291E-01	3.410E-01	3.438E-01	3.463E-01	3.487E-01	3.512E-01	3.536E-01	3.560E-01	3.583E-01	3.607E-01	
u238	1.820E+05	1.820E+05	1.819E+05	1.819E+05	1.819E+05	1.818E+05	1.818E+05	1.817E+05	1.817E+05	1.816E+05	1.816E+05	
u239	0.000E+00	2.734E-02	2.742E-02	2.748E-02	2.755E-02	2.761E-02	2.768E-02	2.774E-02	2.780E-02	2.786E-02	2.792E-02	
u240	2.378E-22	2.506E-22	2.648E-22	2.807E-22	2.984E-22	3.180E-22	3.398E-22	3.640E-22	3.907E-22	4.202E-22	4.528E-22	
u241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
np235	2.628E-07	2.871E-07	3.106E-07	3.334E-07	3.556E-07	3.772E-07	3.982E-07	4.187E-07	4.388E-07	4.583E-07	4.775E-07	
np236m	4.489E-23	1.616E-07	1.645E-07	1.674E-07	1.703E-07	1.732E-07	1.761E-07	1.790E-07	1.819E-07	1.849E-07	1.878E-07	
np236	4.560E-05	4.704E-05	4.851E-05	5.001E-05	5.153E-05	5.307E-05	5.464E-05	5.624E-05	5.786E-05	5.951E-05	6.119E-05	
np237	4.923E+01	4.965E+01	5.038E+01	5.113E+01	5.188E+01	5.262E+01	5.337E+01	5.412E+01	5.486E+01	5.561E+01	5.636E+01	
np238	7.668E-08	4.065E-02	4.139E-02	4.211E-02	4.283E-02	4.356E-02	4.429E-02	4.502E-02	4.576E-02	4.650E-02	4.724E-02	
np239	9.836E-06	3.949E+00	3.961E+00	3.970E+00	3.979E+00	3.989E+00	3.998E+00	4.007E+00	4.016E+00	4.025E+00	4.034E+00	
np240m	2.030E-24	2.139E-24	2.260E-24	2.396E-24	2.547E-24	2.714E-24	2.900E-24	3.106E-24	3.334E-24	3.586E-24	3.865E-24	
np240	2.088E-26	4.136E-05	4.163E-05	4.183E-05	4.203E-05	4.224E-05	4.244E-05	4.265E-05	4.285E-05	4.305E-05	4.325E-05	
np241	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
pu236	2.929E-05	3.050E-05	3.180E-05	3.309E-05	3.440E-05	3.570E-05	3.701E-05	3.833E-05	3.965E-05	4.098E-05	4.231E-05	
pu237	3.520E-06	6.639E-06	8.626E-06	9.956E-06	1.091E-05	1.165E-05	1.228E-05	1.284E-05	1.337E-05	1.389E-05	1.441E-05	
pu238	1.584E+01	1.630E+01	1.684E+01	1.742E+01	1.802E+01	1.865E+01	1.930E+01	1.996E+01	2.065E+01	2.135E+01	2.206E+01	
pu239	8.769E+02	8.747E+02	8.764E+02	8.780E+02	8.796E+02	8.811E+02	8.825E+02	8.839E+02	8.852E+02	8.865E+02	8.877E+02	
pu240	3.526E+02	3.570E+02	3.614E+02	3.657E+02	3.699E+02	3.740E+02	3.781E+02	3.821E+02	3.860E+02	3.898E+02	3.936E+02	
pu241	1.566E+02	1.590E+02	1.614E+02	1.638E+02	1.662E+02	1.687E+02	1.711E+02	1.736E+02	1.760E+02	1.785E+02	1.809E+02	
pu242	5.461E+01	5.607E+01	5.757E+01	5.908E+01	6.061E+01	6.216E+01	6.373E+01	6.532E+01	6.693E+01	6.855E+01	7.020E+01	
pu243	2.011E-15	3.981E-03	4.100E-03	4.219E-03	4.339E-03	4.461E-03	4.586E-03	4.712E-03	4.840E-03	4.970E-03	5.102E-03	
pu244	1.204E-11	1.269E-11	1.341E-11	1.421E-11	1.511E-11	1.610E-11	1.721E-11	1.843E-11	1.978E-11	2.128E-11	2.293E-11	
pu245	0.000E+00	6.782E-18	7.191E-18	7.642E-18	8.144E-18	8.702E-18	9.322E-18	1.001E-17	1.077E-17	1.161E-17	1.255E-17	
pu246	3.356E-21	1.663E-20	1.926E-20	2.079E-20	2.234E-20	2.405E-20	2.596E-20	2.808E-20	3.043E-20	3.304E-20	3.593E-20	
am239	0.000E+00	4.524E-10	4.543E-10	4.560E-10	4.579E-10	4.600E-10	4.622E-10	4.645E-10	4.670E-10	4.696E-10	4.723E-10	
am240	2.221E-14	2.075E-07	2.084E-07	2.092E-07	2.101E-07	2.110E-07	2.120E-07	2.131E-07	2.143E-07	2.155E-07	2.167E-07	

case 6 actinides page 112
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
am241	2.471E+01	2.472E+01	2.475E+01	2.478E+01	2.482E+01	2.486E+01	2.492E+01	2.498E+01	2.505E+01	2.513E+01	2.522E+01
am242m	3.973E-01	4.212E-01	4.405E-01	4.561E-01	4.688E-01	4.792E-01	4.877E-01	4.948E-01	5.008E-01	5.058E-01	5.103E-01
am242	5.126E-06	1.635E-02	1.642E-02	1.648E-02	1.655E-02	1.663E-02	1.671E-02	1.679E-02	1.688E-02	1.698E-02	1.707E-02
am243	8.949E+00	9.305E+00	9.675E+00	1.005E+01	1.044E+01	1.084E+01	1.125E+01	1.167E+01	1.209E+01	1.253E+01	1.298E+01
am244m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
am244	0.000E+00	2.015E-03	2.102E-03	2.190E-03	2.280E-03	2.373E-03	2.469E-03	2.567E-03	2.667E-03	2.770E-03	2.876E-03
am245	8.013E-17	9.943E-17	1.188E-16	1.395E-16	1.619E-16	1.860E-16	2.122E-16	2.407E-16	2.717E-16	3.054E-16	3.421E-16
am246	8.389E-24	4.154E-23	4.813E-23	5.195E-23	5.582E-23	6.011E-23	6.487E-23	7.016E-23	7.604E-23	8.256E-23	8.979E-23
cm241	7.648E-09	1.874E-08	2.657E-08	3.252E-08	3.729E-08	4.127E-08	4.466E-08	4.761E-08	5.020E-08	5.249E-08	5.454E-08
cm242	1.361E+00	1.613E+00	1.843E+00	2.043E+00	2.217E+00	2.369E+00	2.502E+00	2.619E+00	2.721E+00	2.812E+00	2.894E+00
cm243	2.734E-02	2.864E-02	3.026E-02	3.214E-02	3.425E-02	3.652E-02	3.894E-02	4.147E-02	4.409E-02	4.678E-02	4.951E-02
cm244	1.707E+00	1.806E+00	1.911E+00	2.020E+00	2.134E+00	2.252E+00	2.375E+00	2.502E+00	2.634E+00	2.771E+00	2.913E+00
cm245	4.579E-02	4.865E-02	5.169E-02	5.489E-02	5.827E-02	6.182E-02	6.557E-02	6.950E-02	7.362E-02	7.794E-02	8.246E-02
cm246	4.751E-03	5.142E-03	5.559E-03	6.003E-03	6.475E-03	6.978E-03	7.512E-03	8.079E-03	8.682E-03	9.322E-03	1.000E-02
cm247	5.786E-05	6.357E-05	6.975E-05	7.642E-05	8.361E-05	9.136E-05	9.970E-05	1.087E-04	1.183E-04	1.286E-04	1.397E-04
cm248	3.487E-06	3.896E-06	4.345E-06	4.840E-06	5.382E-06	5.977E-06	6.627E-06	7.338E-06	8.115E-06	8.961E-06	9.883E-06
cm249	3.619E-19	1.453E-11	1.627E-11	1.816E-11	2.025E-11	2.255E-11	2.506E-11	2.782E-11	3.084E-11	3.414E-11	3.775E-11
cm250	7.220E-15	7.928E-15	8.725E-15	9.619E-15	1.062E-14	1.173E-14	1.298E-14	1.436E-14	1.591E-14	1.762E-14	1.952E-14
cm251	0.000E+00	1.413E-22	1.560E-22	1.724E-22	1.908E-22	2.114E-22	2.344E-22	2.601E-22	2.887E-22	3.205E-22	3.560E-22
totals	1.858E+05	1.857E+05	1.857E+05	1.856E+05	1.856E+05	1.855E+05	1.855E+05	1.854E+05	1.854E+05	1.853E+05	1.853E+05
flux	1.264E+13	1.269E+13	1.272E+13	1.275E+13	1.278E+13	1.282E+13	1.285E+13	1.288E+13	1.291E+13	1.294E+13	

case 6 fission products page 113
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
h 3	5.427E-03	5.488E-03	5.547E-03	5.607E-03	5.667E-03	5.726E-03	5.785E-03	5.843E-03	5.902E-03	5.960E-03	6.018E-03
li 6	2.855E-05	2.864E-05	2.873E-05	2.882E-05	2.891E-05	2.899E-05	2.906E-05	2.914E-05	2.921E-05	2.928E-05	2.934E-05

li 7	1.315E-06	1.331E-06	1.347E-06	1.363E-06	1.379E-06	1.395E-06	1.410E-06	1.426E-06	1.442E-06	1.458E-06	1.474E-06	
be 9	2.532E-06	2.563E-06	2.593E-06	2.624E-06	2.655E-06	2.685E-06	2.716E-06	2.747E-06	2.777E-06	2.808E-06	2.838E-06	
be 10	1.689E-05	1.709E-05	1.730E-05	1.750E-05	1.771E-05	1.791E-05	1.812E-05	1.832E-05	1.852E-05	1.873E-05	1.893E-05	
ga 69	3.940E-08	4.005E-08	4.072E-08	4.139E-08	4.206E-08	4.273E-08	4.341E-08	4.409E-08	4.477E-08	4.545E-08	4.613E-08	
ga 70	0.000E+00	1.593E-14	1.601E-14	1.608E-14	1.614E-14	1.620E-14	1.627E-14	1.633E-14	1.639E-14	1.644E-14	1.650E-14	
ge 70	1.474E-09	1.500E-09	1.526E-09	1.552E-09	1.579E-09	1.605E-09	1.632E-09	1.659E-09	1.686E-09	1.713E-09	1.740E-09	
ga 71	1.021E-05	1.037E-05	1.054E-05	1.071E-05	1.088E-05	1.105E-05	1.122E-05	1.139E-05	1.156E-05	1.173E-05	1.191E-05	
ge 71	7.469E-15	1.652E-13	1.851E-13	1.883E-13	1.894E-13	1.902E-13	1.910E-13	1.918E-13	1.926E-13	1.933E-13	1.941E-13	
ge 71m	0.000E+00	1.929E-21	1.939E-21	1.947E-21	1.956E-21	1.964E-21	1.972E-21	1.980E-21	1.988E-21	1.996E-21	2.004E-21	
ga 72	8.394E-15	2.291E-07	2.297E-07	2.302E-07	2.307E-07	2.312E-07	2.316E-07	2.321E-07	2.325E-07	2.330E-07	2.334E-07	
ge 72	6.401E-04	6.485E-04	6.580E-04	6.674E-04	6.769E-04	6.864E-04	6.959E-04	7.054E-04	7.150E-04	7.245E-04	7.341E-04	
ga 73	0.000E+00	2.198E-07	2.201E-07	2.201E-07	2.202E-07	2.203E-07	2.204E-07	2.204E-07	2.205E-07	2.206E-07	2.206E-07	
ge 73	1.917E-03	1.942E-03	1.966E-03	1.991E-03	2.015E-03	2.040E-03	2.065E-03	2.089E-03	2.114E-03	2.138E-03	2.163E-03	
ge 73m	0.000E+00	6.186E-12	6.193E-12	6.196E-12	6.198E-12	6.200E-12	6.202E-12	6.204E-12	6.206E-12	6.208E-12	6.209E-12	
ga 74	0.000E+00	4.638E-09	4.639E-09	4.637E-09	4.634E-09	4.632E-09	4.630E-09	4.627E-09	4.624E-09	4.622E-09	4.619E-09	
ge 74	1.630E-03	1.652E-03	1.674E-03	1.695E-03	1.717E-03	1.739E-03	1.760E-03	1.782E-03	1.804E-03	1.825E-03	1.847E-03	
ga 75	0.000E+00	1.068E-08	1.066E-08	1.064E-08	1.062E-08	1.060E-08	1.058E-08	1.055E-08	1.053E-08	1.051E-08	1.049E-08	
ge 75	0.000E+00	4.241E-07	4.236E-07	4.227E-07	4.219E-07	4.210E-07	4.202E-07	4.194E-07	4.185E-07	4.177E-07	4.168E-07	
ge 75m	0.000E+00	2.212E-10	2.210E-10	2.206E-10	2.203E-10	2.199E-10	2.196E-10	2.192E-10	2.189E-10	2.185E-10	2.181E-10	
as 75	1.503E-02	1.520E-02	1.537E-02	1.554E-02	1.570E-02	1.587E-02	1.604E-02	1.621E-02	1.637E-02	1.654E-02	1.671E-02	
ga 76	0.000E+00	7.312E-09	7.291E-09	7.266E-09	7.240E-09	7.215E-09	7.190E-09	7.165E-09	7.141E-09	7.116E-09	7.092E-09	
ge 76	4.537E-02	4.586E-02	4.635E-02	4.683E-02	4.732E-02	4.780E-02	4.828E-02	4.876E-02	4.924E-02	4.972E-02	5.019E-02	
as 76	1.938E-20	4.010E-07	4.067E-07	4.122E-07	4.177E-07	4.233E-07	4.288E-07	4.343E-07	4.398E-07	4.454E-07	4.509E-07	
se 76	3.240E-04	3.317E-04	3.400E-04	3.484E-04	3.568E-04	3.654E-04	3.741E-04	3.828E-04	3.917E-04	4.007E-04	4.098E-04	
ga 77	0.000E+00	6.327E-09	6.313E-09	6.295E-09	6.277E-09	6.260E-09	6.242E-09	6.225E-09	6.207E-09	6.190E-09	6.173E-09	
ge 77	0.000E+00	7.661E-06	7.649E-06	7.632E-06	7.615E-06	7.598E-06	7.581E-06	7.563E-06	7.546E-06	7.529E-06	7.512E-06	
ge 77m	0.000E+00	2.603E-08	2.597E-08	2.590E-08	2.583E-08	2.575E-08	2.568E-08	2.561E-08	2.554E-08	2.547E-08	2.540E-08	
as 77	7.938E-14	8.083E-05	8.067E-05	8.046E-05	8.025E-05	8.004E-05	7.984E-05	7.963E-05	7.942E-05	7.922E-05	7.901E-05	
se 77	1.036E-01	1.046E-01	1.057E-01	1.068E-01	1.079E-01	1.089E-01	1.100E-01	1.111E-01	1.122E-01	1.132E-01	1.143E-01	
se 77m	3.171E-20	3.368E-11	3.366E-11	3.361E-11	3.357E-11	3.353E-11	3.348E-11	3.344E-11	3.340E-11	3.336E-11	3.332E-11	
ga 78	0.000E+00	5.642E-09	5.637E-09	5.628E-09	5.620E-09	5.611E-09	5.602E-09	5.593E-09	5.585E-09	5.576E-09	5.568E-09	
ge 78	0.000E+00	1.011E-05	1.010E-05	1.009E-05	1.009E-05	1.008E-05	1.007E-05	1.006E-05	1.005E-05	1.004E-05	1.003E-05	
as 78	0.000E+00	1.056E-05	1.056E-05	1.055E-05	1.055E-05	1.054E-05	1.053E-05	1.052E-05	1.051E-05	1.050E-05	1.049E-05	
se 78	3.340E-01	3.382E-01	3.423E-01	3.465E-01	3.506E-01	3.548E-01	3.589E-01	3.630E-01	3.672E-01	3.713E-01	3.755E-01	
ga 79	0.000E+00	3.182E-09	3.170E-09	3.157E-09	3.143E-09	3.130E-09	3.117E-09	3.103E-09	3.090E-09	3.078E-09	3.065E-09	
ge 79	0.000E+00	6.274E-08	6.267E-08	6.256E-08	6.245E-08	6.234E-08	6.223E-08	6.212E-08	6.201E-08	6.190E-08	6.179E-08	
as 79	0.000E+00	1.936E-06	1.935E-06	1.931E-06	1.928E-06	1.925E-06	1.922E-06	1.919E-06	1.916E-06	1.913E-06	1.910E-06	
se 79	6.358E-01	6.432E-01	6.507E-01	6.581E-01	6.655E-01	6.729E-01	6.803E-01	6.877E-01	6.951E-01	7.024E-01	7.098E-01	

sc 79m 0.000E+00 8.332E-07 8.324E-07 8.311E-07 8.298E-07 8.285E-07 8.272E-07 8.258E-07 8.245E-07 8.232E-07 8.219E-07
br 79 5.992E-05 6.112E-05 6.234E-05 6.358E-05 6.482E-05 6.608E-05 6.736E-05 6.864E-05 6.994E-05 7.125E-05 7.257E-05
br 79m 0.000E+00 6.814E-15 6.842E-15 6.864E-15 6.886E-15 6.908E-15 6.929E-15 6.949E-15 6.969E-15 6.989E-15 7.008E-15
kr 79 1.556E-24 1.708E-14 1.736E-14 1.762E-14 1.789E-14 1.816E-14 1.844E-14 1.871E-14 1.899E-14 1.927E-14 1.955E-14
ga 80 0.000E+00 1.511E-09 1.510E-09 1.508E-09 1.505E-09 1.503E-09 1.501E-09 1.499E-09 1.497E-09 1.494E-09 1.492E-09
ge 80 0.000E+00 2.355E-07 2.349E-07 2.342E-07 2.334E-07 2.327E-07 2.320E-07 2.313E-07 2.305E-07 2.298E-07 2.291E-07
as 80 0.000E+00 1.428E-07 1.425E-07 1.421E-07 1.418E-07 1.414E-07 1.410E-07 1.407E-07 1.403E-07 1.399E-07 1.396E-07
se 80 1.763E+00 1.783E+00 1.803E+00 1.822E+00 1.842E+00 1.862E+00 1.881E+00 1.901E+00 1.920E+00 1.940E+00 1.959E+00
br 80 0.000E+00 1.110E-10 1.122E-10 1.134E-10 1.146E-10 1.158E-10 1.171E-10 1.183E-10 1.195E-10 1.208E-10 1.220E-10
br 80m 0.000E+00 9.454E-10 9.526E-10 9.591E-10 9.656E-10 9.721E-10 9.786E-10 9.851E-10 9.916E-10 9.981E-10 1.005E-09

case 6 fission products page 114
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
kr 80	8.180E-06	8.372E-06	8.567E-06	8.764E-06	8.962E-06	9.163E-06	9.366E-06	9.571E-06	9.778E-06	9.988E-06	1.020E-05
ga 81	0.000E+00	7.063E-10	7.055E-10	7.042E-10	7.030E-10	7.018E-10	7.005E-10	6.993E-10	6.981E-10	6.970E-10	6.958E-10
ge 81	0.000E+00	6.473E-08	6.457E-08	6.436E-08	6.416E-08	6.396E-08	6.377E-08	6.357E-08	6.337E-08	6.318E-08	6.299E-08
as 81	0.000E+00	4.594E-07	4.586E-07	4.576E-07	4.566E-07	4.555E-07	4.545E-07	4.534E-07	4.524E-07	4.514E-07	4.504E-07
se 81	0.000E+00	1.611E-05	1.609E-05	1.605E-05	1.602E-05	1.598E-05	1.595E-05	1.591E-05	1.588E-05	1.584E-05	1.581E-05
se 81m	0.000E+00	3.647E-06	3.644E-06	3.639E-06	3.633E-06	3.628E-06	3.622E-06	3.617E-06	3.611E-06	3.605E-06	3.600E-06
br 81	2.626E+00	2.655E+00	2.684E+00	2.713E+00	2.742E+00	2.771E+00	2.800E+00	2.829E+00	2.857E+00	2.886E+00	2.914E+00
kr 81	4.115E-07	4.228E-07	4.344E-07	4.462E-07	4.582E-07	4.704E-07	4.829E-07	4.957E-07	5.086E-07	5.219E-07	5.354E-07
kr 81m	0.000E+00	2.928E-14	3.001E-14	3.073E-14	3.145E-14	3.219E-14	3.294E-14	3.369E-14	3.445E-14	3.523E-14	3.601E-14
ga 82	0.000E+00	2.051E-10	2.040E-10	2.027E-10	2.015E-10	2.002E-10	1.990E-10	1.978E-10	1.966E-10	1.954E-10	1.942E-10
ge 82	0.000E+00	3.726E-08	3.714E-08	3.700E-08	3.686E-08	3.672E-08	3.658E-08	3.644E-08	3.631E-08	3.617E-08	3.604E-08
as 82	0.000E+00	2.545E-07	2.538E-07	2.529E-07	2.519E-07	2.510E-07	2.501E-07	2.493E-07	2.484E-07	2.475E-07	2.466E-07
as 82m	0.000E+00	7.100E-08	7.081E-08	7.058E-08	7.034E-08	7.011E-08	6.988E-08	6.966E-08	6.943E-08	6.920E-08	6.898E-08
se 82	4.233E+00	4.278E+00	4.324E+00	4.369E+00	4.414E+00	4.459E+00	4.504E+00	4.549E+00	4.594E+00	4.638E+00	4.683E+00
br 82	1.033E-14	9.420E-05	9.539E-05	9.651E-05	9.763E-05	9.875E-05	9.987E-05	1.010E-04	1.021E-04	1.032E-04	1.043E-04
br 82m	0.000E+00	2.241E-07	2.272E-07	2.301E-07	2.330E-07	2.359E-07	2.388E-07	2.418E-07	2.447E-07	2.476E-07	2.505E-07
kr 82	6.271E-02	6.406E-02	6.553E-02	6.701E-02	6.851E-02	7.002E-02	7.155E-02	7.309E-02	7.465E-02	7.623E-02	7.782E-02
ga 83	0.000E+00	1.404E-11	1.405E-11	1.406E-11	1.406E-11	1.406E-11	1.406E-11	1.406E-11	1.407E-11	1.407E-11	1.408E-11
ge 83	0.000E+00	7.078E-09	7.065E-09	7.047E-09	7.030E-09	7.013E-09	6.996E-09	6.979E-09	6.963E-09	6.947E-09	6.931E-09
as 83	0.000E+00	2.861E-07	2.852E-07	2.841E-07	2.830E-07	2.819E-07	2.808E-07	2.797E-07	2.786E-07	2.776E-07	2.765E-07
se 83	0.000E+00	2.221E-05	2.216E-05	2.209E-05	2.203E-05	2.196E-05	2.190E-05	2.184E-05	2.177E-05	2.171E-05	2.165E-05

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se 83m  0.000E+00 1.207E-06 1.203E-06 1.199E-06 1.194E-06 1.190E-06 1.185E-06 1.181E-06 1.177E-06 1.172E-06 1.168E-06
br 83   0.000E+00 3.003E-04 2.994E-04 2.984E-04 2.974E-04 2.963E-04 2.953E-04 2.943E-04 2.933E-04 2.924E-04 2.914E-04
kr 83   5.666E+00 5.709E+00 5.753E+00 5.796E+00 5.838E+00 5.880E+00 5.921E+00 5.962E+00 6.003E+00 6.042E+00 6.082E+00
kr 83m  0.000E+00 2.289E-04 2.283E-04 2.275E-04 2.267E-04 2.260E-04 2.252E-04 2.244E-04 2.237E-04 2.229E-04 2.222E-04
ga 84   0.000E+00 3.085E-11 3.051E-11 3.015E-11 2.980E-11 2.944E-11 2.909E-11 2.874E-11 2.840E-11 2.806E-11 2.772E-11
ge 84   0.000E+00 2.978E-09 2.974E-09 2.968E-09 2.962E-09 2.956E-09 2.950E-09 2.944E-09 2.939E-09 2.933E-09 2.928E-09
as 84   0.000E+00 8.780E-08 8.756E-08 8.726E-08 8.697E-08 8.668E-08 8.640E-08 8.612E-08 8.585E-08 8.557E-08 8.530E-08
se 84   0.000E+00 1.212E-05 1.208E-05 1.203E-05 1.199E-05 1.194E-05 1.189E-05 1.185E-05 1.180E-05 1.176E-05 1.171E-05
br 84   0.000E+00 1.239E-04 1.235E-04 1.230E-04 1.225E-04 1.220E-04 1.216E-04 1.211E-04 1.206E-04 1.202E-04 1.197E-04
br 84m  0.000E+00 6.441E-07 6.427E-07 6.409E-07 6.390E-07 6.372E-07 6.354E-07 6.335E-07 6.317E-07 6.299E-07 6.281E-07
kr 84   1.471E+01 1.488E+01 1.505E+01 1.521E+01 1.538E+01 1.555E+01 1.572E+01 1.588E+01 1.605E+01 1.622E+01 1.638E+01
ga 85   0.000E+00 6.509E-14 6.521E-14 6.529E-14 6.536E-14 6.544E-14 6.552E-14 6.560E-14 6.568E-14 6.575E-14 6.583E-14
ge 85   0.000E+00 1.093E-10 1.092E-10 1.090E-10 1.089E-10 1.087E-10 1.086E-10 1.084E-10 1.083E-10 1.081E-10 1.080E-10
as 85   0.000E+00 1.856E-08 1.849E-08 1.841E-08 1.833E-08 1.825E-08 1.817E-08 1.809E-08 1.801E-08 1.794E-08 1.786E-08
se 85   0.000E+00 9.450E-07 9.411E-07 9.367E-07 9.323E-07 9.279E-07 9.236E-07 9.193E-07 9.150E-07 9.108E-07 9.066E-07
se 85m  0.000E+00 4.970E-07 4.950E-07 4.925E-07 4.902E-07 4.878E-07 4.854E-07 4.831E-07 4.808E-07 4.785E-07 4.762E-07
br 85   0.000E+00 1.251E-05 1.246E-05 1.241E-05 1.235E-05 1.230E-05 1.224E-05 1.219E-05 1.213E-05 1.208E-05 1.202E-05
kr 85   2.433E+00 2.451E+00 2.469E+00 2.487E+00 2.504E+00 2.522E+00 2.539E+00 2.556E+00 2.572E+00 2.589E+00 2.605E+00
kr 85m  0.000E+00 1.175E-03 1.170E-03 1.165E-03 1.160E-03 1.154E-03 1.149E-03 1.144E-03 1.139E-03 1.134E-03 1.129E-03
rb 85   1.270E+01 1.283E+01 1.297E+01 1.310E+01 1.323E+01 1.337E+01 1.350E+01 1.363E+01 1.376E+01 1.389E+01 1.403E+01
ge 86   0.000E+00 2.324E-11 2.323E-11 2.320E-11 2.317E-11 2.314E-11 2.312E-11 2.309E-11 2.306E-11 2.304E-11 2.301E-11
as 86   0.000E+00 4.609E-09 4.587E-09 4.562E-09 4.538E-09 4.514E-09 4.490E-09 4.466E-09 4.442E-09 4.419E-09 4.396E-09
se 86   0.000E+00 1.093E-06 1.088E-06 1.082E-06 1.077E-06 1.071E-06 1.065E-06 1.060E-06 1.054E-06 1.049E-06 1.044E-06
br 86   0.000E+00 4.887E-06 4.866E-06 4.842E-06 4.819E-06 4.795E-06 4.772E-06 4.749E-06 4.726E-06 4.703E-06 4.680E-06
br 86m  0.000E+00 9.554E-07 9.526E-07 9.492E-07 9.458E-07 9.424E-07 9.391E-07 9.357E-07 9.324E-07 9.291E-07 9.259E-07
kr 86   2.420E+01 2.444E+01 2.468E+01 2.492E+01 2.516E+01 2.540E+01 2.564E+01 2.587E+01 2.610E+01 2.634E+01 2.657E+01
rb 86   7.981E-05 5.000E-04 6.217E-04 6.613E-04 6.784E-04 6.893E-04 6.986E-04 7.074E-04 7.161E-04 7.248E-04 7.335E-04
rb 86m  0.000E+00 1.990E-09 2.017E-09 2.043E-09 2.069E-09 2.095E-09 2.121E-09 2.148E-09 2.174E-09 2.200E-09 2.226E-09
sr 86   3.276E-02 3.319E-02 3.393E-02 3.476E-02 3.562E-02 3.651E-02 3.740E-02 3.831E-02 3.923E-02 4.015E-02 4.109E-02

case 6                                                  fission products      page  115
power=  2.48mw, burnup=  4820.mwd, flux= 1.91E+13n/cm**2-sec

                          nuclide concentrations, grams
                          basis = fuel assembly (.1902 mtu)
      charge   34.8 d   69.6 d   104.4 d   139.2 d   174.0 d   208.8 d   243.6 d   278.4 d   313.2 d   348.0 d
ge 87   0.000E+00 9.160E-11 9.056E-11 8.946E-11 8.838E-11 8.730E-11 8.624E-11 8.518E-11 8.413E-11 8.309E-11 8.205E-11
as 87   0.000E+00 8.605E-10 8.536E-10 8.462E-10 8.389E-10 8.316E-10 8.244E-10 8.172E-10 8.101E-10 8.031E-10 7.962E-10
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se 87	0.000E+00	2.357E-07	2.345E-07	2.332E-07	2.320E-07	2.307E-07	2.295E-07	2.282E-07	2.270E-07	2.258E-07	2.246E-07	
br 87	0.000E+00	6.519E-06	6.491E-06	6.459E-06	6.428E-06	6.397E-06	6.366E-06	6.335E-06	6.305E-06	6.275E-06	6.245E-06	
kr 87	0.000E+00	6.819E-04	6.792E-04	6.760E-04	6.728E-04	6.696E-04	6.665E-04	6.634E-04	6.604E-04	6.573E-04	6.543E-04	
rb 87	3.157E+01	3.188E+01	3.220E+01	3.251E+01	3.282E+01	3.313E+01	3.344E+01	3.374E+01	3.405E+01	3.435E+01	3.465E+01	
sr 87	1.662E-04	1.705E-04	1.749E-04	1.794E-04	1.840E-04	1.887E-04	1.934E-04	1.983E-04	2.033E-04	2.083E-04	2.135E-04	
sr 87m	0.000E+00	1.722E-08	1.763E-08	1.808E-08	1.854E-08	1.902E-08	1.950E-08	2.000E-08	2.050E-08	2.100E-08	2.152E-08	
ge 88	0.000E+00	1.693E-13	1.683E-13	1.672E-13	1.660E-13	1.649E-13	1.638E-13	1.627E-13	1.616E-13	1.606E-13	1.595E-13	
as 88	0.000E+00	1.685E-10	1.669E-10	1.651E-10	1.633E-10	1.616E-10	1.599E-10	1.581E-10	1.564E-10	1.548E-10	1.531E-10	
se 88	0.000E+00	3.469E-08	3.456E-08	3.441E-08	3.426E-08	3.411E-08	3.396E-08	3.382E-08	3.367E-08	3.353E-08	3.339E-08	
br 88	0.000E+00	1.871E-06	1.862E-06	1.851E-06	1.841E-06	1.831E-06	1.821E-06	1.811E-06	1.801E-06	1.792E-06	1.782E-06	
kr 88	0.000E+00	2.129E-03	2.120E-03	2.109E-03	2.099E-03	2.088E-03	2.078E-03	2.068E-03	2.057E-03	2.047E-03	2.037E-03	
rb 88	0.000E+00	2.278E-04	2.268E-04	2.257E-04	2.246E-04	2.235E-04	2.224E-04	2.213E-04	2.202E-04	2.191E-04	2.181E-04	
sr 88	4.517E+01	4.562E+01	4.606E+01	4.650E+01	4.694E+01	4.738E+01	4.782E+01	4.825E+01	4.869E+01	4.912E+01	4.954E+01	
as 89	0.000E+00	3.245E-12	3.248E-12	3.248E-12	3.248E-12	3.248E-12	3.249E-12	3.249E-12	3.250E-12	3.250E-12	3.251E-12	
se 89	0.000E+00	3.379E-09	3.366E-09	3.352E-09	3.337E-09	3.323E-09	3.309E-09	3.295E-09	3.281E-09	3.267E-09	3.254E-09	
br 89	0.000E+00	3.508E-07	3.493E-07	3.476E-07	3.459E-07	3.442E-07	3.426E-07	3.409E-07	3.393E-07	3.377E-07	3.361E-07	
kr 89	0.000E+00	4.943E-05	4.919E-05	4.891E-05	4.865E-05	4.838E-05	4.811E-05	4.785E-05	4.759E-05	4.733E-05	4.708E-05	
rb 89	0.000E+00	2.564E-04	2.552E-04	2.538E-04	2.525E-04	2.512E-04	2.499E-04	2.486E-04	2.473E-04	2.460E-04	2.448E-04	
sr 89	4.705E-01	7.619E-01	9.408E-01	1.049E+00	1.114E+00	1.152E+00	1.173E+00	1.184E+00	1.188E+00	1.188E+00	1.186E+00	
y 89	5.997E+01	6.027E+01	6.067E+01	6.115E+01	6.166E+01	6.220E+01	6.276E+01	6.332E+01	6.388E+01	6.445E+01	6.501E+01	
y 89m	1.609E-10	2.631E-10	3.243E-10	3.614E-10	3.836E-10	3.965E-10	4.037E-10	4.074E-10	4.088E-10	4.089E-10	4.082E-10	
as 90	0.000E+00	2.455E-14	2.460E-14	2.464E-14	2.468E-14	2.472E-14	2.476E-14	2.480E-14	2.484E-14	2.488E-14	2.492E-14	
se 90	0.000E+00	7.971E-10	7.949E-10	7.923E-10	7.896E-10	7.870E-10	7.845E-10	7.819E-10	7.794E-10	7.769E-10	7.745E-10	
br 90	0.000E+00	8.562E-08	8.532E-08	8.496E-08	8.461E-08	8.426E-08	8.392E-08	8.358E-08	8.324E-08	8.290E-08	8.257E-08	
kr 90	0.000E+00	9.040E-06	8.994E-06	8.942E-06	8.891E-06	8.840E-06	8.789E-06	8.739E-06	8.690E-06	8.641E-06	8.592E-06	
rb 90	0.000E+00	3.973E-05	3.953E-05	3.931E-05	3.909E-05	3.888E-05	3.866E-05	3.845E-05	3.824E-05	3.803E-05	3.782E-05	
rb 90m	0.000E+00	2.178E-05	2.170E-05	2.161E-05	2.152E-05	2.143E-05	2.134E-05	2.125E-05	2.116E-05	2.107E-05	2.099E-05	
sr 90	6.578E+01	6.635E+01	6.691E+01	6.747E+01	6.802E+01	6.857E+01	6.911E+01	6.965E+01	7.018E+01	7.071E+01	7.123E+01	
y 90	1.710E-02	1.746E-02	1.761E-02	1.776E-02	1.791E-02	1.805E-02	1.819E-02	1.834E-02	1.848E-02	1.862E-02	1.876E-02	
y 90m	0.000E+00	1.082E-08	1.093E-08	1.104E-08	1.116E-08	1.129E-08	1.142E-08	1.155E-08	1.168E-08	1.181E-08	1.195E-08	
zr 90	8.110E+00	8.266E+00	8.425E+00	8.584E+00	8.745E+00	8.907E+00	9.071E+00	9.235E+00	9.401E+00	9.569E+00	9.737E+00	
zr 90m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sc 91	0.000E+00	5.330E-11	5.327E-11	5.320E-11	5.314E-11	5.308E-11	5.302E-11	5.296E-11	5.291E-11	5.285E-11	5.279E-11	
br 91	0.000E+00	8.662E-09	8.620E-09	8.572E-09	8.525E-09	8.479E-09	8.433E-09	8.387E-09	8.342E-09	8.298E-09	8.253E-09	
kr 91	0.000E+00	1.662E-06	1.654E-06	1.645E-06	1.635E-06	1.626E-06	1.617E-06	1.608E-06	1.599E-06	1.590E-06	1.582E-06	
rb 91	0.000E+00	2.054E-05	2.046E-05	2.036E-05	2.027E-05	2.017E-05	2.008E-05	1.999E-05	1.989E-05	1.980E-05	1.971E-05	
sr 91	0.000E+00	1.302E-02	1.297E-02	1.292E-02	1.286E-02	1.280E-02	1.275E-02	1.269E-02	1.264E-02	1.258E-02	1.253E-02	
y 91	7.948E-01	1.167E+00	1.420E+00	1.584E+00	1.690E+00	1.758E+00	1.800E+00	1.825E+00	1.839E+00	1.845E+00	1.846E+00	

y 91m	0.000E+00	6.574E-04	6.549E-04	6.520E-04	6.492E-04	6.463E-04	6.435E-04	6.407E-04	6.380E-04	6.352E-04	6.325E-04	
zr 91	7.757E+01	7.797E+01	7.851E+01	7.912E+01	7.980E+01	8.051E+01	8.124E+01	8.198E+01	8.273E+01	8.349E+01	8.425E+01	
nb 91	1.350E-10	1.372E-10	1.394E-10	1.416E-10	1.438E-10	1.460E-10	1.482E-10	1.504E-10	1.526E-10	1.548E-10	1.571E-10	
se 92	0.000E+00	2.830E-12	2.832E-12	2.832E-12	2.833E-12	2.833E-12	2.834E-12	2.835E-12	2.835E-12	2.836E-12	2.837E-12	
br 92	0.000E+00	9.250E-10	9.218E-10	9.180E-10	9.142E-10	9.105E-10	9.068E-10	9.032E-10	8.996E-10	8.961E-10	8.926E-10	
kr 92	0.000E+00	1.945E-07	1.937E-07	1.927E-07	1.917E-07	1.907E-07	1.898E-07	1.888E-07	1.879E-07	1.870E-07	1.860E-07	
rb 92	0.000E+00	1.422E-06	1.417E-06	1.411E-06	1.405E-06	1.399E-06	1.393E-06	1.387E-06	1.381E-06	1.375E-06	1.369E-06	
sr 92	0.000E+00	4.028E-03	4.017E-03	4.002E-03	3.987E-03	3.973E-03	3.959E-03	3.945E-03	3.931E-03	3.917E-03	3.903E-03	
y 92	0.000E+00	5.297E-03	5.282E-03	5.262E-03	5.243E-03	5.224E-03	5.205E-03	5.187E-03	5.168E-03	5.150E-03	5.132E-03	
zr 92	8.345E+01	8.431E+01	8.518E+01	8.605E+01	8.692E+01	8.778E+01	8.864E+01	8.950E+01	9.036E+01	9.121E+01	9.205E+01	

case 6 fission products page 116
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d	
nb 92	1.656E-08	1.682E-08	1.709E-08	1.736E-08	1.763E-08	1.790E-08	1.817E-08	1.844E-08	1.871E-08	1.898E-08	1.925E-08
se 93	0.000E+00	1.285E-14	1.289E-14	1.292E-14	1.294E-14	1.297E-14	1.300E-14	1.303E-14	1.306E-14	1.309E-14	1.312E-14
br 93	0.000E+00	1.447E-10	1.454E-10	1.459E-10	1.465E-10	1.471E-10	1.476E-10	1.482E-10	1.487E-10	1.493E-10	1.498E-10
kr 93	0.000E+00	4.725E-08	4.708E-08	4.687E-08	4.667E-08	4.647E-08	4.627E-08	4.608E-08	4.588E-08	4.569E-08	4.550E-08
rb 93	0.000E+00	1.538E-06	1.534E-06	1.530E-06	1.525E-06	1.520E-06	1.516E-06	1.511E-06	1.507E-06	1.502E-06	1.498E-06
sr 93	0.000E+00	2.120E-04	2.115E-04	2.109E-04	2.103E-04	2.097E-04	2.091E-04	2.085E-04	2.079E-04	2.073E-04	2.067E-04
y 93	0.000E+00	1.176E-02	1.174E-02	1.170E-02	1.167E-02	1.164E-02	1.160E-02	1.157E-02	1.154E-02	1.151E-02	1.147E-02
zr 93	6.155E+01	6.220E+01	6.285E+01	6.350E+01	6.415E+01	6.480E+01	6.544E+01	6.608E+01	6.673E+01	6.736E+01	6.800E+01
nb 93	1.468E-05	1.518E-05	1.569E-05	1.621E-05	1.674E-05	1.727E-05	1.782E-05	1.838E-05	1.894E-05	1.952E-05	2.010E-05
nb 93m	1.164E-04	1.186E-04	1.208E-04	1.230E-04	1.253E-04	1.276E-04	1.299E-04	1.322E-04	1.345E-04	1.368E-04	1.392E-04
br 94	0.000E+00	4.505E-12	4.515E-12	4.521E-12	4.527E-12	4.534E-12	4.541E-12	4.547E-12	4.554E-12	4.561E-12	4.567E-12
kr 94	0.000E+00	3.613E-09	3.604E-09	3.592E-09	3.580E-09	3.569E-09	3.557E-09	3.546E-09	3.535E-09	3.524E-09	3.513E-09
rb 94	0.000E+00	3.820E-07	3.813E-07	3.804E-07	3.794E-07	3.785E-07	3.776E-07	3.767E-07	3.758E-07	3.750E-07	3.741E-07
sr 94	0.000E+00	3.625E-05	3.618E-05	3.609E-05	3.600E-05	3.591E-05	3.582E-05	3.574E-05	3.565E-05	3.556E-05	3.548E-05
y 94	0.000E+00	5.862E-04	5.852E-04	5.838E-04	5.824E-04	5.810E-04	5.797E-04	5.783E-04	5.770E-04	5.757E-04	5.743E-04
zr 94	9.979E+01	1.009E+02	1.020E+02	1.031E+02	1.043E+02	1.054E+02	1.065E+02	1.076E+02	1.087E+02	1.098E+02	1.109E+02
nb 94	6.179E-05	6.271E-05	6.364E-05	6.456E-05	6.549E-05	6.642E-05	6.735E-05	6.828E-05	6.921E-05	7.015E-05	7.108E-05
nb 94m	0.000E+00	7.351E-11	7.375E-11	7.393E-11	7.411E-11	7.429E-11	7.446E-11	7.463E-11	7.479E-11	7.495E-11	7.511E-11
br 95	0.000E+00	5.017E-14	5.032E-14	5.044E-14	5.055E-14	5.067E-14	5.078E-14	5.090E-14	5.102E-14	5.113E-14	5.124E-14
kr 95	0.000E+00	1.385E-09	1.389E-09	1.392E-09	1.394E-09	1.397E-09	1.400E-09	1.403E-09	1.406E-09	1.409E-09	1.411E-09
rb 95	0.000E+00	2.672E-08	2.668E-08	2.663E-08	2.657E-08	2.652E-08	2.647E-08	2.642E-08	2.637E-08	2.632E-08	2.627E-08

sr 95	0.000E+00	1.095E-05	1.093E-05	1.090E-05	1.088E-05	1.085E-05	1.083E-05	1.080E-05	1.078E-05	1.075E-05	1.073E-05	
y 95	0.000E+00	3.478E-04	3.473E-04	3.466E-04	3.459E-04	3.453E-04	3.446E-04	3.439E-04	3.433E-04	3.426E-04	3.419E-04	
zr 95	1.323E+00	1.884E+00	2.267E+00	2.528E+00	2.706E+00	2.826E+00	2.906E+00	2.959E+00	2.994E+00	3.016E+00	3.029E+00	
nb 95	1.010E+00	9.559E-01	1.053E+00	1.187E+00	1.312E+00	1.413E+00	1.490E+00	1.547E+00	1.586E+00	1.614E+00	1.632E+00	
nb 95m	8.775E-04	1.135E-03	1.390E-03	1.564E-03	1.681E-03	1.761E-03	1.815E-03	1.850E-03	1.873E-03	1.888E-03	1.897E-03	
mo 95	9.766E+01	9.822E+01	9.880E+01	9.947E+01	1.002E+02	1.011E+02	1.019E+02	1.029E+02	1.039E+02	1.048E+02	1.058E+02	
br 96	0.000E+00	9.392E-15	9.418E-15	9.439E-15	9.459E-15	9.479E-15	9.499E-15	9.520E-15	9.540E-15	9.560E-15	9.581E-15	
kr 96	0.000E+00	8.948E-11	8.961E-11	8.969E-11	8.977E-11	8.984E-11	8.992E-11	9.001E-11	9.009E-11	9.017E-11	9.026E-11	
rb 96	0.000E+00	3.469E-09	3.465E-09	3.458E-09	3.451E-09	3.444E-09	3.438E-09	3.432E-09	3.426E-09	3.419E-09	3.414E-09	
sr 96	0.000E+00	3.422E-07	3.417E-07	3.409E-07	3.402E-07	3.395E-07	3.388E-07	3.381E-07	3.374E-07	3.368E-07	3.361E-07	
y 96	0.000E+00	3.182E-06	3.179E-06	3.173E-06	3.168E-06	3.163E-06	3.158E-06	3.153E-06	3.148E-06	3.143E-06	3.138E-06	
zr 96	1.045E+02	1.057E+02	1.069E+02	1.081E+02	1.093E+02	1.105E+02	1.117E+02	1.129E+02	1.141E+02	1.153E+02	1.164E+02	
nb 96	3.852E-20	3.551E-05	3.666E-05	3.816E-05	3.957E-05	4.079E-05	4.178E-05	4.257E-05	4.321E-05	4.373E-05	4.417E-05	
mo 96	3.650E+00	3.757E+00	3.866E+00	3.975E+00	4.086E+00	4.198E+00	4.311E+00	4.425E+00	4.541E+00	4.658E+00	4.776E+00	
kr 97	0.000E+00	4.262E-13	4.275E-13	4.284E-13	4.294E-13	4.304E-13	4.314E-13	4.324E-13	4.334E-13	4.343E-13	4.353E-13	
rb 97	0.000E+00	7.916E-10	7.880E-10	7.840E-10	7.799E-10	7.760E-10	7.721E-10	7.682E-10	7.644E-10	7.607E-10	7.570E-10	
sr 97	0.000E+00	6.870E-08	6.859E-08	6.843E-08	6.828E-08	6.812E-08	6.797E-08	6.783E-08	6.768E-08	6.754E-08	6.740E-08	
y 97	0.000E+00	1.565E-06	1.563E-06	1.561E-06	1.559E-06	1.556E-06	1.554E-06	1.552E-06	1.549E-06	1.547E-06	1.545E-06	
zr 97	7.588E-23	3.412E-02	3.411E-02	3.408E-02	3.405E-02	3.401E-02	3.398E-02	3.395E-02	3.392E-02	3.389E-02	3.386E-02	
nb 97	5.814E-24	2.445E-03	2.444E-03	2.442E-03	2.440E-03	2.438E-03	2.436E-03	2.433E-03	2.431E-03	2.429E-03	2.427E-03	
nb 97m	7.101E-26	3.195E-05	3.194E-05	3.191E-05	3.188E-05	3.185E-05	3.182E-05	3.179E-05	3.176E-05	3.173E-05	3.171E-05	
mo 97	9.873E+01	9.986E+01	1.010E+02	1.022E+02	1.033E+02	1.045E+02	1.057E+02	1.068E+02	1.080E+02	1.091E+02	1.103E+02	
kr 98	0.000E+00	2.472E-13	2.480E-13	2.486E-13	2.493E-13	2.499E-13	2.505E-13	2.511E-13	2.517E-13	2.523E-13	2.530E-13	
rb 98	0.000E+00	5.911E-11	5.926E-11	5.937E-11	5.948E-11	5.959E-11	5.970E-11	5.982E-11	5.993E-11	6.005E-11	6.016E-11	
sr 98	0.000E+00	4.468E-08	4.467E-08	4.462E-08	4.458E-08	4.454E-08	4.450E-08	4.446E-08	4.442E-08	4.439E-08	4.435E-08	
y 98	0.000E+00	2.142E-07	2.141E-07	2.138E-07	2.135E-07	2.132E-07	2.129E-07	2.127E-07	2.124E-07	2.121E-07	2.119E-07	
zr 98	0.000E+00	1.854E-05	1.854E-05	1.853E-05	1.851E-05	1.850E-05	1.849E-05	1.848E-05	1.847E-05	1.845E-05	1.844E-05	
nb 98	0.000E+00	1.742E-06	1.742E-06	1.741E-06	1.739E-06	1.738E-06	1.737E-06	1.736E-06	1.735E-06	1.734E-06	1.733E-06	
nb 98m	0.000E+00	1.561E-05	1.565E-05	1.569E-05	1.572E-05	1.575E-05	1.579E-05	1.582E-05	1.585E-05	1.588E-05	1.591E-05	

case 6 fission products page 117
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d	
mo 98	1.067E+02	1.080E+02	1.093E+02	1.106E+02	1.119E+02	1.132E+02	1.145E+02	1.158E+02	1.171E+02	1.184E+02	1.196E+02
tc 98	5.223E-04	5.361E-04	5.502E-04	5.644E-04	5.789E-04	5.935E-04	6.083E-04	6.233E-04	6.385E-04	6.538E-04	6.694E-04

rb 99	0.000E+00	9.192E-13	9.220E-13	9.241E-13	9.263E-13	9.285E-13	9.306E-13	9.328E-13	9.350E-13	9.372E-13	9.394E-13	
sr 99	0.000E+00	7.018E-09	6.996E-09	6.969E-09	6.943E-09	6.917E-09	6.892E-09	6.867E-09	6.842E-09	6.817E-09	6.793E-09	
y 99	0.000E+00	3.112E-07	3.109E-07	3.105E-07	3.100E-07	3.096E-07	3.091E-07	3.087E-07	3.083E-07	3.078E-07	3.074E-07	
zr 99	0.000E+00	1.260E-06	1.260E-06	1.260E-06	1.259E-06	1.259E-06	1.258E-06	1.258E-06	1.257E-06	1.257E-06	1.256E-06	
nb 99	0.000E+00	5.828E-06	5.829E-06	5.827E-06	5.824E-06	5.822E-06	5.820E-06	5.817E-06	5.815E-06	5.813E-06	5.811E-06	
nb 99m	0.000E+00	4.189E-05	4.190E-05	4.189E-05	4.188E-05	4.186E-05	4.185E-05	4.184E-05	4.183E-05	4.182E-05	4.180E-05	
mo 99	6.398E-07	1.577E-01	1.578E-01	1.577E-01	1.576E-01	1.576E-01	1.575E-01	1.575E-01	1.574E-01	1.574E-01	1.573E-01	
tc 99	1.050E+02	1.060E+02	1.072E+02	1.083E+02	1.094E+02	1.106E+02	1.117E+02	1.129E+02	1.140E+02	1.151E+02	1.162E+02	
tc 99m	5.647E-08	1.271E-02	1.271E-02	1.271E-02	1.271E-02	1.270E-02	1.270E-02	1.270E-02	1.269E-02	1.269E-02	1.269E-02	
ru 99	5.139E-03	5.207E-03	5.280E-03	5.353E-03	5.426E-03	5.500E-03	5.574E-03	5.649E-03	5.723E-03	5.798E-03	5.873E-03	
rb100	0.000E+00	4.788E-13	4.804E-13	4.818E-13	4.831E-13	4.845E-13	4.858E-13	4.872E-13	4.886E-13	4.899E-13	4.913E-13	
sr100	0.000E+00	7.518E-10	7.539E-10	7.554E-10	7.570E-10	7.587E-10	7.603E-10	7.619E-10	7.636E-10	7.652E-10	7.669E-10	
y100	0.000E+00	5.214E-08	5.223E-08	5.228E-08	5.234E-08	5.239E-08	5.245E-08	5.251E-08	5.257E-08	5.262E-08	5.268E-08	
zr100	0.000E+00	4.202E-06	4.201E-06	4.197E-06	4.194E-06	4.190E-06	4.187E-06	4.183E-06	4.180E-06	4.177E-06	4.173E-06	
nb100	0.000E+00	9.721E-07	9.722E-07	9.717E-07	9.712E-07	9.707E-07	9.702E-07	9.697E-07	9.692E-07	9.687E-07	9.682E-07	
nb100m	0.000E+00	1.676E-07	1.682E-07	1.687E-07	1.692E-07	1.696E-07	1.701E-07	1.706E-07	1.710E-07	1.714E-07	1.719E-07	
mo100	1.209E+02	1.224E+02	1.239E+02	1.254E+02	1.269E+02	1.284E+02	1.298E+02	1.313E+02	1.328E+02	1.343E+02	1.358E+02	
tc100	0.000E+00	1.858E-06	1.884E-06	1.909E-06	1.934E-06	1.960E-06	1.985E-06	2.010E-06	2.035E-06	2.060E-06	2.085E-06	
ru100	9.650E+00	9.892E+00	1.014E+01	1.039E+01	1.064E+01	1.089E+01	1.115E+01	1.141E+01	1.168E+01	1.195E+01	1.222E+01	
rb101	0.000E+00	3.702E-15	3.715E-15	3.724E-15	3.734E-15	3.743E-15	3.753E-15	3.763E-15	3.772E-15	3.782E-15	3.791E-15	
sr101	0.000E+00	1.070E-10	1.071E-10	1.072E-10	1.072E-10	1.073E-10	1.074E-10	1.074E-10	1.075E-10	1.076E-10	1.076E-10	
y101	0.000E+00	1.701E-08	1.699E-08	1.695E-08	1.691E-08	1.687E-08	1.684E-08	1.680E-08	1.677E-08	1.674E-08	1.670E-08	
zr101	0.000E+00	6.977E-07	6.982E-07	6.983E-07	6.983E-07	6.984E-07	6.985E-07	6.986E-07	6.987E-07	6.988E-07	6.990E-07	
nb101	0.000E+00	4.179E-06	4.182E-06	4.182E-06	4.183E-06	4.183E-06	4.184E-06	4.184E-06	4.185E-06	4.185E-06	4.186E-06	
mo101	0.000E+00	5.438E-04	5.443E-04	5.444E-04	5.445E-04	5.446E-04	5.448E-04	5.449E-04	5.450E-04	5.452E-04	5.453E-04	
tc101	0.000E+00	5.290E-04	5.295E-04	5.296E-04	5.297E-04	5.298E-04	5.300E-04	5.301E-04	5.302E-04	5.304E-04	5.305E-04	
ru101	1.004E+02	1.017E+02	1.029E+02	1.041E+02	1.053E+02	1.065E+02	1.078E+02	1.090E+02	1.102E+02	1.114E+02	1.126E+02	
sr102	0.000E+00	2.598E-11	2.594E-11	2.588E-11	2.582E-11	2.577E-11	2.571E-11	2.566E-11	2.560E-11	2.555E-11	2.550E-11	
y102	0.000E+00	1.344E-08	1.336E-08	1.328E-08	1.319E-08	1.310E-08	1.302E-08	1.294E-08	1.285E-08	1.277E-08	1.269E-08	
zr102	0.000E+00	6.962E-07	6.963E-07	6.959E-07	6.955E-07	6.951E-07	6.948E-07	6.945E-07	6.942E-07	6.939E-07	6.937E-07	
nb102	0.000E+00	6.543E-07	6.551E-07	6.556E-07	6.560E-07	6.565E-07	6.569E-07	6.574E-07	6.578E-07	6.583E-07	6.587E-07	
mo102	0.000E+00	4.059E-04	4.066E-04	4.070E-04	4.074E-04	4.078E-04	4.082E-04	4.086E-04	4.090E-04	4.094E-04	4.098E-04	
tc102	0.000E+00	3.164E-06	3.170E-06	3.173E-06	3.176E-06	3.179E-06	3.182E-06	3.186E-06	3.189E-06	3.192E-06	3.195E-06	
tc102m	0.000E+00	1.683E-07	1.689E-07	1.693E-07	1.697E-07	1.702E-07	1.706E-07	1.710E-07	1.714E-07	1.718E-07	1.722E-07	
ru102	9.836E+01	9.969E+01	1.010E+02	1.023E+02	1.037E+02	1.050E+02	1.063E+02	1.077E+02	1.090E+02	1.104E+02	1.117E+02	
rh102	5.525E-05	5.738E-05	5.947E-05	6.155E-05	6.362E-05	6.568E-05	6.773E-05	6.978E-05	7.182E-05	7.386E-05	7.589E-05	
pd102	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
sr103	0.000E+00	9.551E-14	9.585E-14	9.613E-14	9.641E-14	9.669E-14	9.697E-14	9.725E-14	9.752E-14	9.780E-14	9.808E-14	

y103	0.000E+00	1.151E-09	1.143E-09	1.134E-09	1.126E-09	1.117E-09	1.109E-09	1.101E-09	1.092E-09	1.084E-09	1.076E-09
zr103	0.000E+00	1.191E-07	1.193E-07	1.195E-07	1.196E-07	1.198E-07	1.200E-07	1.202E-07	1.203E-07	1.205E-07	1.207E-07
nb103	0.000E+00	5.702E-07	5.717E-07	5.728E-07	5.739E-07	5.751E-07	5.762E-07	5.773E-07	5.784E-07	5.795E-07	5.806E-07
mo103	0.000E+00	4.011E-05	4.023E-05	4.033E-05	4.042E-05	4.051E-05	4.060E-05	4.070E-05	4.079E-05	4.088E-05	4.097E-05
tc103	0.000E+00	3.278E-05	3.288E-05	3.296E-05	3.303E-05	3.311E-05	3.318E-05	3.325E-05	3.333E-05	3.340E-05	3.347E-05
ru103	6.459E-01	1.297E+00	1.652E+00	1.845E+00	1.953E+00	2.013E+00	2.047E+00	2.068E+00	2.082E+00	2.091E+00	2.098E+00
rh103	6.579E+01	6.580E+01	6.611E+01	6.658E+01	6.714E+01	6.773E+01	6.835E+01	6.898E+01	6.961E+01	7.024E+01	7.087E+01
rh103m	6.401E-04	1.286E-03	1.637E-03	1.829E-03	1.936E-03	1.995E-03	2.030E-03	2.050E-03	2.064E-03	2.073E-03	2.080E-03
sr104	0.000E+00	4.152E-14	4.167E-14	4.180E-14	4.192E-14	4.205E-14	4.218E-14	4.231E-14	4.243E-14	4.256E-14	4.268E-14
y104	0.000E+00	1.892E-11	1.901E-11	1.909E-11	1.916E-11	1.924E-11	1.932E-11	1.939E-11	1.947E-11	1.955E-11	1.963E-11

case 6 fission products page 118
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
zr104	0.000E+00	7.148E-08	7.178E-08	7.203E-08	7.229E-08	7.254E-08	7.280E-08	7.306E-08	7.332E-08	7.358E-08	7.385E-08
nb104	0.000E+00	8.566E-07	8.606E-07	8.639E-07	8.673E-07	8.707E-07	8.741E-07	8.775E-07	8.808E-07	8.842E-07	8.876E-07
mo104	0.000E+00	2.865E-05	2.877E-05	2.888E-05	2.899E-05	2.909E-05	2.920E-05	2.930E-05	2.941E-05	2.951E-05	2.961E-05
tc104	0.000E+00	5.512E-04	5.536E-04	5.556E-04	5.577E-04	5.597E-04	5.617E-04	5.637E-04	5.657E-04	5.677E-04	5.697E-04
ru104	6.850E+01	6.955E+01	7.060E+01	7.165E+01	7.271E+01	7.378E+01	7.484E+01	7.591E+01	7.699E+01	7.806E+01	7.915E+01
rh104	0.000E+00	1.240E-05	1.250E-05	1.262E-05	1.276E-05	1.291E-05	1.306E-05	1.321E-05	1.336E-05	1.352E-05	1.367E-05
rh104m	0.000E+00	5.574E-06	5.618E-06	5.673E-06	5.735E-06	5.801E-06	5.868E-06	5.937E-06	6.006E-06	6.076E-06	6.145E-06
pd104	2.244E+01	2.304E+01	2.365E+01	2.426E+01	2.488E+01	2.551E+01	2.614E+01	2.678E+01	2.743E+01	2.808E+01	2.874E+01
y105	0.000E+00	2.717E-13	2.730E-13	2.741E-13	2.752E-13	2.763E-13	2.774E-13	2.785E-13	2.796E-13	2.807E-13	2.818E-13
zr105	0.000E+00	3.617E-09	3.608E-09	3.598E-09	3.587E-09	3.577E-09	3.567E-09	3.558E-09	3.548E-09	3.539E-09	3.529E-09
nb105	0.000E+00	2.134E-07	2.146E-07	2.156E-07	2.166E-07	2.176E-07	2.186E-07	2.196E-07	2.206E-07	2.216E-07	2.226E-07
mo105	0.000E+00	1.260E-05	1.267E-05	1.273E-05	1.279E-05	1.285E-05	1.291E-05	1.297E-05	1.302E-05	1.308E-05	1.314E-05
tc105	0.000E+00	1.929E-04	1.940E-04	1.949E-04	1.958E-04	1.967E-04	1.976E-04	1.985E-04	1.994E-04	2.003E-04	2.012E-04
ru105	0.000E+00	6.838E-03	6.876E-03	6.909E-03	6.942E-03	6.974E-03	7.007E-03	7.039E-03	7.072E-03	7.104E-03	7.135E-03
rh105	7.041E-12	5.317E-02	5.346E-02	5.372E-02	5.397E-02	5.422E-02	5.447E-02	5.472E-02	5.497E-02	5.521E-02	5.545E-02
rh105m	0.000E+00	5.469E-06	5.499E-06	5.525E-06	5.552E-06	5.578E-06	5.604E-06	5.630E-06	5.655E-06	5.681E-06	5.706E-06
pd105	5.019E+01	5.096E+01	5.179E+01	5.263E+01	5.346E+01	5.430E+01	5.515E+01	5.599E+01	5.684E+01	5.770E+01	5.855E+01
y106	0.000E+00	3.014E-15	3.029E-15	3.042E-15	3.055E-15	3.068E-15	3.081E-15	3.094E-15	3.107E-15	3.120E-15	3.133E-15
zr106	0.000E+00	3.602E-10	3.628E-10	3.651E-10	3.674E-10	3.698E-10	3.721E-10	3.745E-10	3.769E-10	3.792E-10	3.816E-10
nb106	0.000E+00	1.443E-08	1.456E-08	1.468E-08	1.480E-08	1.492E-08	1.504E-08	1.516E-08	1.528E-08	1.540E-08	1.552E-08
mo106	0.000E+00	1.668E-06	1.680E-06	1.691E-06	1.702E-06	1.712E-06	1.723E-06	1.734E-06	1.745E-06	1.756E-06	1.766E-06

tc106 0.000E+00 1.097E-05 1.104E-05 1.111E-05 1.118E-05 1.125E-05 1.132E-05 1.139E-05 1.145E-05 1.152E-05 1.159E-05
ru106 5.050E+00 5.407E+00 5.747E+00 6.070E+00 6.376E+00 6.668E+00 6.945E+00 7.208E+00 7.460E+00 7.699E+00 7.928E+00
rh106 4.686E-06 5.231E-06 5.548E-06 5.849E-06 6.135E-06 6.407E-06 6.665E-06 6.912E-06 7.147E-06 7.370E-06 7.584E-06
rh106m 0.000E+00 2.502E-05 2.523E-05 2.542E-05 2.560E-05 2.579E-05 2.597E-05 2.616E-05 2.634E-05 2.652E-05 2.671E-05
pd106 3.808E+01 3.849E+01 3.892E+01 3.937E+01 3.985E+01 4.035E+01 4.086E+01 4.139E+01 4.195E+01 4.252E+01 4.310E+01
ag106 0.000E+00 1.433E-15 1.464E-15 1.494E-15 1.525E-15 1.557E-15 1.589E-15 1.622E-15 1.655E-15 1.689E-15 1.724E-15
y107 0.000E+00 2.842E-17 2.856E-17 2.868E-17 2.880E-17 2.892E-17 2.905E-17 2.917E-17 2.929E-17 2.941E-17 2.953E-17
zr107 0.000E+00 9.590E-13 9.659E-13 9.723E-13 9.787E-13 9.851E-13 9.915E-13 9.980E-13 1.004E-12 1.011E-12 1.017E-12
nb107 0.000E+00 1.999E-09 2.019E-09 2.038E-09 2.057E-09 2.076E-09 2.095E-09 2.114E-09 2.133E-09 2.152E-09 2.172E-09
mo107 0.000E+00 2.844E-07 2.869E-07 2.891E-07 2.914E-07 2.937E-07 2.960E-07 2.982E-07 3.005E-07 3.028E-07 3.050E-07
tc107 0.000E+00 4.462E-06 4.497E-06 4.530E-06 4.562E-06 4.594E-06 4.627E-06 4.659E-06 4.691E-06 4.723E-06 4.754E-06
ru107 0.000E+00 5.709E-05 5.753E-05 5.792E-05 5.832E-05 5.871E-05 5.910E-05 5.949E-05 5.988E-05 6.027E-05 6.065E-05
rh107 0.000E+00 3.312E-04 3.337E-04 3.360E-04 3.383E-04 3.406E-04 3.428E-04 3.451E-04 3.473E-04 3.496E-04 3.518E-04
pd107 2.758E+01 2.810E+01 2.861E+01 2.913E+01 2.965E+01 3.018E+01 3.071E+01 3.124E+01 3.177E+01 3.231E+01 3.285E+01
pd107m 0.000E+00 2.849E-08 2.890E-08 2.931E-08 2.974E-08 3.019E-08 3.065E-08 3.113E-08 3.162E-08 3.213E-08 3.266E-08
ag107 1.157E-05 1.183E-05 1.210E-05 1.238E-05 1.266E-05 1.294E-05 1.323E-05 1.352E-05 1.382E-05 1.412E-05 1.443E-05
zr108 0.000E+00 6.043E-14 6.085E-14 6.124E-14 6.162E-14 6.201E-14 6.240E-14 6.279E-14 6.318E-14 6.357E-14 6.397E-14
nb108 0.000E+00 1.975E-11 1.996E-11 2.017E-11 2.038E-11 2.058E-11 2.079E-11 2.100E-11 2.121E-11 2.142E-11 2.163E-11
mo108 0.000E+00 1.797E-08 1.817E-08 1.835E-08 1.854E-08 1.873E-08 1.892E-08 1.911E-08 1.930E-08 1.950E-08 1.969E-08
tc108 0.000E+00 3.772E-07 3.808E-07 3.841E-07 3.875E-07 3.908E-07 3.942E-07 3.975E-07 4.008E-07 4.042E-07 4.075E-07
ru108 0.000E+00 4.460E-05 4.497E-05 4.531E-05 4.564E-05 4.598E-05 4.632E-05 4.665E-05 4.698E-05 4.732E-05 4.765E-05
rh108 0.000E+00 2.789E-06 2.812E-06 2.833E-06 2.854E-06 2.875E-06 2.896E-06 2.917E-06 2.937E-06 2.958E-06 2.979E-06
rh108m 0.000E+00 9.540E-07 9.597E-07 9.646E-07 9.695E-07 9.743E-07 9.790E-07 9.837E-07 9.884E-07 9.929E-07 9.974E-07
pd108 1.777E+01 1.811E+01 1.845E+01 1.880E+01 1.914E+01 1.949E+01 1.984E+01 2.019E+01 2.055E+01 2.090E+01 2.126E+01
ag108 7.946E-14 6.088E-11 6.204E-11 6.317E-11 6.431E-11 6.546E-11 6.661E-11 6.776E-11 6.893E-11 7.009E-11 7.127E-11
ag108m 2.574E-05 2.657E-05 2.742E-05 2.828E-05 2.916E-05 3.005E-05 3.096E-05 3.189E-05 3.283E-05 3.379E-05 3.476E-05
cd108 2.681E-05 2.767E-05 2.854E-05 2.943E-05 3.034E-05 3.126E-05 3.220E-05 3.316E-05 3.413E-05 3.512E-05 3.613E-05
zr109 0.000E+00 1.456E-17 1.464E-17 1.471E-17 1.477E-17 1.484E-17 1.491E-17 1.497E-17 1.504E-17 1.511E-17 1.517E-17
nb109 0.000E+00 1.014E-12 1.025E-12 1.035E-12 1.045E-12 1.054E-12 1.064E-12 1.074E-12 1.084E-12 1.094E-12 1.104E-12

case 6 fission products page 119
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge 34.8 d 69.6 d 104.4 d 139.2 d 174.0 d 208.8 d 243.6 d 278.4 d 313.2 d 348.0 d
mo109 0.000E+00 1.779E-09 1.799E-09 1.818E-09 1.837E-09 1.855E-09 1.874E-09 1.893E-09 1.912E-09 1.931E-09 1.950E-09
tc109 0.000E+00 3.451E-08 3.483E-08 3.514E-08 3.544E-08 3.574E-08 3.604E-08 3.635E-08 3.665E-08 3.695E-08 3.725E-08

ru109	0.000E+00	3.920E-06	3.951E-06	3.978E-06	4.006E-06	4.033E-06	4.060E-06	4.087E-06	4.114E-06	4.141E-06	4.167E-06
rh109	0.000E+00	1.044E-05	1.052E-05	1.059E-05	1.066E-05	1.073E-05	1.080E-05	1.087E-05	1.093E-05	1.100E-05	1.107E-05
rh109m	0.000E+00	3.262E-06	3.286E-06	3.308E-06	3.330E-06	3.352E-06	3.374E-06	3.395E-06	3.417E-06	3.438E-06	3.459E-06
pd109	0.000E+00	7.272E-03	7.339E-03	7.400E-03	7.461E-03	7.522E-03	7.584E-03	7.645E-03	7.706E-03	7.766E-03	7.827E-03
pd109m	0.000E+00	1.932E-07	1.958E-07	1.984E-07	2.010E-07	2.036E-07	2.062E-07	2.088E-07	2.114E-07	2.141E-07	2.167E-07
ag109	1.152E+01	1.170E+01	1.188E+01	1.207E+01	1.226E+01	1.245E+01	1.264E+01	1.282E+01	1.301E+01	1.320E+01	1.339E+01
ag109m	1.030E-14	5.840E-06	5.893E-06	5.942E-06	5.992E-06	6.041E-06	6.090E-06	6.139E-06	6.188E-06	6.237E-06	6.286E-06
cd109	1.039E-08	1.147E-08	1.253E-08	1.357E-08	1.460E-08	1.562E-08	1.662E-08	1.762E-08	1.861E-08	1.960E-08	2.058E-08
nb110	0.000E+00	1.636E-14	1.651E-14	1.665E-14	1.678E-14	1.692E-14	1.706E-14	1.720E-14	1.734E-14	1.748E-14	1.762E-14
mo110	0.000E+00	3.628E-10	3.667E-10	3.705E-10	3.742E-10	3.780E-10	3.818E-10	3.856E-10	3.894E-10	3.933E-10	3.971E-10
tc110	0.000E+00	3.177E-09	3.212E-09	3.245E-09	3.279E-09	3.312E-09	3.345E-09	3.379E-09	3.412E-09	3.446E-09	3.479E-09
ru110	0.000E+00	5.327E-07	5.375E-07	5.418E-07	5.462E-07	5.506E-07	5.549E-07	5.593E-07	5.636E-07	5.679E-07	5.722E-07
rh110	0.000E+00	1.906E-08	1.919E-08	1.930E-08	1.941E-08	1.952E-08	1.963E-08	1.973E-08	1.984E-08	1.995E-08	2.005E-08
rh110m	0.000E+00	1.184E-06	1.194E-06	1.204E-06	1.213E-06	1.222E-06	1.231E-06	1.241E-06	1.250E-06	1.259E-06	1.268E-06
pd110	5.263E+00	5.364E+00	5.466E+00	5.568E+00	5.672E+00	5.776E+00	5.881E+00	5.987E+00	6.093E+00	6.200E+00	6.308E+00
ag110	2.976E-10	1.393E-06	1.420E-06	1.446E-06	1.473E-06	1.499E-06	1.526E-06	1.552E-06	1.579E-06	1.606E-06	1.633E-06
ag110m	1.919E-02	2.184E-02	2.433E-02	2.667E-02	2.888E-02	3.097E-02	3.295E-02	3.484E-02	3.663E-02	3.835E-02	4.000E-02
cd110	3.719E+00	3.836E+00	3.955E+00	4.076E+00	4.200E+00	4.326E+00	4.455E+00	4.586E+00	4.719E+00	4.855E+00	4.993E+00
nb111	0.000E+00	1.436E-16	1.444E-16	1.451E-16	1.458E-16	1.465E-16	1.471E-16	1.478E-16	1.485E-16	1.492E-16	1.499E-16
mo111	0.000E+00	5.202E-12	5.249E-12	5.293E-12	5.337E-12	5.381E-12	5.426E-12	5.470E-12	5.515E-12	5.560E-12	5.604E-12
tc111	0.000E+00	1.446E-09	1.461E-09	1.476E-09	1.491E-09	1.506E-09	1.521E-09	1.536E-09	1.551E-09	1.566E-09	1.581E-09
ru111	0.000E+00	1.880E-08	1.897E-08	1.913E-08	1.929E-08	1.946E-08	1.962E-08	1.978E-08	1.994E-08	2.010E-08	2.027E-08
rh111	0.000E+00	2.552E-07	2.573E-07	2.592E-07	2.611E-07	2.629E-07	2.648E-07	2.667E-07	2.686E-07	2.704E-07	2.723E-07
pd111	0.000E+00	3.473E-05	3.501E-05	3.526E-05	3.552E-05	3.578E-05	3.603E-05	3.628E-05	3.654E-05	3.679E-05	3.704E-05
pd111m	0.000E+00	2.183E-05	2.197E-05	2.208E-05	2.220E-05	2.232E-05	2.243E-05	2.255E-05	2.266E-05	2.277E-05	2.288E-05
ag111	1.350E-04	1.536E-02	1.608E-02	1.622E-02	1.634E-02	1.645E-02	1.657E-02	1.669E-02	1.680E-02	1.692E-02	1.703E-02
ag111m	0.000E+00	1.606E-06	1.619E-06	1.630E-06	1.642E-06	1.654E-06	1.666E-06	1.677E-06	1.689E-06	1.701E-06	1.712E-06
cd111	2.736E+00	2.773E+00	2.824E+00	2.877E+00	2.930E+00	2.983E+00	3.037E+00	3.091E+00	3.145E+00	3.200E+00	3.256E+00
cd111m	0.000E+00	9.326E-08	9.647E-08	9.969E-08	1.030E-07	1.064E-07	1.098E-07	1.133E-07	1.169E-07	1.205E-07	1.243E-07
nb112	0.000E+00	2.441E-18	2.450E-18	2.458E-18	2.465E-18	2.473E-18	2.480E-18	2.488E-18	2.495E-18	2.503E-18	2.510E-18
mo112	0.000E+00	1.343E-12	1.351E-12	1.358E-12	1.365E-12	1.372E-12	1.379E-12	1.386E-12	1.393E-12	1.401E-12	1.408E-12
tc112	0.000E+00	4.943E-11	4.988E-11	5.030E-11	5.071E-11	5.114E-11	5.156E-11	5.198E-11	5.241E-11	5.284E-11	5.326E-11
ru112	0.000E+00	1.373E-08	1.384E-08	1.395E-08	1.405E-08	1.416E-08	1.427E-08	1.437E-08	1.448E-08	1.458E-08	1.469E-08
rh112	0.000E+00	1.383E-08	1.393E-08	1.403E-08	1.412E-08	1.421E-08	1.430E-08	1.440E-08	1.449E-08	1.458E-08	1.467E-08
pd112	2.103E-20	8.646E-04	8.707E-04	8.762E-04	8.817E-04	8.872E-04	8.927E-04	8.981E-04	9.035E-04	9.089E-04	9.143E-04
ag112	3.687E-21	1.293E-04	1.302E-04	1.311E-04	1.319E-04	1.327E-04	1.335E-04	1.343E-04	1.351E-04	1.359E-04	1.367E-04
cd112	1.405E+00	1.430E+00	1.456E+00	1.482E+00	1.509E+00	1.536E+00	1.563E+00	1.590E+00	1.617E+00	1.645E+00	1.673E+00
mo113	0.000E+00	5.753E-15	5.777E-15	5.798E-15	5.818E-15	5.838E-15	5.859E-15	5.879E-15	5.899E-15	5.920E-15	5.940E-15

tc113 0.000E+00 1.648E-11 1.660E-11 1.670E-11 1.681E-11 1.692E-11 1.702E-11 1.713E-11 1.724E-11 1.735E-11 1.745E-11
ru113 0.000E+00 3.530E-09 3.557E-09 3.582E-09 3.607E-09 3.632E-09 3.657E-09 3.682E-09 3.708E-09 3.733E-09 3.758E-09
rh113 0.000E+00 3.931E-09 3.959E-09 3.984E-09 4.009E-09 4.034E-09 4.059E-09 4.084E-09 4.109E-09 4.135E-09 4.160E-09
pd113 0.000E+00 6.076E-07 6.116E-07 6.151E-07 6.187E-07 6.222E-07 6.258E-07 6.293E-07 6.328E-07 6.364E-07 6.399E-07
ag113 0.000E+00 1.228E-04 1.236E-04 1.244E-04 1.251E-04 1.258E-04 1.265E-04 1.272E-04 1.279E-04 1.286E-04 1.294E-04
ag113m 0.000E+00 8.762E-08 8.818E-08 8.869E-08 8.919E-08 8.970E-08 9.020E-08 9.071E-08 9.121E-08 9.171E-08 9.221E-08
cd113 1.467E-02 1.456E-02 1.459E-02 1.464E-02 1.468E-02 1.473E-02 1.478E-02 1.483E-02 1.488E-02 1.493E-02 1.498E-02
cd113m 1.297E-02 1.321E-02 1.345E-02 1.369E-02 1.393E-02 1.418E-02 1.443E-02 1.468E-02 1.493E-02 1.518E-02 1.543E-02
in113 2.742E-03 2.798E-03 2.855E-03 2.913E-03 2.972E-03 3.032E-03 3.093E-03 3.155E-03 3.218E-03 3.282E-03 3.347E-03
in113m 0.000E+00 4.132E-14 4.154E-14 4.172E-14 4.191E-14 4.209E-14 4.226E-14 4.244E-14 4.261E-14 4.278E-14 4.294E-14

case 6 fission products page 120
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
mo114	0.000E+00	4.730E-15	4.747E-15	4.761E-15	4.775E-15	4.789E-15	4.803E-15	4.817E-15	4.831E-15	4.845E-15	4.859E-15
tc114	0.000E+00	7.528E-13	7.567E-13	7.600E-13	7.634E-13	7.669E-13	7.703E-13	7.737E-13	7.771E-13	7.806E-13	7.840E-13
ru114	0.000E+00	3.342E-09	3.361E-09	3.378E-09	3.394E-09	3.411E-09	3.428E-09	3.445E-09	3.462E-09	3.479E-09	3.496E-09
rh114	0.000E+00	3.720E-09	3.740E-09	3.758E-09	3.777E-09	3.795E-09	3.813E-09	3.831E-09	3.849E-09	3.868E-09	3.886E-09
pd114	0.000E+00	7.548E-07	7.586E-07	7.620E-07	7.653E-07	7.687E-07	7.720E-07	7.753E-07	7.785E-07	7.818E-07	7.850E-07
ag114	0.000E+00	2.454E-08	2.467E-08	2.478E-08	2.489E-08	2.499E-08	2.510E-08	2.521E-08	2.531E-08	2.542E-08	2.552E-08
cd114	1.494E+00	1.518E+00	1.543E+00	1.568E+00	1.593E+00	1.618E+00	1.643E+00	1.669E+00	1.694E+00	1.720E+00	1.746E+00
in114	4.347E-11	1.260E-10	1.484E-10	1.638E-10	1.749E-10	1.834E-10	1.904E-10	1.964E-10	2.019E-10	2.071E-10	2.121E-10
in114m	2.703E-06	4.730E-06	6.049E-06	6.931E-06	7.547E-06	8.000E-06	8.355E-06	8.651E-06	8.912E-06	9.153E-06	9.384E-06
sn114	6.277E-05	6.595E-05	6.992E-05	7.444E-05	7.932E-05	8.449E-05	8.988E-05	9.545E-05	1.012E-04	1.071E-04	1.131E-04
mo115	0.000E+00	6.908E-18	6.930E-18	6.947E-18	6.964E-18	6.981E-18	6.998E-18	7.015E-18	7.032E-18	7.049E-18	7.065E-18
tc115	0.000E+00	3.366E-14	3.378E-14	3.389E-14	3.399E-14	3.410E-14	3.420E-14	3.430E-14	3.441E-14	3.451E-14	3.461E-14
ru115	0.000E+00	8.064E-11	8.101E-11	8.132E-11	8.163E-11	8.195E-11	8.226E-11	8.258E-11	8.290E-11	8.322E-11	8.354E-11
rh115	0.000E+00	7.346E-09	7.382E-09	7.412E-09	7.442E-09	7.473E-09	7.503E-09	7.534E-09	7.565E-09	7.595E-09	7.626E-09
pd115	0.000E+00	1.177E-07	1.182E-07	1.187E-07	1.191E-07	1.196E-07	1.200E-07	1.204E-07	1.209E-07	1.213E-07	1.217E-07
ag115	0.000E+00	2.949E-06	2.962E-06	2.973E-06	2.984E-06	2.995E-06	3.006E-06	3.017E-06	3.028E-06	3.039E-06	3.050E-06
ag115m	0.000E+00	1.859E-08	1.867E-08	1.874E-08	1.881E-08	1.888E-08	1.895E-08	1.902E-08	1.909E-08	1.916E-08	1.922E-08
cd115	1.610E-10	6.683E-04	6.716E-04	6.745E-04	6.774E-04	6.803E-04	6.831E-04	6.860E-04	6.888E-04	6.916E-04	6.944E-04
cd115m	2.144E-04	3.858E-04	4.869E-04	5.470E-04	5.832E-04	6.057E-04	6.201E-04	6.298E-04	6.368E-04	6.422E-04	6.467E-04
in115	2.094E-01	2.098E-01	2.109E-01	2.121E-01	2.133E-01	2.145E-01	2.157E-01	2.168E-01	2.180E-01	2.191E-01	2.202E-01
in115m	1.140E-10	5.607E-05	5.635E-05	5.659E-05	5.683E-05	5.707E-05	5.731E-05	5.755E-05	5.779E-05	5.803E-05	5.826E-05

sn115	2.219E-02	2.249E-02	2.282E-02	2.315E-02	2.349E-02	2.382E-02	2.416E-02	2.450E-02	2.484E-02	2.517E-02	2.552E-02	
tc116	0.000E+00	6.015E-15	6.034E-15	6.050E-15	6.065E-15	6.081E-15	6.096E-15	6.111E-15	6.127E-15	6.142E-15	6.157E-15	
ru116	0.000E+00	4.996E-11	5.012E-11	5.024E-11	5.036E-11	5.048E-11	5.061E-11	5.073E-11	5.085E-11	5.097E-11	5.109E-11	
rh116	0.000E+00	4.073E-10	4.084E-10	4.093E-10	4.102E-10	4.111E-10	4.120E-10	4.129E-10	4.138E-10	4.147E-10	4.156E-10	
pd116	0.000E+00	4.267E-08	4.279E-08	4.288E-08	4.297E-08	4.306E-08	4.315E-08	4.324E-08	4.332E-08	4.341E-08	4.350E-08	
ag116	0.000E+00	6.218E-07	6.236E-07	6.250E-07	6.264E-07	6.278E-07	6.291E-07	6.305E-07	6.318E-07	6.331E-07	6.344E-07	
ag116m	0.000E+00	5.221E-09	5.241E-09	5.257E-09	5.273E-09	5.289E-09	5.304E-09	5.319E-09	5.334E-09	5.349E-09	5.363E-09	
cd116	6.346E-01	6.438E-01	6.531E-01	6.624E-01	6.717E-01	6.810E-01	6.904E-01	6.997E-01	7.091E-01	7.185E-01	7.280E-01	
in116	0.000E+00	8.555E-09	8.631E-09	8.701E-09	8.772E-09	8.843E-09	8.914E-09	8.984E-09	9.054E-09	9.124E-09	9.192E-09	
in116m	0.000E+00	7.416E-06	7.481E-06	7.542E-06	7.604E-06	7.665E-06	7.727E-06	7.788E-06	7.848E-06	7.908E-06	7.968E-06	
sn116	2.565E-01	2.625E-01	2.686E-01	2.747E-01	2.809E-01	2.871E-01	2.934E-01	2.997E-01	3.060E-01	3.125E-01	3.189E-01	
tc117	0.000E+00	9.766E-17	9.797E-17	9.822E-17	9.846E-17	9.870E-17	9.895E-17	9.919E-17	9.943E-17	9.967E-17	9.991E-17	
ru117	0.000E+00	1.598E-12	1.603E-12	1.607E-12	1.612E-12	1.616E-12	1.620E-12	1.625E-12	1.629E-12	1.633E-12	1.637E-12	
rh117	0.000E+00	2.064E-10	2.071E-10	2.077E-10	2.082E-10	2.088E-10	2.094E-10	2.100E-10	2.106E-10	2.112E-10	2.117E-10	
pd117	0.000E+00	1.154E-08	1.158E-08	1.162E-08	1.165E-08	1.168E-08	1.171E-08	1.174E-08	1.177E-08	1.181E-08	1.184E-08	
ag117	0.000E+00	1.519E-07	1.525E-07	1.530E-07	1.535E-07	1.540E-07	1.545E-07	1.549E-07	1.554E-07	1.559E-07	1.563E-07	
ag117m	0.000E+00	1.114E-08	1.119E-08	1.122E-08	1.126E-08	1.129E-08	1.133E-08	1.137E-08	1.140E-08	1.143E-08	1.147E-08	
cd117	0.000E+00	3.277E-05	3.291E-05	3.302E-05	3.312E-05	3.323E-05	3.334E-05	3.344E-05	3.354E-05	3.365E-05	3.375E-05	
cd117m	0.000E+00	1.016E-05	1.021E-05	1.024E-05	1.028E-05	1.031E-05	1.034E-05	1.038E-05	1.041E-05	1.044E-05	1.047E-05	
in117	0.000E+00	7.177E-06	7.207E-06	7.231E-06	7.255E-06	7.279E-06	7.302E-06	7.325E-06	7.348E-06	7.370E-06	7.392E-06	
in117m	0.000E+00	2.335E-05	2.344E-05	2.352E-05	2.360E-05	2.367E-05	2.375E-05	2.382E-05	2.390E-05	2.397E-05	2.404E-05	
sn117	5.938E-01	6.030E-01	6.123E-01	6.217E-01	6.311E-01	6.405E-01	6.500E-01	6.595E-01	6.690E-01	6.785E-01	6.881E-01	
sn117m	2.439E-06	3.265E-05	3.838E-05	3.992E-05	4.075E-05	4.147E-05	4.217E-05	4.288E-05	4.359E-05	4.430E-05	4.502E-05	
tc118	0.000E+00	1.566E-18	1.571E-18	1.575E-18	1.578E-18	1.582E-18	1.586E-18	1.590E-18	1.593E-18	1.597E-18	1.601E-18	
ru118	0.000E+00	5.041E-13	5.058E-13	5.071E-13	5.085E-13	5.099E-13	5.112E-13	5.126E-13	5.140E-13	5.153E-13	5.167E-13	
rh118	0.000E+00	1.287E-11	1.292E-11	1.297E-11	1.301E-11	1.305E-11	1.310E-11	1.314E-11	1.318E-11	1.323E-11	1.327E-11	
pd118	0.000E+00	3.434E-09	3.448E-09	3.459E-09	3.471E-09	3.482E-09	3.493E-09	3.505E-09	3.516E-09	3.527E-09	3.538E-09	
ag118	0.000E+00	7.192E-09	7.217E-09	7.236E-09	7.256E-09	7.275E-09	7.294E-09	7.313E-09	7.332E-09	7.351E-09	7.369E-09	
ag118m	0.000E+00	2.713E-09	2.722E-09	2.730E-09	2.737E-09	2.744E-09	2.752E-09	2.759E-09	2.766E-09	2.773E-09	2.780E-09	

case 6 fission products page 121
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
cd118	0.000E+00	1.016E-05	1.020E-05	1.023E-05	1.025E-05	1.028E-05	1.031E-05	1.034E-05	1.036E-05	1.039E-05	1.042E-05
in118	0.000E+00	1.686E-08	1.692E-08	1.696E-08	1.701E-08	1.706E-08	1.710E-08	1.715E-08	1.719E-08	1.724E-08	1.728E-08

in118m	0.000E+00	1.216E-09	1.222E-09	1.227E-09	1.231E-09	1.236E-09	1.240E-09	1.245E-09	1.249E-09	1.253E-09	1.258E-09
sn118	4.765E-01	4.836E-01	4.908E-01	4.980E-01	5.052E-01	5.125E-01	5.197E-01	5.270E-01	5.343E-01	5.416E-01	5.490E-01
ru119	0.000E+00	1.899E-14	1.904E-14	1.908E-14	1.912E-14	1.916E-14	1.920E-14	1.924E-14	1.927E-14	1.931E-14	1.935E-14
rh119	0.000E+00	6.333E-12	6.344E-12	6.350E-12	6.357E-12	6.363E-12	6.370E-12	6.376E-12	6.382E-12	6.388E-12	6.395E-12
pd119	0.000E+00	9.437E-10	9.443E-10	9.443E-10	9.443E-10	9.442E-10	9.442E-10	9.441E-10	9.440E-10	9.440E-10	9.439E-10
ag119	0.000E+00	4.480E-09	4.488E-09	4.493E-09	4.498E-09	4.503E-09	4.508E-09	4.513E-09	4.517E-09	4.522E-09	4.526E-09
cd119	0.000E+00	3.790E-07	3.800E-07	3.809E-07	3.817E-07	3.825E-07	3.833E-07	3.840E-07	3.848E-07	3.856E-07	3.863E-07
cd119m	0.000E+00	1.522E-07	1.528E-07	1.533E-07	1.538E-07	1.543E-07	1.548E-07	1.552E-07	1.557E-07	1.562E-07	1.566E-07
in119	0.000E+00	2.163E-07	2.171E-07	2.179E-07	2.186E-07	2.193E-07	2.199E-07	2.206E-07	2.213E-07	2.220E-07	2.226E-07
in119m	0.000E+00	2.297E-06	2.304E-06	2.309E-06	2.314E-06	2.319E-06	2.324E-06	2.329E-06	2.334E-06	2.339E-06	2.343E-06
sn119	5.042E-01	5.116E-01	5.191E-01	5.266E-01	5.341E-01	5.416E-01	5.492E-01	5.567E-01	5.643E-01	5.719E-01	5.795E-01
sn119m	4.675E-04	5.185E-04	5.667E-04	6.121E-04	6.552E-04	6.960E-04	7.347E-04	7.715E-04	8.066E-04	8.401E-04	8.721E-04
ru120	0.000E+00	4.403E-15	4.417E-15	4.428E-15	4.439E-15	4.449E-15	4.460E-15	4.471E-15	4.482E-15	4.493E-15	4.503E-15
rh120	0.000E+00	5.607E-13	5.626E-13	5.642E-13	5.657E-13	5.673E-13	5.688E-13	5.704E-13	5.719E-13	5.734E-13	5.750E-13
pd120	0.000E+00	1.215E-09	1.219E-09	1.222E-09	1.225E-09	1.228E-09	1.231E-09	1.234E-09	1.237E-09	1.240E-09	1.243E-09
ag120	0.000E+00	1.715E-09	1.720E-09	1.724E-09	1.728E-09	1.732E-09	1.737E-09	1.741E-09	1.745E-09	1.749E-09	1.753E-09
cd120	0.000E+00	1.692E-07	1.698E-07	1.702E-07	1.707E-07	1.711E-07	1.715E-07	1.719E-07	1.723E-07	1.728E-07	1.732E-07
in120	0.000E+00	1.045E-08	1.049E-08	1.051E-08	1.054E-08	1.057E-08	1.059E-08	1.062E-08	1.065E-08	1.067E-08	1.070E-08
in120m	0.000E+00	2.873E-09	2.885E-09	2.895E-09	2.905E-09	2.915E-09	2.925E-09	2.934E-09	2.944E-09	2.953E-09	2.962E-09
sn120	4.922E-01	4.995E-01	5.068E-01	5.141E-01	5.214E-01	5.287E-01	5.361E-01	5.434E-01	5.508E-01	5.582E-01	5.657E-01
rh121	0.000E+00	2.244E-13	2.251E-13	2.257E-13	2.263E-13	2.269E-13	2.274E-13	2.280E-13	2.286E-13	2.291E-13	2.297E-13
pd121	0.000E+00	8.400E-11	8.425E-11	8.445E-11	8.465E-11	8.486E-11	8.506E-11	8.526E-11	8.546E-11	8.567E-11	8.587E-11
ag121	0.000E+00	8.371E-10	8.395E-10	8.414E-10	8.432E-10	8.451E-10	8.469E-10	8.488E-10	8.506E-10	8.525E-10	8.543E-10
cd121	0.000E+00	4.509E-08	4.523E-08	4.533E-08	4.544E-08	4.554E-08	4.565E-08	4.575E-08	4.585E-08	4.595E-08	4.605E-08
in121	0.000E+00	7.688E-09	7.719E-09	7.743E-09	7.767E-09	7.791E-09	7.814E-09	7.837E-09	7.860E-09	7.882E-09	7.904E-09
in121m	0.000E+00	7.934E-07	7.959E-07	7.978E-07	7.996E-07	8.015E-07	8.033E-07	8.052E-07	8.070E-07	8.087E-07	8.105E-07
sn121	2.300E-07	3.576E-04	3.588E-04	3.597E-04	3.605E-04	3.614E-04	3.623E-04	3.631E-04	3.640E-04	3.648E-04	3.656E-04
sn121m	5.281E-03	5.365E-03	5.449E-03	5.534E-03	5.618E-03	5.703E-03	5.788E-03	5.873E-03	5.959E-03	6.044E-03	6.130E-03
sb121	5.000E-01	5.066E-01	5.135E-01	5.205E-01	5.274E-01	5.344E-01	5.413E-01	5.483E-01	5.553E-01	5.623E-01	5.692E-01
rh122	0.000E+00	1.071E-14	1.074E-14	1.077E-14	1.079E-14	1.082E-14	1.085E-14	1.088E-14	1.090E-14	1.093E-14	1.096E-14
pd122	0.000E+00	6.085E-11	6.103E-11	6.117E-11	6.131E-11	6.145E-11	6.159E-11	6.173E-11	6.187E-11	6.201E-11	6.215E-11
ag122	0.000E+00	2.604E-10	2.611E-10	2.616E-10	2.622E-10	2.627E-10	2.632E-10	2.638E-10	2.643E-10	2.649E-10	2.654E-10
cd122	0.000E+00	1.890E-08	1.895E-08	1.900E-08	1.904E-08	1.908E-08	1.912E-08	1.916E-08	1.920E-08	1.924E-08	1.928E-08
in122	0.000E+00	6.058E-09	6.076E-09	6.090E-09	6.104E-09	6.118E-09	6.131E-09	6.145E-09	6.158E-09	6.171E-09	6.184E-09
in122m	0.000E+00	4.448E-09	4.465E-09	4.480E-09	4.494E-09	4.508E-09	4.522E-09	4.535E-09	4.548E-09	4.561E-09	4.574E-09
sn122	6.402E-01	6.497E-01	6.592E-01	6.687E-01	6.782E-01	6.877E-01	6.973E-01	7.069E-01	7.165E-01	7.261E-01	7.358E-01
sb122	2.732E-10	8.477E-05	8.622E-05	8.761E-05	8.901E-05	9.041E-05	9.182E-05	9.324E-05	9.466E-05	9.609E-05	9.752E-05
sb122m	0.000E+00	9.185E-09	9.341E-09	9.492E-09	9.643E-09	9.795E-09	9.948E-09	1.010E-08	1.025E-08	1.041E-08	1.056E-08

te122 2.560E-02 2.624E-02 2.697E-02 2.771E-02 2.846E-02 2.922E-02 3.000E-02 3.079E-02 3.159E-02 3.240E-02 3.322E-02
rh123 0.000E+00 1.148E-15 1.152E-15 1.155E-15 1.158E-15 1.161E-15 1.164E-15 1.167E-15 1.170E-15 1.172E-15 1.175E-15
pd123 0.000E+00 2.287E-12 2.295E-12 2.301E-12 2.307E-12 2.313E-12 2.319E-12 2.325E-12 2.331E-12 2.337E-12 2.343E-12
ag123 0.000E+00 8.493E-11 8.521E-11 8.543E-11 8.565E-11 8.587E-11 8.610E-11 8.632E-11 8.654E-11 8.677E-11 8.699E-11
cd123 0.000E+00 2.079E-08 2.085E-08 2.091E-08 2.096E-08 2.101E-08 2.106E-08 2.111E-08 2.116E-08 2.121E-08 2.126E-08
in123 0.000E+00 1.813E-08 1.820E-08 1.825E-08 1.830E-08 1.835E-08 1.839E-08 1.844E-08 1.849E-08 1.854E-08 1.858E-08
in123m 0.000E+00 3.947E-08 3.961E-08 3.972E-08 3.982E-08 3.993E-08 4.004E-08 4.014E-08 4.024E-08 4.034E-08 4.044E-08
sn123 1.581E-03 1.886E-03 2.140E-03 2.350E-03 2.525E-03 2.670E-03 2.790E-03 2.890E-03 2.973E-03 3.042E-03 3.099E-03
sn123m 0.000E+00 9.464E-06 9.493E-06 9.515E-06 9.538E-06 9.560E-06 9.581E-06 9.603E-06 9.624E-06 9.645E-06 9.666E-06
sb123 5.911E-01 5.990E-01 6.070E-01 6.151E-01 6.232E-01 6.313E-01 6.395E-01 6.477E-01 6.560E-01 6.642E-01 6.725E-01

case 6 fission products page 122
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
tc123	1.952E-04	1.989E-04	2.032E-04	2.080E-04	2.133E-04	2.191E-04	2.252E-04	2.316E-04	2.383E-04	2.453E-04	2.525E-04
tc123m	1.170E-05	1.453E-05	1.699E-05	1.916E-05	2.110E-05	2.284E-05	2.442E-05	2.588E-05	2.725E-05	2.854E-05	2.977E-05
pd124	0.000E+00	2.115E-12	2.121E-12	2.126E-12	2.130E-12	2.135E-12	2.139E-12	2.144E-12	2.149E-12	2.153E-12	2.158E-12
ag124	0.000E+00	4.138E-11	4.147E-11	4.153E-11	4.160E-11	4.166E-11	4.172E-11	4.178E-11	4.185E-11	4.191E-11	4.197E-11
cd124	0.000E+00	3.209E-09	3.216E-09	3.221E-09	3.226E-09	3.230E-09	3.235E-09	3.239E-09	3.244E-09	3.248E-09	3.253E-09
in124	0.000E+00	2.164E-08	2.170E-08	2.175E-08	2.179E-08	2.183E-08	2.188E-08	2.192E-08	2.196E-08	2.200E-08	2.204E-08
sn124	1.073E+00	1.089E+00	1.105E+00	1.120E+00	1.136E+00	1.152E+00	1.168E+00	1.184E+00	1.200E+00	1.216E+00	1.232E+00
sb124	6.056E-04	9.086E-04	1.120E-03	1.269E-03	1.377E-03	1.458E-03	1.520E-03	1.570E-03	1.612E-03	1.648E-03	1.681E-03
sb124m	0.000E+00	6.029E-10	6.098E-10	6.164E-10	6.231E-10	6.297E-10	6.364E-10	6.431E-10	6.498E-10	6.565E-10	6.633E-10
te124	2.114E-02	2.146E-02	2.188E-02	2.237E-02	2.291E-02	2.349E-02	2.409E-02	2.472E-02	2.537E-02	2.604E-02	2.671E-02
pd125	0.000E+00	1.639E-13	1.643E-13	1.646E-13	1.649E-13	1.652E-13	1.655E-13	1.658E-13	1.661E-13	1.664E-13	1.667E-13
ag125	0.000E+00	2.466E-11	2.469E-11	2.470E-11	2.471E-11	2.473E-11	2.474E-11	2.475E-11	2.477E-11	2.478E-11	2.479E-11
cd125	0.000E+00	3.411E-09	3.416E-09	3.419E-09	3.421E-09	3.424E-09	3.426E-09	3.428E-09	3.430E-09	3.432E-09	3.434E-09
in125	0.000E+00	9.122E-09	9.147E-09	9.166E-09	9.184E-09	9.202E-09	9.220E-09	9.237E-09	9.254E-09	9.271E-09	9.287E-09
in125m	0.000E+00	3.701E-08	3.713E-08	3.722E-08	3.730E-08	3.739E-08	3.748E-08	3.756E-08	3.764E-08	3.772E-08	3.780E-08
sn125	4.505E-05	1.780E-03	1.928E-03	1.944E-03	1.950E-03	1.955E-03	1.960E-03	1.965E-03	1.969E-03	1.974E-03	1.979E-03
sn125m	0.000E+00	4.106E-06	4.120E-06	4.130E-06	4.141E-06	4.151E-06	4.161E-06	4.171E-06	4.181E-06	4.190E-06	4.200E-06
sb125	4.888E-01	4.951E-01	5.028E-01	5.105E-01	5.181E-01	5.256E-01	5.329E-01	5.401E-01	5.472E-01	5.542E-01	5.610E-01
te125	8.229E-01	8.346E-01	8.464E-01	8.585E-01	8.706E-01	8.830E-01	8.955E-01	9.082E-01	9.210E-01	9.340E-01	9.472E-01
te125m	6.660E-03	6.636E-03	6.653E-03	6.700E-03	6.766E-03	6.844E-03	6.929E-03	7.018E-03	7.110E-03	7.202E-03	7.294E-03
pd126	0.000E+00	5.765E-14	5.783E-14	5.798E-14	5.812E-14	5.826E-14	5.841E-14	5.855E-14	5.869E-14	5.883E-14	5.897E-14

ag126	0.000E+00	4.684E-12	4.698E-12	4.709E-12	4.719E-12	4.730E-12	4.741E-12	4.752E-12	4.763E-12	4.774E-12	4.786E-12	
cd126	0.000E+00	1.328E-09	1.331E-09	1.334E-09	1.336E-09	1.339E-09	1.341E-09	1.343E-09	1.346E-09	1.348E-09	1.351E-09	
in126	0.000E+00	1.366E-08	1.370E-08	1.374E-08	1.378E-08	1.382E-08	1.385E-08	1.389E-08	1.392E-08	1.396E-08	1.399E-08	
sn126	2.454E+00	2.493E+00	2.532E+00	2.571E+00	2.610E+00	2.650E+00	2.689E+00	2.729E+00	2.768E+00	2.808E+00	2.848E+00	
sb126	8.117E-06	1.377E-04	1.571E-04	1.607E-04	1.621E-04	1.631E-04	1.641E-04	1.650E-04	1.660E-04	1.669E-04	1.678E-04	
sb126m	8.865E-10	2.197E-07	2.211E-07	2.223E-07	2.235E-07	2.246E-07	2.258E-07	2.269E-07	2.280E-07	2.291E-07	2.302E-07	
te126	4.170E-02	4.242E-02	4.326E-02	4.412E-02	4.499E-02	4.586E-02	4.675E-02	4.764E-02	4.854E-02	4.944E-02	5.035E-02	
xe126	7.150E-10	7.435E-10	7.730E-10	8.034E-10	8.347E-10	8.670E-10	9.003E-10	9.346E-10	9.699E-10	1.006E-09	1.044E-09	
ag127	0.000E+00	3.305E-12	3.317E-12	3.327E-12	3.338E-12	3.348E-12	3.358E-12	3.369E-12	3.379E-12	3.390E-12	3.400E-12	
cd127	0.000E+00	1.154E-09	1.158E-09	1.161E-09	1.164E-09	1.167E-09	1.170E-09	1.173E-09	1.176E-09	1.179E-09	1.182E-09	
in127	0.000E+00	9.634E-09	9.667E-09	9.693E-09	9.719E-09	9.745E-09	9.771E-09	9.796E-09	9.822E-09	9.847E-09	9.871E-09	
in127m	0.000E+00	3.149E-08	3.160E-08	3.169E-08	3.177E-08	3.185E-08	3.194E-08	3.202E-08	3.210E-08	3.219E-08	3.227E-08	
sn127	0.000E+00	1.280E-04	1.284E-04	1.288E-04	1.292E-04	1.295E-04	1.299E-04	1.302E-04	1.306E-04	1.309E-04	1.313E-04	
sn127m	0.000E+00	5.562E-06	5.582E-06	5.598E-06	5.614E-06	5.629E-06	5.644E-06	5.660E-06	5.675E-06	5.689E-06	5.704E-06	
sb127	1.813E-06	1.382E-02	1.389E-02	1.393E-02	1.397E-02	1.401E-02	1.404E-02	1.408E-02	1.412E-02	1.416E-02	1.419E-02	
te127	1.165E-04	1.288E-03	1.315E-03	1.336E-03	1.353E-03	1.368E-03	1.380E-03	1.391E-03	1.400E-03	1.408E-03	1.415E-03	
te127m	3.324E-02	3.828E-02	4.437E-02	4.930E-02	5.329E-02	5.652E-02	5.915E-02	6.129E-02	6.304E-02	6.448E-02	6.567E-02	
i127	5.490E+00	5.551E+00	5.626E+00	5.702E+00	5.780E+00	5.858E+00	5.937E+00	6.016E+00	6.096E+00	6.177E+00	6.258E+00	
xe127	1.303E-08	2.938E-08	3.857E-08	4.406E-08	4.766E-08	5.030E-08	5.246E-08	5.439E-08	5.622E-08	5.800E-08	5.979E-08	
ag128	0.000E+00	8.467E-13	8.493E-13	8.513E-13	8.532E-13	8.552E-13	8.572E-13	8.592E-13	8.612E-13	8.631E-13	8.651E-13	
cd128	0.000E+00	1.926E-09	1.930E-09	1.932E-09	1.935E-09	1.938E-09	1.941E-09	1.943E-09	1.946E-09	1.949E-09	1.952E-09	
in128	0.000E+00	1.284E-08	1.285E-08	1.285E-08	1.286E-08	1.286E-08	1.287E-08	1.287E-08	1.287E-08	1.288E-08	1.288E-08	
sn128	0.000E+00	2.365E-04	2.369E-04	2.371E-04	2.373E-04	2.376E-04	2.378E-04	2.380E-04	2.382E-04	2.384E-04	2.387E-04	
sb128	0.000E+00	2.362E-04	2.368E-04	2.373E-04	2.378E-04	2.383E-04	2.388E-04	2.393E-04	2.397E-04	2.402E-04	2.406E-04	
sb128m	0.000E+00	4.426E-05	4.434E-05	4.439E-05	4.444E-05	4.449E-05	4.454E-05	4.458E-05	4.463E-05	4.468E-05	4.472E-05	
te128	1.157E+01	1.173E+01	1.189E+01	1.205E+01	1.221E+01	1.237E+01	1.253E+01	1.269E+01	1.285E+01	1.301E+01	1.317E+01	
i128	0.000E+00	5.282E-06	5.370E-06	5.457E-06	5.545E-06	5.635E-06	5.725E-06	5.816E-06	5.908E-06	6.001E-06	6.094E-06	
xe128	2.234E-01	2.302E-01	2.370E-01	2.440E-01	2.511E-01	2.583E-01	2.656E-01	2.731E-01	2.806E-01	2.883E-01	2.961E-01	
cd129	0.000E+00	2.757E-10	2.764E-10	2.769E-10	2.775E-10	2.780E-10	2.785E-10	2.790E-10	2.795E-10	2.800E-10	2.806E-10	

case 6 fission products page 123
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
in129	0.000E+00	9.788E-09	9.800E-09	9.805E-09	9.811E-09	9.817E-09	9.823E-09	9.829E-09	9.835E-09	9.841E-09	9.847E-09
sn129	0.000E+00	7.746E-06	7.763E-06	7.775E-06	7.787E-06	7.798E-06	7.810E-06	7.821E-06	7.833E-06	7.844E-06	7.855E-06

sn129m	0.000E+00	2.261E-05	2.261E-05	2.260E-05	2.258E-05	2.257E-05	2.256E-05	2.254E-05	2.253E-05	2.252E-05	2.251E-05
sb129	0.000E+00	2.440E-03	2.445E-03	2.447E-03	2.450E-03	2.452E-03	2.455E-03	2.457E-03	2.460E-03	2.462E-03	2.465E-03
te129	2.174E-05	5.824E-04	5.980E-04	6.057E-04	6.098E-04	6.122E-04	6.137E-04	6.147E-04	6.156E-04	6.163E-04	6.169E-04
te129m	2.358E-02	5.539E-02	7.119E-02	7.895E-02	8.279E-02	8.471E-02	8.570E-02	8.624E-02	8.655E-02	8.675E-02	8.689E-02
i129	2.347E+01	2.374E+01	2.404E+01	2.434E+01	2.465E+01	2.495E+01	2.526E+01	2.557E+01	2.588E+01	2.619E+01	2.650E+01
xe129	8.347E-04	8.646E-04	9.015E-04	9.400E-04	9.797E-04	1.021E-03	1.063E-03	1.106E-03	1.151E-03	1.197E-03	1.244E-03
xe129m	1.184E-07	6.565E-06	7.211E-06	7.472E-06	7.712E-06	7.954E-06	8.201E-06	8.453E-06	8.710E-06	8.971E-06	9.237E-06
cd130	0.000E+00	1.624E-10	1.627E-10	1.629E-10	1.631E-10	1.633E-10	1.636E-10	1.638E-10	1.640E-10	1.642E-10	1.645E-10
in130	0.000E+00	3.716E-09	3.712E-09	3.706E-09	3.700E-09	3.695E-09	3.689E-09	3.684E-09	3.678E-09	3.673E-09	3.668E-09
sn130	0.000E+00	3.473E-05	3.473E-05	3.471E-05	3.470E-05	3.468E-05	3.466E-05	3.464E-05	3.462E-05	3.461E-05	3.459E-05
sb130	0.000E+00	1.237E-04	1.240E-04	1.241E-04	1.242E-04	1.243E-04	1.245E-04	1.246E-04	1.247E-04	1.248E-04	1.249E-04
sb130m	0.000E+00	7.915E-05	7.917E-05	7.913E-05	7.909E-05	7.906E-05	7.902E-05	7.899E-05	7.896E-05	7.893E-05	7.889E-05
te130	4.692E+01	4.751E+01	4.810E+01	4.869E+01	4.929E+01	4.988E+01	5.047E+01	5.106E+01	5.166E+01	5.225E+01	5.284E+01
i130	0.000E+00	3.871E-04	3.930E-04	3.988E-04	4.047E-04	4.106E-04	4.165E-04	4.225E-04	4.285E-04	4.345E-04	4.406E-04
i130m	0.000E+00	2.482E-06	2.520E-06	2.558E-06	2.596E-06	2.635E-06	2.674E-06	2.713E-06	2.752E-06	2.792E-06	2.831E-06
xe130	7.125E-01	7.317E-01	7.515E-01	7.716E-01	7.920E-01	8.127E-01	8.337E-01	8.550E-01	8.766E-01	8.984E-01	9.206E-01
cd131	0.000E+00	5.725E-12	5.741E-12	5.753E-12	5.765E-12	5.777E-12	5.790E-12	5.802E-12	5.814E-12	5.826E-12	5.838E-12
in131	0.000E+00	1.396E-09	1.398E-09	1.398E-09	1.398E-09	1.398E-09	1.399E-09	1.399E-09	1.400E-09	1.400E-09	1.400E-09
sn131	0.000E+00	5.214E-06	5.218E-06	5.219E-06	5.219E-06	5.220E-06	5.221E-06	5.222E-06	5.223E-06	5.224E-06	5.225E-06
sb131	0.000E+00	5.089E-04	5.090E-04	5.088E-04	5.085E-04	5.083E-04	5.080E-04	5.078E-04	5.076E-04	5.073E-04	5.071E-04
te131	6.721E-17	6.000E-04	6.004E-04	6.003E-04	6.002E-04	6.002E-04	6.001E-04	6.000E-04	6.000E-04	5.999E-04	5.999E-04
te131m	2.149E-14	1.057E-02	1.060E-02	1.062E-02	1.064E-02	1.065E-02	1.067E-02	1.069E-02	1.070E-02	1.072E-02	1.074E-02
i131	4.039E-03	3.126E-01	3.289E-01	3.297E-01	3.298E-01	3.299E-01	3.300E-01	3.300E-01	3.301E-01	3.301E-01	3.302E-01
xe131	5.997E+01	6.019E+01	6.071E+01	6.124E+01	6.177E+01	6.230E+01	6.282E+01	6.333E+01	6.384E+01	6.435E+01	6.485E+01
xe131m	6.608E-04	4.606E-03	6.017E-03	6.258E-03	6.303E-03	6.320E-03	6.334E-03	6.347E-03	6.359E-03	6.372E-03	6.385E-03
cd132	0.000E+00	8.964E-13	8.989E-13	9.008E-13	9.026E-13	9.045E-13	9.064E-13	9.082E-13	9.101E-13	9.119E-13	9.137E-13
in132	0.000E+00	2.591E-10	2.592E-10	2.593E-10	2.593E-10	2.593E-10	2.594E-10	2.594E-10	2.594E-10	2.595E-10	2.596E-10
sn132	0.000E+00	4.392E-06	4.398E-06	4.401E-06	4.403E-06	4.406E-06	4.409E-06	4.412E-06	4.415E-06	4.418E-06	4.421E-06
sb132	0.000E+00	5.711E-05	5.718E-05	5.721E-05	5.723E-05	5.726E-05	5.728E-05	5.731E-05	5.734E-05	5.736E-05	5.739E-05
sb132m	0.000E+00	3.562E-05	3.562E-05	3.560E-05	3.557E-05	3.555E-05	3.553E-05	3.551E-05	3.549E-05	3.547E-05	3.545E-05
te132	5.227E-06	1.933E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01	1.936E-01
i132	1.573E-07	5.759E-03	5.767E-03	5.767E-03	5.768E-03	5.768E-03	5.768E-03	5.769E-03	5.769E-03	5.769E-03	5.770E-03
xe132	1.357E+02	1.374E+02	1.393E+02	1.413E+02	1.432E+02	1.451E+02	1.471E+02	1.490E+02	1.510E+02	1.530E+02	1.549E+02
cs132	2.906E-08	6.686E-06	6.939E-06	7.035E-06	7.127E-06	7.219E-06	7.310E-06	7.402E-06	7.494E-06	7.586E-06	7.678E-06
ba132	1.780E-05	1.815E-05	1.863E-05	1.911E-05	1.961E-05	2.011E-05	2.061E-05	2.113E-05	2.165E-05	2.217E-05	2.270E-05
in133	0.000E+00	5.174E-12	5.191E-12	5.204E-12	5.216E-12	5.229E-12	5.242E-12	5.255E-12	5.268E-12	5.281E-12	5.293E-12
sn133	0.000E+00	4.292E-08	4.298E-08	4.301E-08	4.304E-08	4.308E-08	4.311E-08	4.314E-08	4.318E-08	4.321E-08	4.325E-08
sb133	0.000E+00	4.534E-05	4.532E-05	4.527E-05	4.523E-05	4.518E-05	4.514E-05	4.509E-05	4.505E-05	4.501E-05	4.497E-05

te133 0.000E+00 3.958E-04 3.958E-04 3.955E-04 3.952E-04 3.949E-04 3.946E-04 3.944E-04 3.941E-04 3.938E-04 3.936E-04
te133m 0.000E+00 1.444E-03 1.444E-03 1.443E-03 1.442E-03 1.440E-03 1.439E-03 1.438E-03 1.437E-03 1.436E-03 1.434E-03
i133 1.185E-18 7.375E-02 7.377E-02 7.375E-02 7.372E-02 7.369E-02 7.366E-02 7.364E-02 7.361E-02 7.359E-02 7.356E-02
i133m 0.000E+00 6.944E-07 6.954E-07 6.960E-07 6.965E-07 6.971E-07 6.976E-07 6.982E-07 6.987E-07 6.992E-07 6.997E-07
xe133 7.113E-04 4.266E-01 4.320E-01 4.319E-01 4.317E-01 4.316E-01 4.314E-01 4.313E-01 4.312E-01 4.310E-01 4.309E-01
xe133m 1.765E-09 5.911E-03 5.916E-03 5.916E-03 5.917E-03 5.917E-03 5.918E-03 5.918E-03 5.919E-03 5.919E-03 5.919E-03
cs133 1.533E+02 1.544E+02 1.561E+02 1.578E+02 1.594E+02 1.610E+02 1.627E+02 1.643E+02 1.659E+02 1.675E+02 1.691E+02
ba133 1.125E-08 1.144E-08 1.163E-08 1.182E-08 1.201E-08 1.219E-08 1.238E-08 1.257E-08 1.276E-08 1.295E-08 1.313E-08
in134 0.000E+00 6.294E-13 6.315E-13 6.331E-13 6.347E-13 6.364E-13 6.380E-13 6.396E-13 6.412E-13 6.429E-13 6.445E-13
sn134 0.000E+00 5.406E-09 5.421E-09 5.432E-09 5.444E-09 5.456E-09 5.468E-09 5.479E-09 5.491E-09 5.503E-09 5.515E-09

case 6 fission products page 124
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
sb134	0.000E+00	4.655E-08	4.651E-08	4.643E-08	4.637E-08	4.630E-08	4.623E-08	4.617E-08	4.611E-08	4.605E-08	4.599E-08
sb134m	0.000E+00	4.303E-07	4.308E-07	4.310E-07	4.312E-07	4.314E-07	4.316E-07	4.318E-07	4.321E-07	4.323E-07	4.326E-07
te134	0.000E+00	2.143E-03	2.141E-03	2.138E-03	2.135E-03	2.132E-03	2.129E-03	2.126E-03	2.123E-03	2.120E-03	2.117E-03
i134	0.000E+00	3.451E-03	3.451E-03	3.449E-03	3.446E-03	3.444E-03	3.442E-03	3.440E-03	3.438E-03	3.435E-03	3.433E-03
i134m	0.000E+00	2.249E-05	2.255E-05	2.260E-05	2.265E-05	2.269E-05	2.274E-05	2.278E-05	2.283E-05	2.287E-05	2.291E-05
xe134	1.951E+02	1.975E+02	1.998E+02	2.021E+02	2.045E+02	2.068E+02	2.092E+02	2.115E+02	2.138E+02	2.162E+02	2.185E+02
xe134m	0.000E+00	6.157E-09	6.174E-09	6.186E-09	6.198E-09	6.210E-09	6.222E-09	6.233E-09	6.244E-09	6.255E-09	6.266E-09
cs134	5.164E+00	5.381E+00	5.595E+00	5.807E+00	6.017E+00	6.224E+00	6.430E+00	6.633E+00	6.835E+00	7.035E+00	7.233E+00
cs134m	0.000E+00	1.572E-04	1.594E-04	1.616E-04	1.637E-04	1.658E-04	1.680E-04	1.701E-04	1.722E-04	1.744E-04	1.765E-04
ba134	9.911E+00	1.008E+01	1.025E+01	1.043E+01	1.062E+01	1.081E+01	1.101E+01	1.122E+01	1.143E+01	1.165E+01	1.187E+01
sn135	0.000E+00	1.887E-10	1.893E-10	1.897E-10	1.902E-10	1.906E-10	1.911E-10	1.915E-10	1.920E-10	1.925E-10	1.929E-10
sb135	0.000E+00	4.491E-08	4.496E-08	4.499E-08	4.503E-08	4.506E-08	4.509E-08	4.513E-08	4.517E-08	4.521E-08	4.524E-08
te135	0.000E+00	8.964E-06	8.968E-06	8.966E-06	8.965E-06	8.963E-06	8.962E-06	8.961E-06	8.960E-06	8.959E-06	8.959E-06
i135	0.000E+00	2.250E-02	2.251E-02	2.251E-02	2.250E-02	2.250E-02	2.250E-02	2.249E-02	2.249E-02	2.249E-02	2.248E-02
xe135	0.000E+00	1.803E-02	1.802E-02	1.800E-02	1.798E-02	1.796E-02	1.794E-02	1.792E-02	1.790E-02	1.788E-02	1.786E-02
xe135m	0.000E+00	1.940E-04	1.942E-04	1.944E-04	1.945E-04	1.946E-04	1.947E-04	1.948E-04	1.950E-04	1.951E-04	1.952E-04
cs135	6.903E+01	7.013E+01	7.126E+01	7.238E+01	7.351E+01	7.463E+01	7.575E+01	7.687E+01	7.799E+01	7.911E+01	8.023E+01
cs135m	0.000E+00	1.709E-05	1.783E-05	1.855E-05	1.927E-05	1.998E-05	2.070E-05	2.140E-05	2.211E-05	2.281E-05	2.351E-05
ba135	3.135E-02	3.375E-02	3.621E-02	3.873E-02	4.129E-02	4.390E-02	4.657E-02	4.929E-02	5.207E-02	5.490E-02	5.780E-02
ba135m	1.129E-17	1.953E-05	1.993E-05	2.033E-05	2.075E-05	2.118E-05	2.162E-05	2.209E-05	2.256E-05	2.305E-05	2.355E-05
sn136	0.000E+00	2.867E-11	2.876E-11	2.883E-11	2.890E-11	2.897E-11	2.904E-11	2.910E-11	2.917E-11	2.924E-11	2.931E-11

sb136	0.000E+00	3.434E-09	3.441E-09	3.447E-09	3.452E-09	3.457E-09	3.463E-09	3.469E-09	3.474E-09	3.480E-09	3.486E-09	
te136	0.000E+00	3.644E-06	3.644E-06	3.641E-06	3.638E-06	3.636E-06	3.634E-06	3.632E-06	3.630E-06	3.628E-06	3.626E-06	
i136	0.000E+00	3.576E-05	3.575E-05	3.572E-05	3.569E-05	3.566E-05	3.563E-05	3.560E-05	3.557E-05	3.554E-05	3.552E-05	
i136m	0.000E+00	9.961E-06	9.961E-06	9.955E-06	9.948E-06	9.942E-06	9.936E-06	9.931E-06	9.925E-06	9.919E-06	9.913E-06	
xe136	2.710E+02	2.740E+02	2.771E+02	2.802E+02	2.832E+02	2.863E+02	2.894E+02	2.925E+02	2.955E+02	2.986E+02	3.017E+02	
cs136	1.748E-03	2.575E-02	3.000E-02	3.107E-02	3.164E-02	3.213E-02	3.260E-02	3.308E-02	3.355E-02	3.403E-02	3.450E-02	
ba136	2.366E+00	2.397E+00	2.449E+00	2.506E+00	2.563E+00	2.622E+00	2.681E+00	2.741E+00	2.803E+00	2.865E+00	2.927E+00	
ba136m	5.311E-11	7.823E-10	9.113E-10	9.439E-10	9.612E-10	9.760E-10	9.904E-10	1.005E-09	1.019E-09	1.034E-09	1.048E-09	
sb137	0.000E+00	1.669E-09	1.655E-09	1.640E-09	1.625E-09	1.610E-09	1.596E-09	1.581E-09	1.567E-09	1.552E-09	1.538E-09	
te137	0.000E+00	2.508E-07	2.510E-07	2.510E-07	2.510E-07	2.510E-07	2.510E-07	2.511E-07	2.511E-07	2.512E-07	2.512E-07	
i137	0.000E+00	1.142E-05	1.142E-05	1.142E-05	1.141E-05	1.141E-05	1.141E-05	1.140E-05	1.140E-05	1.140E-05	1.139E-05	
xe137	0.000E+00	2.110E-04	2.111E-04	2.110E-04	2.109E-04	2.109E-04	2.108E-04	2.108E-04	2.107E-04	2.107E-04	2.106E-04	
cs137	1.491E+02	1.508E+02	1.525E+02	1.542E+02	1.559E+02	1.576E+02	1.593E+02	1.610E+02	1.627E+02	1.643E+02	1.660E+02	
ba137	1.631E+01	1.664E+01	1.697E+01	1.731E+01	1.765E+01	1.799E+01	1.834E+01	1.869E+01	1.904E+01	1.940E+01	1.977E+01	
ba137m	2.277E-05	2.309E-05	2.335E-05	2.361E-05	2.387E-05	2.413E-05	2.438E-05	2.464E-05	2.490E-05	2.516E-05	2.541E-05	
sb138	0.000E+00	1.041E-11	1.045E-11	1.047E-11	1.050E-11	1.053E-11	1.056E-11	1.058E-11	1.061E-11	1.064E-11	1.067E-11	
te138	0.000E+00	2.507E-08	2.513E-08	2.517E-08	2.521E-08	2.525E-08	2.530E-08	2.534E-08	2.538E-08	2.543E-08	2.547E-08	
i138	0.000E+00	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	1.547E-06	
xe138	0.000E+00	7.235E-04	7.233E-04	7.225E-04	7.217E-04	7.210E-04	7.203E-04	7.196E-04	7.189E-04	7.182E-04	7.175E-04	
cs138	0.000E+00	1.804E-03	1.803E-03	1.802E-03	1.800E-03	1.799E-03	1.798E-03	1.796E-03	1.795E-03	1.794E-03	1.792E-03	
cs138m	0.000E+00	7.333E-06	7.352E-06	7.365E-06	7.377E-06	7.390E-06	7.402E-06	7.414E-06	7.426E-06	7.438E-06	7.450E-06	
ba138	1.660E+02	1.680E+02	1.699E+02	1.719E+02	1.739E+02	1.759E+02	1.778E+02	1.798E+02	1.818E+02	1.837E+02	1.857E+02	
la138	1.019E-03	1.032E-03	1.045E-03	1.058E-03	1.071E-03	1.085E-03	1.098E-03	1.111E-03	1.124E-03	1.137E-03	1.150E-03	
sb139	0.000E+00	9.959E-13	9.990E-13	1.001E-12	1.004E-12	1.006E-12	1.009E-12	1.011E-12	1.014E-12	1.016E-12	1.019E-12	
te139	0.000E+00	1.660E-09	1.664E-09	1.667E-09	1.670E-09	1.674E-09	1.677E-09	1.680E-09	1.683E-09	1.686E-09	1.689E-09	
i139	0.000E+00	2.563E-07	2.558E-07	2.551E-07	2.545E-07	2.539E-07	2.532E-07	2.526E-07	2.520E-07	2.514E-07	2.509E-07	
xe139	0.000E+00	2.501E-05	2.499E-05	2.494E-05	2.490E-05	2.486E-05	2.481E-05	2.477E-05	2.473E-05	2.469E-05	2.465E-05	
cs139	0.000E+00	4.865E-04	4.864E-04	4.859E-04	4.854E-04	4.850E-04	4.845E-04	4.841E-04	4.836E-04	4.832E-04	4.827E-04	
ba139	0.000E+00	4.567E-03	4.566E-03	4.562E-03	4.558E-03	4.554E-03	4.550E-03	4.547E-03	4.543E-03	4.539E-03	4.535E-03	

case 6 fission products page 125
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d		
la139	1.572E+02	1.590E+02	1.608E+02	1.627E+02	1.645E+02	1.663E+02	1.682E+02	1.700E+02	1.718E+02	1.736E+02	1.755E+02	
ce139	5.368E-07	6.410E-07	7.297E-07	8.057E-07	8.711E-07	9.276E-07	9.766E-07	1.019E-06	1.057E-06	1.090E-06	1.119E-06	

pr139	0.000E+00	5.189E-11	5.251E-11	5.318E-11	5.389E-11	5.462E-11	5.535E-11	5.610E-11	5.685E-11	5.760E-11	5.835E-11
te140	0.000E+00	3.717E-10	3.724E-10	3.727E-10	3.731E-10	3.734E-10	3.738E-10	3.742E-10	3.746E-10	3.749E-10	3.753E-10
i140	0.000E+00	2.542E-08	2.543E-08	2.543E-08	2.543E-08	2.542E-08	2.542E-08	2.542E-08	2.542E-08	2.543E-08	2.543E-08
xe140	0.000E+00	5.925E-06	5.916E-06	5.903E-06	5.890E-06	5.877E-06	5.865E-06	5.853E-06	5.840E-06	5.829E-06	5.817E-06
cs140	0.000E+00	5.012E-05	5.010E-05	5.005E-05	4.999E-05	4.994E-05	4.989E-05	4.984E-05	4.979E-05	4.974E-05	4.970E-05
ba140	5.401E-02	8.542E-01	9.746E-01	9.921E-01	9.941E-01	9.937E-01	9.930E-01	9.923E-01	9.915E-01	9.908E-01	9.901E-01
la140	8.183E-03	1.156E-01	1.338E-01	1.366E-01	1.369E-01	1.369E-01	1.368E-01	1.368E-01	1.367E-01	1.367E-01	1.366E-01
ce140	1.650E+02	1.661E+02	1.680E+02	1.700E+02	1.720E+02	1.740E+02	1.760E+02	1.780E+02	1.800E+02	1.820E+02	1.840E+02
pr140	0.000E+00	2.330E-09	2.357E-09	2.387E-09	2.419E-09	2.452E-09	2.485E-09	2.519E-09	2.552E-09	2.586E-09	2.620E-09
te141	0.000E+00	1.401E-12	1.405E-12	1.409E-12	1.412E-12	1.416E-12	1.419E-12	1.423E-12	1.426E-12	1.429E-12	1.433E-12
i141	0.000E+00	1.889E-09	1.893E-09	1.895E-09	1.898E-09	1.901E-09	1.904E-09	1.906E-09	1.909E-09	1.912E-09	1.915E-09
xe141	0.000E+00	2.942E-07	2.939E-07	2.934E-07	2.930E-07	2.926E-07	2.922E-07	2.918E-07	2.914E-07	2.910E-07	2.906E-07
cs141	0.000E+00	1.505E-05	1.504E-05	1.502E-05	1.501E-05	1.499E-05	1.497E-05	1.495E-05	1.494E-05	1.492E-05	1.490E-05
ba141	0.000E+00	9.064E-04	9.061E-04	9.052E-04	9.043E-04	9.034E-04	9.025E-04	9.017E-04	9.008E-04	9.000E-04	8.991E-04
la141	0.000E+00	1.179E-02	1.178E-02	1.177E-02	1.176E-02	1.175E-02	1.174E-02	1.173E-02	1.172E-02	1.171E-02	1.170E-02
ce141	6.242E-01	1.522E+00	1.954E+00	2.158E+00	2.255E+00	2.299E+00	2.319E+00	2.328E+00	2.331E+00	2.331E+00	2.330E+00
pr141	1.448E+02	1.456E+02	1.469E+02	1.483E+02	1.499E+02	1.516E+02	1.532E+02	1.549E+02	1.566E+02	1.583E+02	1.599E+02
nd141	0.000E+00	7.576E-11	7.650E-11	7.726E-11	7.803E-11	7.880E-11	7.957E-11	8.032E-11	8.108E-11	8.182E-11	8.257E-11
te142	0.000E+00	1.226E-12	1.231E-12	1.235E-12	1.240E-12	1.245E-12	1.249E-12	1.254E-12	1.259E-12	1.263E-12	1.268E-12
i142	0.000E+00	2.293E-10	2.303E-10	2.312E-10	2.321E-10	2.330E-10	2.339E-10	2.348E-10	2.357E-10	2.367E-10	2.376E-10
xe142	0.000E+00	8.347E-08	8.346E-08	8.340E-08	8.334E-08	8.328E-08	8.323E-08	8.317E-08	8.313E-08	8.308E-08	8.303E-08
cs142	0.000E+00	5.923E-07	5.918E-07	5.910E-07	5.902E-07	5.894E-07	5.886E-07	5.879E-07	5.871E-07	5.864E-07	5.857E-07
ba142	0.000E+00	5.003E-04	5.000E-04	4.993E-04	4.987E-04	4.980E-04	4.974E-04	4.968E-04	4.962E-04	4.955E-04	4.949E-04
la142	0.000E+00	4.470E-03	4.468E-03	4.463E-03	4.458E-03	4.452E-03	4.447E-03	4.442E-03	4.437E-03	4.432E-03	4.427E-03
ce142	1.463E+02	1.480E+02	1.497E+02	1.515E+02	1.532E+02	1.549E+02	1.566E+02	1.583E+02	1.599E+02	1.616E+02	1.633E+02
pr142	9.363E-22	1.780E-03	1.801E-03	1.824E-03	1.849E-03	1.874E-03	1.899E-03	1.925E-03	1.950E-03	1.976E-03	2.002E-03
pr142m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
nd142	1.921E+00	1.972E+00	2.026E+00	2.080E+00	2.135E+00	2.191E+00	2.247E+00	2.305E+00	2.362E+00	2.421E+00	2.481E+00
i143	0.000E+00	5.409E-12	5.425E-12	5.437E-12	5.449E-12	5.461E-12	5.473E-12	5.486E-12	5.498E-12	5.510E-12	5.522E-12
xe143	0.000E+00	1.009E-08	1.010E-08	1.011E-08	1.011E-08	1.012E-08	1.013E-08	1.013E-08	1.014E-08	1.014E-08	1.015E-08
cs143	0.000E+00	3.113E-07	3.108E-07	3.101E-07	3.094E-07	3.088E-07	3.081E-07	3.075E-07	3.068E-07	3.062E-07	3.056E-07
ba143	0.000E+00	9.719E-06	9.708E-06	9.690E-06	9.673E-06	9.656E-06	9.639E-06	9.622E-06	9.606E-06	9.590E-06	9.574E-06
la143	0.000E+00	6.585E-04	6.578E-04	6.568E-04	6.557E-04	6.546E-04	6.536E-04	6.526E-04	6.515E-04	6.505E-04	6.495E-04
ce143	2.138E-12	9.295E-02	9.286E-02	9.271E-02	9.257E-02	9.242E-02	9.228E-02	9.213E-02	9.199E-02	9.185E-02	9.172E-02
pr143	6.323E-02	7.303E-01	8.594E-01	8.799E-01	8.822E-01	8.815E-01	8.802E-01	8.788E-01	8.775E-01	8.762E-01	8.748E-01
nd143	1.114E+02	1.116E+02	1.123E+02	1.131E+02	1.139E+02	1.148E+02	1.156E+02	1.164E+02	1.172E+02	1.180E+02	1.188E+02
i144	0.000E+00	8.013E-14	8.038E-14	8.058E-14	8.078E-14	8.098E-14	8.118E-14	8.138E-14	8.157E-14	8.177E-14	8.197E-14
xe144	0.000E+00	2.535E-09	2.540E-09	2.544E-09	2.548E-09	2.552E-09	2.556E-09	2.560E-09	2.564E-09	2.568E-09	2.572E-09

cs144	0.000E+00	5.356E-08	5.356E-08	5.352E-08	5.348E-08	5.345E-08	5.342E-08	5.339E-08	5.336E-08	5.334E-08	5.331E-08
ba144	0.000E+00	5.886E-06	5.875E-06	5.861E-06	5.846E-06	5.832E-06	5.818E-06	5.804E-06	5.790E-06	5.776E-06	5.763E-06
la144	0.000E+00	2.806E-05	2.803E-05	2.797E-05	2.792E-05	2.787E-05	2.782E-05	2.776E-05	2.771E-05	2.766E-05	2.761E-05
ce144	8.424E+00	9.151E+00	9.818E+00	1.043E+01	1.099E+01	1.149E+01	1.196E+01	1.239E+01	1.278E+01	1.313E+01	1.345E+01
pr144	3.548E-04	3.866E-04	4.149E-04	4.406E-04	4.641E-04	4.856E-04	5.052E-04	5.231E-04	5.395E-04	5.544E-04	5.681E-04
pr144m	2.069E-06	2.262E-06	2.426E-06	2.575E-06	2.712E-06	2.838E-06	2.952E-06	3.057E-06	3.152E-06	3.239E-06	3.319E-06
nd144	1.535E+02	1.550E+02	1.566E+02	1.582E+02	1.599E+02	1.617E+02	1.635E+02	1.653E+02	1.672E+02	1.691E+02	1.710E+02
i145	0.000E+00	3.345E-15	3.356E-15	3.364E-15	3.372E-15	3.380E-15	3.388E-15	3.396E-15	3.404E-15	3.412E-15	3.419E-15
xe145	0.000E+00	2.159E-10	2.167E-10	2.173E-10	2.179E-10	2.186E-10	2.192E-10	2.199E-10	2.205E-10	2.211E-10	2.217E-10
cs145	0.000E+00	7.883E-09	7.896E-09	7.904E-09	7.913E-09	7.921E-09	7.930E-09	7.939E-09	7.948E-09	7.957E-09	7.967E-09

case 6 fission products page 126
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
ba145	0.000E+00	1.004E-06	1.003E-06	1.001E-06	9.991E-07	9.974E-07	9.957E-07	9.941E-07	9.925E-07	9.909E-07	9.893E-07
la145	0.000E+00	1.192E-05	1.191E-05	1.189E-05	1.187E-05	1.185E-05	1.184E-05	1.182E-05	1.180E-05	1.178E-05	1.177E-05
ce145	0.000E+00	9.756E-05	9.749E-05	9.736E-05	9.723E-05	9.710E-05	9.697E-05	9.684E-05	9.671E-05	9.659E-05	9.647E-05
pr145	0.000E+00	1.165E-02	1.164E-02	1.162E-02	1.161E-02	1.159E-02	1.158E-02	1.156E-02	1.155E-02	1.153E-02	1.152E-02
nd145	9.000E+01	9.092E+01	9.186E+01	9.278E+01	9.370E+01	9.462E+01	9.554E+01	9.645E+01	9.735E+01	9.825E+01	9.915E+01
pm145	7.576E-05	7.755E-05	7.957E-05	8.180E-05	8.423E-05	8.685E-05	8.965E-05	9.261E-05	9.574E-05	9.901E-05	1.024E-04
sm145	2.599E-05	2.933E-05	3.250E-05	3.550E-05	3.835E-05	4.105E-05	4.362E-05	4.606E-05	4.839E-05	5.061E-05	5.274E-05
xe146	0.000E+00	1.209E-11	1.213E-11	1.216E-11	1.219E-11	1.222E-11	1.225E-11	1.228E-11	1.230E-11	1.233E-11	1.236E-11
cs146	0.000E+00	9.714E-10	9.708E-10	9.696E-10	9.685E-10	9.673E-10	9.663E-10	9.652E-10	9.642E-10	9.632E-10	9.622E-10
ba146	0.000E+00	2.620E-07	2.615E-07	2.609E-07	2.602E-07	2.596E-07	2.589E-07	2.583E-07	2.577E-07	2.571E-07	2.565E-07
la146	0.000E+00	1.957E-06	1.954E-06	1.951E-06	1.947E-06	1.944E-06	1.941E-06	1.937E-06	1.934E-06	1.931E-06	1.928E-06
ce146	0.000E+00	3.535E-04	3.534E-04	3.530E-04	3.527E-04	3.524E-04	3.520E-04	3.517E-04	3.514E-04	3.511E-04	3.508E-04
pr146	0.000E+00	6.368E-04	6.366E-04	6.360E-04	6.355E-04	6.349E-04	6.343E-04	6.338E-04	6.332E-04	6.327E-04	6.322E-04
nd146	8.642E+01	8.755E+01	8.868E+01	8.982E+01	9.095E+01	9.209E+01	9.323E+01	9.437E+01	9.551E+01	9.666E+01	9.780E+01
pm146	4.291E-04	4.329E-04	4.366E-04	4.404E-04	4.443E-04	4.483E-04	4.524E-04	4.565E-04	4.607E-04	4.649E-04	4.692E-04
sm146	1.282E-03	1.343E-03	1.404E-03	1.467E-03	1.530E-03	1.593E-03	1.657E-03	1.722E-03	1.787E-03	1.853E-03	1.920E-03
xe147	0.000E+00	1.357E-14	1.361E-14	1.364E-14	1.368E-14	1.371E-14	1.374E-14	1.377E-14	1.381E-14	1.384E-14	1.387E-14
cs147	0.000E+00	3.689E-11	3.701E-11	3.710E-11	3.719E-11	3.728E-11	3.738E-11	3.747E-11	3.756E-11	3.765E-11	3.774E-11
ba147	0.000E+00	1.483E-08	1.485E-08	1.487E-08	1.488E-08	1.490E-08	1.491E-08	1.493E-08	1.495E-08	1.496E-08	1.498E-08
la147	0.000E+00	6.063E-07	6.064E-07	6.061E-07	6.059E-07	6.056E-07	6.054E-07	6.052E-07	6.050E-07	6.048E-07	6.046E-07
ce147	0.000E+00	1.870E-05	1.870E-05	1.869E-05	1.868E-05	1.867E-05	1.865E-05	1.864E-05	1.863E-05	1.862E-05	1.861E-05

pr147	0.000E+00	2.859E-04	2.859E-04	2.858E-04	2.856E-04	2.854E-04	2.853E-04	2.851E-04	2.850E-04	2.848E-04	2.847E-04	
nd147	1.192E-02	2.990E-01	3.308E-01	3.342E-01	3.344E-01	3.343E-01	3.342E-01	3.340E-01	3.339E-01	3.337E-01	3.336E-01	
pm147	1.401E+01	1.390E+01	1.404E+01	1.420E+01	1.436E+01	1.451E+01	1.466E+01	1.479E+01	1.493E+01	1.505E+01	1.517E+01	
sm147	2.573E+01	2.591E+01	2.609E+01	2.628E+01	2.646E+01	2.665E+01	2.684E+01	2.703E+01	2.723E+01	2.742E+01	2.762E+01	
cs148	0.000E+00	2.565E-12	2.573E-12	2.580E-12	2.586E-12	2.593E-12	2.599E-12	2.606E-12	2.613E-12	2.619E-12	2.626E-12	
ba148	0.000E+00	2.609E-09	2.616E-09	2.621E-09	2.626E-09	2.632E-09	2.637E-09	2.642E-09	2.647E-09	2.653E-09	2.658E-09	
la148	0.000E+00	4.639E-08	4.643E-08	4.645E-08	4.647E-08	4.649E-08	4.651E-08	4.653E-08	4.655E-08	4.658E-08	4.661E-08	
ce148	0.000E+00	1.320E-05	1.320E-05	1.319E-05	1.319E-05	1.318E-05	1.318E-05	1.317E-05	1.317E-05	1.316E-05	1.316E-05	
pr148	0.000E+00	3.741E-05	3.743E-05	3.742E-05	3.742E-05	3.741E-05	3.741E-05	3.740E-05	3.740E-05	3.740E-05	3.739E-05	
nd148	4.713E+01	4.770E+01	4.827E+01	4.884E+01	4.941E+01	4.998E+01	5.055E+01	5.112E+01	5.168E+01	5.225E+01	5.282E+01	
pm148	2.189E-04	2.320E-02	2.370E-02	2.405E-02	2.438E-02	2.470E-02	2.501E-02	2.530E-02	2.559E-02	2.587E-02	2.614E-02	
pm148m	2.654E-02	5.714E-02	6.424E-02	6.644E-02	6.757E-02	6.844E-02	6.924E-02	6.999E-02	7.070E-02	7.139E-02	7.205E-02	
sm148	1.397E+01	1.425E+01	1.455E+01	1.487E+01	1.518E+01	1.550E+01	1.583E+01	1.615E+01	1.648E+01	1.682E+01	1.716E+01	
cs149	0.000E+00	2.516E-14	2.524E-14	2.531E-14	2.537E-14	2.543E-14	2.550E-14	2.556E-14	2.562E-14	2.568E-14	2.575E-14	
ba149	0.000E+00	3.381E-10	3.392E-10	3.400E-10	3.408E-10	3.417E-10	3.426E-10	3.434E-10	3.443E-10	3.451E-10	3.460E-10	
la149	0.000E+00	3.098E-08	3.104E-08	3.109E-08	3.113E-08	3.118E-08	3.123E-08	3.127E-08	3.132E-08	3.137E-08	3.142E-08	
ce149	0.000E+00	6.380E-07	6.384E-07	6.384E-07	6.385E-07	6.385E-07	6.386E-07	6.387E-07	6.388E-07	6.389E-07	6.390E-07	
pr149	0.000E+00	2.604E-05	2.607E-05	2.608E-05	2.610E-05	2.611E-05	2.613E-05	2.614E-05	2.615E-05	2.617E-05	2.618E-05	
nd149	0.000E+00	1.275E-03	1.277E-03	1.278E-03	1.279E-03	1.281E-03	1.282E-03	1.283E-03	1.284E-03	1.285E-03	1.287E-03	
pm149	9.963E-09	4.484E-02	4.564E-02	4.592E-02	4.609E-02	4.623E-02	4.637E-02	4.650E-02	4.663E-02	4.675E-02	4.688E-02	
sm149	3.025E-01	2.572E-01	2.643E-01	2.668E-01	2.676E-01	2.679E-01	2.681E-01	2.682E-01	2.684E-01	2.685E-01	2.686E-01	
eu149	1.260E-11	1.512E-11	1.660E-11	1.735E-11	1.761E-11	1.753E-11	1.725E-11	1.684E-11	1.638E-11	1.589E-11	1.541E-11	
cs150	0.000E+00	1.648E-15	1.653E-15	1.657E-15	1.662E-15	1.666E-15	1.670E-15	1.674E-15	1.678E-15	1.683E-15	1.687E-15	
ba150	0.000E+00	4.285E-11	4.300E-11	4.311E-11	4.323E-11	4.335E-11	4.347E-11	4.359E-11	4.371E-11	4.383E-11	4.394E-11	
la150	0.000E+00	1.351E-09	1.356E-09	1.360E-09	1.364E-09	1.368E-09	1.372E-09	1.376E-09	1.380E-09	1.384E-09	1.388E-09	
ce150	0.000E+00	2.257E-07	2.262E-07	2.265E-07	2.269E-07	2.273E-07	2.276E-07	2.280E-07	2.284E-07	2.288E-07	2.292E-07	
pr150	0.000E+00	7.532E-07	7.548E-07	7.560E-07	7.572E-07	7.583E-07	7.595E-07	7.607E-07	7.619E-07	7.630E-07	7.642E-07	
nd150	2.280E+01	2.310E+01	2.341E+01	2.371E+01	2.401E+01	2.432E+01	2.463E+01	2.493E+01	2.524E+01	2.555E+01	2.585E+01	
pm150	0.000E+00	7.545E-06	7.692E-06	7.754E-06	7.801E-06	7.845E-06	7.887E-06	7.928E-06	7.969E-06	8.010E-06	8.050E-06	

case 6 fission products page 127
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
sm150	3.607E+01	3.642E+01	3.677E+01	3.713E+01	3.749E+01	3.785E+01	3.821E+01	3.857E+01	3.893E+01	3.929E+01	3.965E+01
eu150	1.243E-07	1.310E-07	1.370E-07	1.425E-07	1.475E-07	1.521E-07	1.564E-07	1.604E-07	1.642E-07	1.678E-07	1.713E-07

ba151	0.000E+00	1.492E-13	1.497E-13	1.501E-13	1.505E-13	1.509E-13	1.513E-13	1.517E-13	1.521E-13	1.525E-13	1.528E-13
la151	0.000E+00	2.746E-10	2.757E-10	2.766E-10	2.776E-10	2.785E-10	2.794E-10	2.804E-10	2.813E-10	2.823E-10	2.832E-10
ce151	0.000E+00	1.679E-08	1.684E-08	1.689E-08	1.694E-08	1.699E-08	1.704E-08	1.709E-08	1.714E-08	1.719E-08	1.724E-08
pr151	0.000E+00	1.216E-06	1.220E-06	1.223E-06	1.226E-06	1.228E-06	1.231E-06	1.234E-06	1.237E-06	1.240E-06	1.243E-06
nd151	0.000E+00	8.123E-05	8.148E-05	8.168E-05	8.188E-05	8.207E-05	8.227E-05	8.246E-05	8.266E-05	8.285E-05	8.305E-05
pm151	5.080E-15	1.128E-02	1.131E-02	1.134E-02	1.137E-02	1.139E-02	1.142E-02	1.145E-02	1.147E-02	1.150E-02	1.153E-02
sm151	2.150E+00	2.148E+00	2.156E+00	2.165E+00	2.173E+00	2.182E+00	2.190E+00	2.199E+00	2.207E+00	2.216E+00	2.224E+00
eu151	2.216E-02	1.990E-02	1.802E-02	1.646E-02	1.515E-02	1.406E-02	1.316E-02	1.240E-02	1.178E-02	1.126E-02	1.084E-02
ba152	0.000E+00	1.195E-15	1.211E-15	1.225E-15	1.240E-15	1.255E-15	1.269E-15	1.284E-15	1.300E-15	1.315E-15	1.330E-15
la152	0.000E+00	1.643E-12	1.659E-12	1.674E-12	1.690E-12	1.705E-12	1.721E-12	1.736E-12	1.752E-12	1.768E-12	1.784E-12
ce152	0.000E+00	1.504E-08	1.513E-08	1.520E-08	1.529E-08	1.537E-08	1.545E-08	1.553E-08	1.562E-08	1.570E-08	1.579E-08
pr152	0.000E+00	1.444E-07	1.450E-07	1.455E-07	1.461E-07	1.466E-07	1.471E-07	1.476E-07	1.481E-07	1.487E-07	1.492E-07
nd152	0.000E+00	5.048E-05	5.065E-05	5.080E-05	5.094E-05	5.108E-05	5.122E-05	5.136E-05	5.151E-05	5.165E-05	5.179E-05
pm152	0.000E+00	1.883E-05	1.890E-05	1.895E-05	1.901E-05	1.906E-05	1.911E-05	1.917E-05	1.922E-05	1.927E-05	1.932E-05
pm152m	0.000E+00	1.247E-06	1.252E-06	1.256E-06	1.260E-06	1.263E-06	1.267E-06	1.271E-06	1.275E-06	1.278E-06	1.282E-06
sm152	1.814E+01	1.833E+01	1.853E+01	1.872E+01	1.891E+01	1.910E+01	1.929E+01	1.948E+01	1.966E+01	1.985E+01	2.003E+01
eu152	2.268E-02	2.393E-02	2.488E-02	2.558E-02	2.608E-02	2.641E-02	2.661E-02	2.671E-02	2.672E-02	2.666E-02	2.655E-02
eu152m	0.000E+00	2.077E-05	1.887E-05	1.728E-05	1.595E-05	1.485E-05	1.393E-05	1.317E-05	1.254E-05	1.202E-05	1.160E-05
gd152	1.790E-02	1.883E-02	1.969E-02	2.046E-02	2.117E-02	2.182E-02	2.243E-02	2.300E-02	2.353E-02	2.404E-02	2.452E-02
la153	0.000E+00	9.972E-13	1.001E-12	1.004E-12	1.007E-12	1.010E-12	1.013E-12	1.016E-12	1.019E-12	1.023E-12	1.026E-12
ce153	0.000E+00	1.152E-09	1.157E-09	1.161E-09	1.165E-09	1.170E-09	1.174E-09	1.179E-09	1.183E-09	1.187E-09	1.192E-09
pr153	0.000E+00	4.127E-08	4.147E-08	4.163E-08	4.180E-08	4.197E-08	4.214E-08	4.231E-08	4.248E-08	4.266E-08	4.283E-08
nd153	0.000E+00	2.858E-06	2.869E-06	2.878E-06	2.888E-06	2.897E-06	2.907E-06	2.916E-06	2.926E-06	2.935E-06	2.945E-06
pm153	0.000E+00	1.666E-05	1.672E-05	1.678E-05	1.683E-05	1.689E-05	1.694E-05	1.700E-05	1.705E-05	1.710E-05	1.716E-05
sm153	8.454E-10	3.603E-02	3.644E-02	3.683E-02	3.722E-02	3.761E-02	3.799E-02	3.838E-02	3.876E-02	3.915E-02	3.953E-02
eu153	1.408E+01	1.428E+01	1.452E+01	1.477E+01	1.501E+01	1.526E+01	1.550E+01	1.575E+01	1.600E+01	1.624E+01	1.649E+01
gd153	2.015E-04	2.406E-04	2.791E-04	3.167E-04	3.533E-04	3.887E-04	4.229E-04	4.560E-04	4.878E-04	5.185E-04	5.481E-04
la154	0.000E+00	1.204E-14	1.209E-14	1.213E-14	1.217E-14	1.220E-14	1.224E-14	1.228E-14	1.232E-14	1.236E-14	1.240E-14
ce154	0.000E+00	1.632E-10	1.640E-10	1.647E-10	1.654E-10	1.661E-10	1.667E-10	1.674E-10	1.681E-10	1.688E-10	1.695E-10
pr154	0.000E+00	1.913E-09	1.925E-09	1.936E-09	1.947E-09	1.958E-09	1.970E-09	1.981E-09	1.992E-09	2.003E-09	2.015E-09
nd154	0.000E+00	8.570E-07	8.617E-07	8.658E-07	8.699E-07	8.740E-07	8.781E-07	8.822E-07	8.864E-07	8.905E-07	8.945E-07
pm154	0.000E+00	2.801E-06	2.815E-06	2.828E-06	2.841E-06	2.854E-06	2.867E-06	2.880E-06	2.893E-06	2.906E-06	2.919E-06
pm154m	0.000E+00	9.184E-07	9.229E-07	9.267E-07	9.304E-07	9.341E-07	9.378E-07	9.414E-07	9.450E-07	9.486E-07	9.521E-07
sm154	4.549E+00	4.620E+00	4.691E+00	4.763E+00	4.835E+00	4.908E+00	4.981E+00	5.054E+00	5.127E+00	5.201E+00	5.275E+00
eu154	2.036E+00	2.099E+00	2.161E+00	2.223E+00	2.284E+00	2.345E+00	2.405E+00	2.465E+00	2.524E+00	2.583E+00	2.642E+00
gd154	6.303E-01	6.441E-01	6.584E-01	6.731E-01	6.882E-01	7.037E-01	7.196E-01	7.359E-01	7.527E-01	7.698E-01	7.873E-01
la155	0.000E+00	6.094E-17	6.114E-17	6.130E-17	6.146E-17	6.162E-17	6.177E-17	6.193E-17	6.209E-17	6.224E-17	6.240E-17
ce155	0.000E+00	3.683E-12	3.700E-12	3.714E-12	3.728E-12	3.742E-12	3.756E-12	3.770E-12	3.784E-12	3.798E-12	3.812E-12

pr155	0.000E+00	4.460E-10	4.490E-10	4.517E-10	4.544E-10	4.571E-10	4.599E-10	4.626E-10	4.654E-10	4.681E-10	4.709E-10
nd155	0.000E+00	1.366E-07	1.375E-07	1.383E-07	1.391E-07	1.399E-07	1.407E-07	1.415E-07	1.423E-07	1.431E-07	1.440E-07
pm155	0.000E+00	8.333E-07	8.383E-07	8.427E-07	8.472E-07	8.516E-07	8.560E-07	8.604E-07	8.647E-07	8.691E-07	8.734E-07
sm155	0.000E+00	2.840E-05	2.858E-05	2.874E-05	2.890E-05	2.906E-05	2.922E-05	2.938E-05	2.954E-05	2.970E-05	2.986E-05
eu155	5.095E-01	5.282E-01	5.456E-01	5.621E-01	5.778E-01	5.929E-01	6.075E-01	6.218E-01	6.357E-01	6.495E-01	6.630E-01
gd155m	0.000E+00	4.009E-14	3.701E-14	3.574E-14	3.546E-14	3.574E-14	3.633E-14	3.708E-14	3.794E-14	3.885E-14	3.981E-14
gd155	3.199E-02	2.475E-02	2.095E-02	1.905E-02	1.820E-02	1.791E-02	1.794E-02	1.813E-02	1.841E-02	1.873E-02	1.908E-02
ce156	0.000E+00	3.264E-13	3.279E-13	3.291E-13	3.304E-13	3.316E-13	3.329E-13	3.341E-13	3.354E-13	3.366E-13	3.379E-13
pr156	0.000E+00	2.193E-11	2.210E-11	2.226E-11	2.241E-11	2.257E-11	2.272E-11	2.288E-11	2.304E-11	2.320E-11	2.335E-11
nd156	0.000E+00	5.333E-08	5.377E-08	5.418E-08	5.458E-08	5.499E-08	5.540E-08	5.581E-08	5.622E-08	5.663E-08	5.705E-08

case 6 fission products page 128
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
pm156	0.000E+00	1.164E-07	1.173E-07	1.180E-07	1.188E-07	1.196E-07	1.203E-07	1.211E-07	1.219E-07	1.227E-07	1.234E-07
sm156	0.000E+00	4.614E-04	4.645E-04	4.673E-04	4.701E-04	4.729E-04	4.756E-04	4.784E-04	4.811E-04	4.838E-04	4.865E-04
eu156	9.152E-03	9.127E-02	1.108E-01	1.174E-01	1.213E-01	1.247E-01	1.278E-01	1.308E-01	1.338E-01	1.368E-01	1.397E-01
gd156	7.316E+00	7.424E+00	7.597E+00	7.786E+00	7.982E+00	8.183E+00	8.389E+00	8.600E+00	8.816E+00	9.037E+00	9.262E+00
ce157	0.000E+00	5.592E-15	5.616E-15	5.636E-15	5.656E-15	5.676E-15	5.696E-15	5.716E-15	5.736E-15	5.756E-15	5.775E-15
pr157	0.000E+00	3.312E-12	3.336E-12	3.357E-12	3.379E-12	3.401E-12	3.423E-12	3.445E-12	3.467E-12	3.490E-12	3.512E-12
nd157	0.000E+00	1.692E-09	1.708E-09	1.723E-09	1.738E-09	1.753E-09	1.768E-09	1.783E-09	1.798E-09	1.813E-09	1.828E-09
pm157	0.000E+00	2.454E-07	2.475E-07	2.495E-07	2.515E-07	2.535E-07	2.555E-07	2.575E-07	2.595E-07	2.615E-07	2.635E-07
sm157	0.000E+00	4.140E-06	4.171E-06	4.200E-06	4.229E-06	4.258E-06	4.287E-06	4.315E-06	4.344E-06	4.372E-06	4.400E-06
eu157	0.000E+00	5.321E-04	5.460E-04	5.529E-04	5.584E-04	5.635E-04	5.686E-04	5.736E-04	5.786E-04	5.836E-04	5.885E-04
gd157	1.010E-02	9.620E-03	9.909E-03	1.007E-02	1.018E-02	1.029E-02	1.040E-02	1.051E-02	1.061E-02	1.072E-02	1.083E-02
pr158	0.000E+00	7.639E-14	7.691E-14	7.738E-14	7.786E-14	7.834E-14	7.882E-14	7.930E-14	7.978E-14	8.026E-14	8.074E-14
nd158	0.000E+00	3.054E-10	3.082E-10	3.109E-10	3.136E-10	3.163E-10	3.190E-10	3.217E-10	3.245E-10	3.272E-10	3.299E-10
pm158	0.000E+00	4.100E-09	4.142E-09	4.180E-09	4.219E-09	4.259E-09	4.298E-09	4.337E-09	4.377E-09	4.416E-09	4.455E-09
sm158	0.000E+00	1.467E-06	1.479E-06	1.491E-06	1.502E-06	1.513E-06	1.524E-06	1.536E-06	1.547E-06	1.558E-06	1.569E-06
eu158	0.000E+00	1.377E-05	1.388E-05	1.399E-05	1.409E-05	1.419E-05	1.429E-05	1.439E-05	1.449E-05	1.460E-05	1.470E-05
gd158	1.875E+00	1.909E+00	1.945E+00	1.980E+00	2.017E+00	2.054E+00	2.091E+00	2.129E+00	2.167E+00	2.205E+00	2.244E+00
pr159	0.000E+00	3.300E-15	3.320E-15	3.338E-15	3.356E-15	3.374E-15	3.392E-15	3.410E-15	3.427E-15	3.445E-15	3.463E-15
nd159	0.000E+00	6.448E-12	6.508E-12	6.563E-12	6.618E-12	6.674E-12	6.730E-12	6.787E-12	6.843E-12	6.899E-12	6.956E-12
pm159	0.000E+00	7.407E-10	7.491E-10	7.571E-10	7.651E-10	7.731E-10	7.812E-10	7.893E-10	7.974E-10	8.055E-10	8.136E-10
sm159	0.000E+00	2.948E-07	2.976E-07	3.002E-07	3.029E-07	3.055E-07	3.081E-07	3.107E-07	3.133E-07	3.159E-07	3.185E-07

eu159	0.000E+00	2.753E-06	2.778E-06	2.800E-06	2.822E-06	2.844E-06	2.866E-06	2.888E-06	2.910E-06	2.932E-06	2.954E-06
gd159	3.027E-23	1.969E-04	1.989E-04	2.008E-04	2.027E-04	2.046E-04	2.065E-04	2.085E-04	2.104E-04	2.123E-04	2.142E-04
tb159	2.693E-01	2.742E-01	2.794E-01	2.845E-01	2.897E-01	2.950E-01	3.002E-01	3.055E-01	3.109E-01	3.163E-01	3.217E-01
nd160	0.000E+00	4.561E-13	4.596E-13	4.629E-13	4.662E-13	4.696E-13	4.729E-13	4.763E-13	4.796E-13	4.830E-13	4.863E-13
pm160	0.000E+00	2.004E-11	2.027E-11	2.049E-11	2.071E-11	2.093E-11	2.115E-11	2.137E-11	2.160E-11	2.182E-11	2.204E-11
sm160	0.000E+00	3.936E-08	3.975E-08	4.012E-08	4.049E-08	4.085E-08	4.122E-08	4.159E-08	4.196E-08	4.232E-08	4.269E-08
eu160	0.000E+00	4.534E-08	4.574E-08	4.610E-08	4.646E-08	4.682E-08	4.718E-08	4.754E-08	4.790E-08	4.826E-08	4.861E-08
gd160	1.232E-01	1.256E-01	1.280E-01	1.304E-01	1.329E-01	1.353E-01	1.378E-01	1.403E-01	1.428E-01	1.454E-01	1.479E-01
tb160	1.281E-03	1.787E-03	2.163E-03	2.447E-03	2.666E-03	2.839E-03	2.981E-03	3.101E-03	3.205E-03	3.299E-03	3.385E-03
dy160	2.225E-02	2.247E-02	2.282E-02	2.328E-02	2.381E-02	2.440E-02	2.504E-02	2.570E-02	2.640E-02	2.711E-02	2.785E-02
nd161	0.000E+00	6.838E-15	6.885E-15	6.927E-15	6.970E-15	7.013E-15	7.056E-15	7.099E-15	7.142E-15	7.185E-15	7.228E-15
pm161	0.000E+00	2.445E-12	2.473E-12	2.499E-12	2.525E-12	2.552E-12	2.578E-12	2.605E-12	2.632E-12	2.658E-12	2.685E-12
sm161	0.000E+00	5.559E-10	5.621E-10	5.678E-10	5.737E-10	5.795E-10	5.853E-10	5.912E-10	5.970E-10	6.028E-10	6.087E-10
eu161	0.000E+00	1.670E-08	1.685E-08	1.699E-08	1.713E-08	1.727E-08	1.741E-08	1.755E-08	1.769E-08	1.783E-08	1.797E-08
gd161	0.000E+00	1.216E-07	1.226E-07	1.235E-07	1.245E-07	1.254E-07	1.263E-07	1.273E-07	1.282E-07	1.291E-07	1.300E-07
tb161	2.017E-06	3.302E-04	3.447E-04	3.491E-04	3.529E-04	3.564E-04	3.598E-04	3.630E-04	3.661E-04	3.692E-04	3.722E-04
dy161	4.244E-02	4.281E-02	4.349E-02	4.420E-02	4.490E-02	4.562E-02	4.634E-02	4.706E-02	4.779E-02	4.853E-02	4.927E-02
pm162	0.000E+00	5.089E-14	5.136E-14	5.179E-14	5.222E-14	5.265E-14	5.309E-14	5.352E-14	5.396E-14	5.440E-14	5.484E-14
sm162	0.000E+00	8.724E-11	8.813E-11	8.896E-11	8.980E-11	9.064E-11	9.148E-11	9.232E-11	9.317E-11	9.401E-11	9.485E-11
eu162	0.000E+00	1.627E-08	1.641E-08	1.654E-08	1.666E-08	1.679E-08	1.692E-08	1.704E-08	1.717E-08	1.730E-08	1.742E-08
gd162	0.000E+00	1.181E-07	1.189E-07	1.197E-07	1.205E-07	1.213E-07	1.220E-07	1.228E-07	1.236E-07	1.243E-07	1.251E-07
tb162	0.000E+00	1.111E-07	1.119E-07	1.126E-07	1.134E-07	1.141E-07	1.148E-07	1.155E-07	1.162E-07	1.169E-07	1.176E-07
tb162m	0.000E+00	3.477E-08	3.497E-08	3.513E-08	3.530E-08	3.546E-08	3.562E-08	3.577E-08	3.593E-08	3.608E-08	3.623E-08
dy162	3.225E-02	3.290E-02	3.354E-02	3.420E-02	3.485E-02	3.551E-02	3.617E-02	3.684E-02	3.751E-02	3.818E-02	3.886E-02
sm163	0.000E+00	1.650E-12	1.667E-12	1.683E-12	1.700E-12	1.716E-12	1.733E-12	1.749E-12	1.766E-12	1.782E-12	1.799E-12
eu163	0.000E+00	1.510E-10	1.523E-10	1.536E-10	1.549E-10	1.561E-10	1.574E-10	1.586E-10	1.599E-10	1.612E-10	1.624E-10
gd163	0.000E+00	7.720E-09	7.777E-09	7.828E-09	7.879E-09	7.930E-09	7.980E-09	8.030E-09	8.079E-09	8.128E-09	8.177E-09
tb163	0.000E+00	1.120E-07	1.128E-07	1.135E-07	1.142E-07	1.149E-07	1.156E-07	1.163E-07	1.170E-07	1.177E-07	1.184E-07
tb163m	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

case 6 fission products page 129
power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide concentrations, grams
basis = fuel assembly (.1902 mtu)

	charge	34.8 d	69.6 d	104.4 d	139.2 d	174.0 d	208.8 d	243.6 d	278.4 d	313.2 d	348.0 d
dy163	2.200E-02	2.256E-02	2.314E-02	2.372E-02	2.431E-02	2.491E-02	2.552E-02	2.613E-02	2.675E-02	2.738E-02	2.802E-02
sm164	0.000E+00	1.155E-13	1.166E-13	1.176E-13	1.186E-13	1.197E-13	1.207E-13	1.217E-13	1.228E-13	1.238E-13	1.249E-13

eu164	0.000E+00	3.600E-12	3.634E-12	3.665E-12	3.697E-12	3.728E-12	3.760E-12	3.791E-12	3.823E-12	3.854E-12	3.885E-12	
gd164	0.000E+00	3.229E-08	3.253E-08	3.275E-08	3.296E-08	3.317E-08	3.338E-08	3.359E-08	3.380E-08	3.401E-08	3.421E-08	
tb164	0.000E+00	6.243E-09	6.287E-09	6.325E-09	6.364E-09	6.402E-09	6.440E-09	6.477E-09	6.514E-09	6.551E-09	6.588E-09	
dy164	5.217E-03	5.350E-03	5.485E-03	5.623E-03	5.762E-03	5.904E-03	6.048E-03	6.195E-03	6.343E-03	6.494E-03	6.647E-03	
sm165	0.000E+00	1.656E-15	1.669E-15	1.681E-15	1.693E-15	1.706E-15	1.718E-15	1.730E-15	1.742E-15	1.755E-15	1.767E-15	
eu165	0.000E+00	3.433E-13	3.466E-13	3.497E-13	3.528E-13	3.559E-13	3.590E-13	3.620E-13	3.651E-13	3.682E-13	3.713E-13	
gd165	0.000E+00	2.289E-10	2.306E-10	2.322E-10	2.337E-10	2.353E-10	2.368E-10	2.384E-10	2.399E-10	2.414E-10	2.429E-10	
tb165	0.000E+00	1.506E-09	1.516E-09	1.525E-09	1.534E-09	1.543E-09	1.552E-09	1.561E-09	1.569E-09	1.578E-09	1.586E-09	
dy165	0.000E+00	1.100E-06	1.129E-06	1.158E-06	1.187E-06	1.217E-06	1.248E-06	1.279E-06	1.310E-06	1.342E-06	1.375E-06	
dy165m	0.000E+00	7.483E-09	7.680E-09	7.876E-09	8.075E-09	8.278E-09	8.484E-09	8.694E-09	8.908E-09	9.125E-09	9.346E-09	
ho165	6.838E-03	7.066E-03	7.302E-03	7.543E-03	7.790E-03	8.042E-03	8.301E-03	8.565E-03	8.835E-03	9.112E-03	9.395E-03	
dy166	2.512E-11	6.130E-07	6.174E-07	6.208E-07	6.242E-07	6.275E-07	6.309E-07	6.342E-07	6.374E-07	6.407E-07	6.439E-07	
ho166	1.228E-11	2.277E-06	2.355E-06	2.433E-06	2.513E-06	2.595E-06	2.679E-06	2.765E-06	2.853E-06	2.944E-06	3.037E-06	
ho166m	1.777E-05	1.851E-05	1.926E-05	2.004E-05	2.085E-05	2.168E-05	2.255E-05	2.343E-05	2.435E-05	2.530E-05	2.628E-05	
er166	1.159E-03	1.203E-03	1.251E-03	1.300E-03	1.351E-03	1.404E-03	1.459E-03	1.515E-03	1.573E-03	1.633E-03	1.694E-03	
er167	1.968E-05	2.058E-05	2.152E-05	2.248E-05	2.348E-05	2.451E-05	2.558E-05	2.669E-05	2.784E-05	2.903E-05	3.025E-05	
er167m	0.000E+00	1.478E-16	1.486E-16	1.493E-16	1.499E-16	1.506E-16	1.512E-16	1.518E-16	1.525E-16	1.531E-16	1.537E-16	
er168	1.936E-05	2.047E-05	2.165E-05	2.287E-05	2.416E-05	2.551E-05	2.691E-05	2.839E-05	2.993E-05	3.154E-05	3.322E-05	
er169	6.150E-11	2.673E-09	2.888E-09	2.918E-09	2.934E-09	2.948E-09	2.962E-09	2.976E-09	2.990E-09	3.003E-09	3.017E-09	
er170	4.297E-07	4.378E-07	4.460E-07	4.542E-07	4.625E-07	4.708E-07	4.791E-07	4.875E-07	4.960E-07	5.045E-07	5.130E-07	
er171	0.000E+00	1.350E-10	1.359E-10	1.366E-10	1.373E-10	1.380E-10	1.387E-10	1.394E-10	1.401E-10	1.407E-10	1.414E-10	
er172	3.810E-17	5.621E-10	5.660E-10	5.695E-10	5.729E-10	5.763E-10	5.797E-10	5.830E-10	5.863E-10	5.896E-10	5.929E-10	
totals	4.383E+03	4.437E+03	4.490E+03	4.543E+03	4.597E+03	4.650E+03	4.703E+03	4.757E+03	4.810E+03	4.863E+03	4.917E+03	

flux 1.264E+13 1.269E+13 1.272E+13 1.275E+13 1.278E+13 1.282E+13 1.285E+13 1.288E+13 1.291E+13 1.294E+13

case 7 light elements page 130
decay, following reactor irradiation identified by: power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide thermal power, watts
basis =fuel assembly (.1902 mtu)

	charge	discharge	50.0 d	150.0 d	400.0 d	857.0 d	871.0 d	886.0 d	892.0 d	899.0 d	946.0 d
co 58	6.011E-01	1.263E+00	7.750E-01	2.916E-01	2.532E-02	2.908E-04	2.536E-04	2.190E-04	2.065E-04	1.929E-04	1.218E-04
co 60	5.010E+00	5.508E+00	5.409E+00	5.218E+00	4.769E+00	4.045E+00	4.025E+00	4.003E+00	3.995E+00	3.984E+00	3.918E+00
zr 95	1.034E+01	2.470E+01	1.438E+01	4.868E+00	3.249E-01	2.305E-03	1.981E-03	1.684E-03	1.578E-03	1.463E-03	8.795E-04
nb 95	1.372E+01	2.304E+01	1.946E+01	8.731E+00	6.703E-01	4.881E-03	4.190E-03	3.558E-03	3.332E-03	3.088E-03	1.852E-03
in113m	2.189E-01	4.434E-01	3.282E-01	1.797E-01	3.987E-02	2.543E-03	2.337E-03	2.135E-03	2.060E-03	1.975E-03	1.488E-03
sn119m	3.556E-01	5.907E-01	5.248E-01	4.143E-01	2.293E-01	7.781E-02	7.528E-02	7.266E-02	7.163E-02	7.046E-02	6.304E-02

sb125	5.070E-01	5.719E-01	5.526E-01	5.155E-01	4.333E-01	3.154E-01	3.123E-01	3.091E-01	3.078E-01	3.063E-01	2.964E-01	
eu154	2.548E-01	2.653E-01	2.624E-01	2.566E-01	2.429E-01	2.195E-01	2.189E-01	2.181E-01	2.178E-01	2.175E-01	2.153E-01	
eu156	1.691E-01	2.307E+00	2.354E-01	2.451E-03	2.713E-08	2.365E-17	1.248E-17	6.294E-18	4.786E-18	3.477E-18	4.069E-19	
tb160	2.770E+00	6.913E+00	4.281E+00	1.641E+00	1.494E-01	1.869E-03	1.634E-03	1.415E-03	1.336E-03	1.250E-03	7.963E-04	
total	3.454E+01	2.304E+02	4.700E+01	2.243E+01	7.019E+00	4.730E+00	4.701E+00	4.670E+00	4.658E+00	4.644E+00	4.551E+00	

case 7 actinides page 131
decay, following reactor irradiation identified by: power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide thermal power, watts
basis =fuel assembly (.1902 mtu)

	charge discharge	50.0 d	150.0 d	400.0 d	857.0 d	871.0 d	886.0 d	892.0 d	899.0 d	946.0 d		
pu238	8.991E+00	1.253E+01	1.285E+01	1.328E+01	1.377E+01	1.388E+01	1.388E+01	1.388E+01	1.388E+01	1.388E+01	1.387E+01	
pu239	1.692E+00	1.712E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	1.720E+00	
pu240	2.493E+00	2.783E+00	2.783E+00	2.783E+00	2.783E+00	2.784E+00	2.784E+00	2.784E+00	2.784E+00	2.784E+00	2.784E+00	
am241	2.829E+00	2.887E+00	3.023E+00	3.292E+00	3.948E+00	5.091E+00	5.125E+00	5.161E+00	5.176E+00	5.193E+00	5.306E+00	
cm242	1.644E+02	3.497E+02	2.841E+02	1.857E+02	6.424E+01	9.332E+00	8.802E+00	8.268E+00	8.064E+00	7.832E+00	6.441E+00	
cm244	4.834E+00	8.249E+00	8.214E+00	8.128E+00	7.918E+00	7.547E+00	7.536E+00	7.524E+00	7.520E+00	7.514E+00	7.477E+00	
total	1.862E+02	5.466E+03	3.138E+02	2.157E+02	9.515E+01	4.110E+01	4.059E+01	4.007E+01	3.988E+01	3.965E+01	3.833E+01	

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decay, following reactor irradiation identified by: power= 2.48mw, burnup= 4820.mwd, flux= 1.91E+13n/cm**2-sec

nuclide thermal power, watts
basis =fuel assembly (.1902 mtu)

	charge discharge	50.0 d	150.0 d	400.0 d	857.0 d	871.0 d	886.0 d	892.0 d	899.0 d	946.0 d		
sr 89	4.723E+01	1.191E+02	6.001E+01	1.523E+01	4.945E-01	9.396E-04	7.755E-04	6.313E-04	5.815E-04	5.283E-04	2.773E-04	
sr 90	1.078E+01	1.168E+01	1.164E+01	1.156E+01	1.137E+01	1.102E+01	1.101E+01	1.100E+01	1.100E+01	1.099E+01	1.096E+01	
y 90	5.143E+01	5.642E+01	5.550E+01	5.513E+01	5.421E+01	5.256E+01	5.251E+01	5.246E+01	5.244E+01	5.242E+01	5.225E+01	
y 91	7.017E+01	1.630E+02	9.080E+01	2.777E+01	1.436E+00	6.395E-03	5.418E-03	4.536E-03	4.225E-03	3.888E-03	2.228E-03	
zr 95	1.432E+02	3.280E+02	1.909E+02	6.464E+01	4.314E+00	3.061E-02	2.631E-02	2.236E-02	2.096E-02	1.943E-02	1.168E-02	
nb 95	1.904E+02	3.077E+02	2.591E+02	1.160E+02	8.901E+00	6.481E-02	5.563E-02	4.724E-02	4.425E-02	4.100E-02	2.459E-02	
ru103	6.947E+01	2.257E+02	9.335E+01	1.597E+01	1.934E-01	6.056E-05	4.730E-05	3.629E-05	3.265E-05	2.885E-05	1.258E-05	
rh106	1.605E+02	2.597E+02	2.295E+02	1.905E+02	1.195E+02	5.096E+01	4.964E+01	4.827E+01	4.774E+01	4.712E+01	4.316E+01	
cs134	6.816E+01	9.545E+01	9.116E+01	8.314E+01	6.605E+01	4.337E+01	4.282E+01	4.223E+01	4.200E+01	4.173E+01	3.996E+01	
cs137	1.442E+01	1.606E+01	1.600E+01	1.590E+01	1.565E+01	1.521E+01	1.519E+01	1.518E+01	1.517E+01	1.517E+01	1.512E+01	
ba137m	4.814E+01	5.372E+01	5.342E+01	5.309E+01	5.225E+01	5.077E+01	5.072E+01	5.067E+01	5.065E+01	5.063E+01	5.048E+01	
ba140	1.155E+01	2.117E+02	1.398E+01	6.101E-02	7.673E-08	1.256E-18	5.869E-19	2.597E-19	1.875E-19	1.282E-19	9.964E-21	

la140	7.638E+01	1.275E+03	9.249E+01	4.036E-01	5.076E-07	8.308E-18	3.882E-18	1.718E-18	1.240E-18	8.477E-19	6.591E-20
ce141	2.604E+01	9.720E+01	3.364E+01	3.987E+00	1.928E-02	1.127E-06	8.364E-07	6.074E-07	5.344E-07	4.603E-07	1.689E-07
pr143	7.959E+00	1.101E+02	9.560E+00	5.771E-02	1.634E-07	1.179E-17	5.765E-18	2.679E-18	1.971E-18	1.378E-18	1.248E-19
ce144	1.755E+01	2.803E+01	2.482E+01	1.946E+01	1.059E+01	3.485E+00	3.369E+00	3.248E+00	3.201E+00	3.147E+00	2.807E+00
pr144	1.968E+02	3.151E+02	2.783E+02	2.182E+02	1.188E+02	3.908E+01	3.778E+01	3.642E+01	3.589E+01	3.529E+01	3.148E+01
pm148m	7.249E+00	1.968E+01	8.503E+00	1.587E+00	2.389E-02	1.114E-05	8.807E-06	6.847E-06	6.191E-06	5.505E-06	2.501E-06
total	1.254E+03	8.786E+04	1.660E+03	9.133E+02	4.789E+02	2.781E+02	2.745E+02	2.709E+02	2.695E+02	2.678E+02	2.573E+02

* normal termination of execution *

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