

CRWMS/M&O

Design Analysis Cover Sheet

Complete only applicable items.

①

QA: L

Page: 1

Of: 12

2. DESIGN ANALYSIS TITLE			
DHLW Glass Waste Package Criticality Analysis (SCPB: N/A)			
3. DOCUMENT IDENTIFIER (Including Rev. No.)			4. TOTAL PAGES
BBAC00000-01717-0200-00001 REV 00			12
5. TOTAL ATTACHMENTS		6. ATTACHMENT NUMBERS - NO. OF PAGES IN EACH	
7		see Section 9 of analysis	
	Printed Name	Signature	Date
7. Originator	J. W. Davis	<i>J. W. Davis</i>	3/29/96
8. Checker	K. D. Wright	<i>K. D. Wright</i>	3/29/96
9. Lead Design Engineer	T. W. Doering	<i>T. W. Doering</i>	3/29/96
10. QA Manager	J. W. Willis	<i>J. W. Willis for JWW</i>	3/29/96
11. Department Manager	H. A. Benton	<i>H. A. Benton</i>	3/29/96
12. REMARKS			

Design Analysis Revision Record*Complete only applicable items.*

1.

Page: 2

Of: 12

2. DESIGN ANALYSIS TITLE

DHLW Glass Waste Package Criticality Analysis

3. DOCUMENT IDENTIFIER (Including Rev. No.)

BBAC00000-01717-0200-00001 REV 00

4. Revision No.	5. Description of Revision
00	Issued Approved

Table of Contents:

<u>Item</u>	<u>Page</u>
1. Purpose	4
2. Quality Assurance	4
3. Method	4
4. Design Inputs	5
4.1 Design Parameters	5
4.2 Criteria	5
4.3 Assumptions	6
4.4 Codes and Standards	7
5. References	8
6. Use of Computer Software	9
6.1 Scientific and Engineering Software	9
7. Design Analysis	9
7.1 Background	9
7.2 Design Details and Evaluation	10
7.3 Modeling	10
7.4 Calculations	10
8. Conclusions	11
9. Attachments	11

1. Purpose

This analysis is prepared by the Mined Geologic Disposal System (MGDS) Waste Package Development Department (WPDD) to determine the viability of the Defense High-Level Waste (DHLW) Glass waste package concept with respect to criticality regulatory requirements in compliance with the goals of the Waste Package Implementation Plan (Ref. 5.1) for conceptual design. These design calculations are performed in sufficient detail to provide a comprehensive comparison base with other design alternatives. The objective of this evaluation is to show to what extent the concept meets the regulatory requirements or indicate additional measures that are required for the intact waste package.

2. Quality Assurance

The work performed for this analysis is covered by a Waste Package Development (WPD) QAP-2-0 work control Activity Evaluation entitled "Perform Criticality, Thermal, Structural, and Shielding Analyses" (Ref. 5.2). The QAP-2-0 evaluation determined that such activities are subject to Quality Assurance Requirements and Description (QARD) (Ref. 5.3) controls. Applicable procedural controls are listed in the activity evaluation. The waste package is on the Q-List (Ref. 5.4) by direct inclusion by the Department of Energy (DOE), as an item important to safety and waste isolation; because of the direct inclusion of the waste package on the Q-List, a QAP-2-3 evaluation is not required to be conducted.

The work reported in this document is part of the neutronic analysis for the preliminary or conceptual design; thus, design inputs include unqualified data and unconfirmed assumptions. These design inputs will require subsequent qualification (or superseding inputs) as the waste package design proceeds. This document will not directly support any construction, fabrication, or procurement activity and, therefore, does not require initiation of a TBV (to be verified) number for tracking purposes. However, use of any data or output from this analysis for input into documents supporting procurement, fabrication, or construction is required to be controlled as TBV in accordance with appropriate procedures.

3. Method

The multiplication factor (k_{eff}) of the disposal packages is determined using the Monte Carlo neutron transport technique implemented in the MCNP (Ref. 5.5) computer program. The resulting k_{eff} values for a variety of configurations are then used to evaluate the criticality potential of the disposal package and the acceptability of the design in meeting design requirements and criteria.

4. Design Inputs

The design inputs identified in this document are for preliminary design and shall be treated as unqualified data; these design input will require subsequent qualification (or superseding inputs) as the waste package design proceeds. This document will not directly support any construction, fabrication, or procurement activity and therefore is not required to be procedurally controlled as TBV.

The dimensions listed in this section and throughout this analysis are in the metric units used directly in the neutronics codes to facilitate checking and preclude errors in input.

4.1 Design Parameters

The dimensions of the Savannah River Pour Canister are shown in Table 4.1-1 (Ref. 5.9).

Table 4.1-1 Dimensions of the Savannah River Pour Canister

DESCRIPTION	DIMENSION (cm)
OD	60.96
Wall Thickness (minimum)	0.952
Overall Height	299.64
Neck Height	25.38

The DHLW glass is poured into SS304L canisters at a fill temperature of 850 °C and a fill volume of 85%. The glass volume per canister upon cooling to 25°C is about 80% of the 0.736 m³ canister inside volume and has a density of 2.85 g/cm³ (Ref. 5.12).

The dimensions of the disposal container used for guidance in spacing the canisters are taken from reference 5.8.

The material compositions for materials other than DHLW are taken from reference 5.11.

4.2 Criteria

This design analysis provides the repository criticality control design criteria for DHLW Waste Packages, based upon criteria from requirements documents. This document will not directly support any construction, fabrication, or procurement activity and therefore is not required to carry TBV or TBD items to design outputs. The criteria cited in requirements documents that have bearing on this analysis include:

From the MGDS-Requirements Document (Ref. 5.6);

"3.2.2.6 Criticality Protection

- A. All systems for processing, transporting, handling, storing, retrieving, emplacing, and isolating radioactive waste shall be designed to ensure that a nuclear criticality accident is not possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. Each system shall be designed for criticality safety under normal and accident conditions. The calculated effective multiplication factor (k_{eff}) must be sufficiently below unity to show at least a 5% margin, after allowance for the bias in the method of calculation and the uncertainty in the experiments used to validate the methods of calculation. [10CFR60.131(b)(7)]"

From the Engineered Barrier Design Requirements Document (Ref. 5.7);

"3.2.2.6 CRITICALITY PROTECTION

- A. The Engineered Barrier Segment shall be designed to ensure that a nuclear criticality accident is not possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. Each system shall be designed for criticality safety under normal and accident conditions. The calculated effective multiplication factor must be sufficiently below unity to show at least a five percent margin, after allowance for the bias in the method of calculation and the uncertainty in the experiments used to validate the methods of calculation. [MGDS-RD 3.2.2.6.A] [10CFR60.131(b)(7)]"

From the Engineered Barrier Design Requirements Document (Ref. 5.7);

"3.7.1.3 INTERNAL STRUCTURE REQUIREMENTS

- A. The internal structure shall provide separation of the waste forms such that nuclear criticality shall not be possible unless at least two unlikely, independent, and concurrent or sequential changes have occurred in the conditions essential to nuclear criticality safety. The calculated effective multiplication factor (k_{eff}) must be sufficiently below unity to show at least a five percent margin after allowance for the bias in the method of calculation and the uncertainty in the experiments used to validate the methods of calculation (TBD). [MGDS-RD 3.2.2.6.A] [10CFR60.131(b)(7)]"

4.3 Assumptions

- 4.3.1 The design of the DHLW glass canisters and the disposal container is based on references 5.8 and 5.9. This assumption is used throughout Section 7.
- 4.3.2 For spent nuclear fuel (SNF) and DHLW, the previously established (Ref. 5.10) preliminary list of "Principal Isotopes" for long-term criticality control was used. The 30 principal isotopes are shown in Table 4.3-1. This assumption is used throughout Section 7.

Table 4.3-1. Principal Long-Term Burnup Credit Isotopes

O-16	Tc-99	Rh-103	Ag-109	Cs-133
Nd-143	Nd-145	Sm-147	Sm-149	Sm-150
Sm-151	Sm-152	Eu-151	Eu-153	Gd-155
U-233	U-234	U-235	U-236	U-238
Np-237	Pu-238	Pu-239	Pu-240	Pu-241
Pu-242	Am-241	Am-242m	Am-243	Cm-245

- 4.3.3 The number of isotopes in the model was limited by their availability in the MCNP computer program cross-section libraries. Eight of the identified principal isotopes are not available in the standard MCNP cross-section sets. The unavailable isotopes include: Tc-99, Cs-133, Nd-143, Nd-145, Sm-147, Sm-150, Sm-151, and Sm-152. The 22 available isotopes are used in the MCNP models. The eight unavailable isotopes are absorbers, and, therefore, not accounting for them is conservative. This assumption is used throughout Section 7.
- 4.3.4 The fresh fuel bias and uncertainty for MCNP is approximately 0.015. The preliminary SNF bias and uncertainty is approximately 0.06. These uncertainties were used in a prior unqualified analysis (Ref. 5.10) and are appropriate for application to DHLW glass. This assumption is used throughout Section 7.
- 4.3.5 The material compositions for materials other than DHLW are taken from reference 5.11. This analysis was performed to provide a single reference of qualified design inputs for material compositions. This assumption is used throughout Section 7.
- 4.3.6 The material composition and characteristics of the DHLW glass are taken from the Characteristics Data Base (CDB) (Ref. 5.12) for DWPF/SRS HLW glass at the time of production. The composition of SRS glass is assumed to be typical for all DHLW glass and is assumed uniform (homogeneous) throughout the container. For this analysis, the Zn, Zeolite, and Others components were assumed to be SiO₂. Natural uranium was taken to be 0.7% U-235 and 99.3% U-238 (neglect U-234). These DHLW composition assumptions are used throughout Section 7.

4.4 Codes and Standards

Not Applicable.

5. References

- 5.1 *Waste Package Implementation Plan*, YMP/92-11Q, REV 1, Yucca Mountain Site Characterization Project.
- 5.2 "Perform Criticality, Thermal, Structural, and Shielding Analyses," Document Identifier (DI) #: BB0000000-01717-2200-00025 REV 02, Civilian Radioactive Waste Management System (CRWMS) Management and Operating Contractor (M&O).
- 5.3 *Quality Assurance Requirements and Description (QARD)*, DOE/RW-0333P Rev 5, U. S. Department of Energy (USDOE) Office of Civilian Radioactive Waste Management (OCRWM).
- 5.4 *Yucca Mountain Site Characterization Project Q-List*, YMP/90-55Q, REV 3, Yucca Mountain Site Characterization Project.
- 5.5 "MCNP - A General Monte Carlo Code for Neutron and Photon Transport," Judith F. Briesmeister, , Ed., Los Alamos National Laboratory (LANL), LA-7396-M, Rev. 2, April 1991.
- 5.6 *Mined Geological Disposal System Requirements Document*, DOE/RW-0404P, DI#: B00000000-00811-1708-00002 REV 01 DCN 01, USDOE OCRWM.
- 5.7 *Engineered Barrier Design Requirements Document*, YMP/CM-0024, Rev 0, ICN 1, Yucca Mountain Site Characterization Project.
- 5.8 "Defense High-Level Waste Package (Glassified Waste)," DI#: BBA000000-01717-2100-15038 REV 0A, CRWMS M&O.
- 5.9 "Savannah Pour Canister," DI#: BBA000000-01717-2100-15039 REV 0A, CRWMS M&O.
- 5.10 *Initial Summary Report for Repository/Waste Package Advanced Conceptual Design*, DI#: B00000000-01717-5705-00015 REV 00, CRWMS M&O, pp. 6-241, 6-203.
- 5.11 "Material Compositions and Number Densities for Neutronic Calculations," DI#: BBA000000-01717-0200-00002 REV 00, CRWMS M&O.
- 5.12 "Characteristics Data Base (CDB_H)", DI#: A00000000-02268-1200-20005 V1.1 Rev 01, CRWMS M&O.
- 5.13 American National Standard on "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors", ANSI/ANS-8.17, 1984.

5.14 "Nuclear Safety Guide," TID-7016, Rev 2, J. T. Thomas, Ed., NUREG/CR-0095, Oak Ridge National Laboratory, June 1978, p. 24.

6. Use of Computer Software

6.1 Scientific and Engineering Software

MCNP 4.2 CSCI B00000000-01717-1200-30006 on Hewlett Packard Apollo 9000, Series 735 Workstations

MCNP 4.2 is utilized to determine the criticality potential of DHLW glass. The present application is appropriate for the use of this software and falls within the range of validation of this software. An associated continuous energy cross section set based on ENDF/B-V is utilized by MCNP.

There are biases and uncertainties associated with a criticality calculation. How these biases and uncertainties are treated in criticality calculations is covered in the American National Standard on "Criticality Safety Criteria for the Handling, Storage, and Transportation of LWR Fuel Outside Reactors" (Ref. 5.13). The fresh fuel bias and uncertainty for MCNP is approximately 0.015; the preliminary SNF bias and uncertainty is approximately 0.06. The SNF bias and uncertainty is higher due to additional factors such as isotopics and axial effects. The SNF bias and uncertainty is appropriate for application to the DHLW glass.

CDB_H V1.1, CSCI A00000000-02268-1200-20005 V1.1 on Personal Computer

CDB_H is an appropriate tool to be utilized to determine the composition and characteristics of DHLW glass. This validated code searches an associated data base and provides information as requested.

7. Design Analysis

To better define the pre- and postclosure issues and the methodology for addressing them, a three phased approach for disposal criticality control was developed. The three time phases associated with the approach are: the Preclosure/Operations Phase, the Postclosure/Containment Phase, and the Postclosure/Isolation Phase. This analysis is performed for the Preclosure/Operations Phase. No criticality events external to the waste package nor major internal geometry changes are evaluated.

7.1 Background

The DHLW glass is poured into 304L stainless steel (SS304L) canisters at a fill temperature of 850 °C and a fill volume of 85%. The glass volume per canister upon cooling to 25 °C is about 80% of the 0.736 m³ canister inside volume and has a density of 2.85 g/cm³ (Ref. 5.12). This information is included in Attachment I. Four of the canisters are placed into the disposal container. No disposal container basket or internal support structure design has been developed.

The DHLW glass isotopic compositions are taken from the CDB (Ref. 5.12). The nominal composition of the glass was provided in the CDB and is included in Attachment I.

7.2 Design Details and Evaluation

Based on optimum moderation and reflection, the minimum critical concentration of Pu-239 in an aqueous solution is 7 gm/liter (Ref. 5.14). The concentration of Pu-239 in the DHLW glass is nominally 0.35 g/liter and is not under optimum conditions. Calculations are provided below to demonstrate the degree of subcriticality of the DHLW glass disposal container.

The DHLW disposal package conceptual design consists of 4 Savannah River Site high level waste glass canisters placed inside of the waste disposal container consisting of an inner and outer barrier. The minimum critical mass for Pu-239 is 0.51 kg in a homogeneous optimally moderated aqueous solution in a spherical configuration (Ref. 5.14). From page 3 of Attachment I, each canister contains 0.21 kg of Pu-239, providing 1.65 potential critical masses per waste package. A detailed probabilistic analysis is required to determine if there are credible sequences of events which will lead to concentrations of Pu-239 from DHLW as it degrades over very long time spans.

7.3 Modeling

The canister was modeled as a cylinder representing a canister filled up to the neck with a height of 274.26 cm. The flanged and dished head of the canister was neglected. This translates into approximately 28% more material in the canisters than indicated in reference 5.12, since the canister is actually only filled 80% by volume when cooled. A 2x2 array at a center-to-center spacing of 64 cm (3.04 cm edge-to-edge) of these canisters is then reflected on the X and Y surfaces creating an infinite array in 2 dimensions. An infinite array of canisters was modeled in order to allow this analysis to be applied to larger waste packages which may be used in the future because of the low criticality potential of DHLW. The spacing of the canisters is a reasonable representation of that in a waste package (Ref. 5.8). The array is modeled from the centerline up (reflected on the centerline) axially. A water reflector (air for "normal" case) 15 cm thick was placed above the canisters. The cross-sectional view in the X-Y plane of the physical MCNP model is shown in Figure 7.3-1 and was generated with the MCNP plotting capability. The axial orientation of the canisters is not a factor in this model. The inputs for each model are echoed in the output included in the attachments.

7.4 Calculations

The masses of materials indicated in the CDB output (Attachment I) were converted to weight fractions for input into MCNP. These calculations are shown in Attachment II.

Six infinite array cases have been run for DHLW glass. The $k_{\text{eff}} (\pm 2\sigma)$ values calculated are as follow:

DHLW glass, infinite array, Flooded (DHLWG1)	-	0.0070 ± .0003
DHLW glass, infinite array, Dry (DHLWG2)	-	0.0089 ± .0002
DHLW glass, infinite array, Flooded, fissile x 100 (DHLWG6)	-	0.1291 ± .0026
DHLW glass, infinite array, Dry, fissile x 100 (DHLWG3)	-	0.2066 ± .0029
DHLW glass, infinite array, Flooded, No Absorbers (DHLWG4)	-	0.0759 ± .0022
DHLW glass, infinite array, Dry, No Absorbers (DHLWG5)	-	0.1171 ± .0028

The k_{eff} results reported are the "Combined Average" of the combined track length, absorption, and collision estimates as listed in the last generation print of the MCNP output. The first two cases have the glass description provided in the CDB. The third and fourth cases have the concentrations of the fissile isotopes U-235 and Pu-239 multiplied by 100 to demonstrate that even extreme variation of the composition will not be a criticality concern. The fifth and sixth cases are composed of the actinides in SiO₂ alone, to demonstrate the effect of eliminating absorbers, and, effectively, increasing moderation.

8. Conclusions

The DHLW glass is not of criticality concern in the intact form, even in an infinite array of canisters, as indicated in the results. The concentration of Pu-239 is 1/20th that required for criticality in an optimum aqueous solution. The waste package does contain 1.65 critical masses of Pu-239 (optimum conditions) if it could be separated and concentrated. A probabilistic analysis is required to determine the credibility of separation/concentration scenarios. A deterministic criticality analysis could then be performed on credible geometries and concentrations.

9. Attachments

The following attachments are case output files as listed. The name of the file is listed in parenthesis.

- I. DHLW Glass information from CDB, 2/21/95, 19 pages
- II. Calculation of elemental/isotopic weight fractions for use in MCNP, 2 pages
- III. DHLW glass, infinite array, Flooded (DHLWG1.O), 12/1/95, 15 pages
- IV. DHLW glass, infinite array, Dry (DHLWG2.O), 12/1/95, 15 pages
- V. DHLW glass, infinite array, Dry, fissile x 100 (DHLWG3.O), 12/1/95, 15 pages
- VI. DHLW glass, infinite array, Flooded, No Absorbers (DHLWG4.O), 12/1/95, 13 pages
- VII. DHLW glass, infinite array, Dry, No Absorbers (DHLWG5.O), 12/1/95, 13 pages
- VIII. DHLW glass, infinite array, Flooded, fissile x 100 (DHLWG6), 12/1/95, 15 pages

Figure 7.3-1. MCNP Cross-Sectional View of the DHLW Glass Model with 4 Pour Canisters.

```
12A2A5 11.03.06  
DHLWG1-- DWPF GLASS INFINITE  
ARRAY FLOODED
```

```
PROBID = 12A2A5 11.04.15  
BASIS:  
(1.000000, 0.000000, 0.000000)  
(0.000000, 1.000000, 0.000000)  
ORIGIN:  
( 10.00, 00, 5.00)  
EXTINT = ( 75.00, 75.00)
```

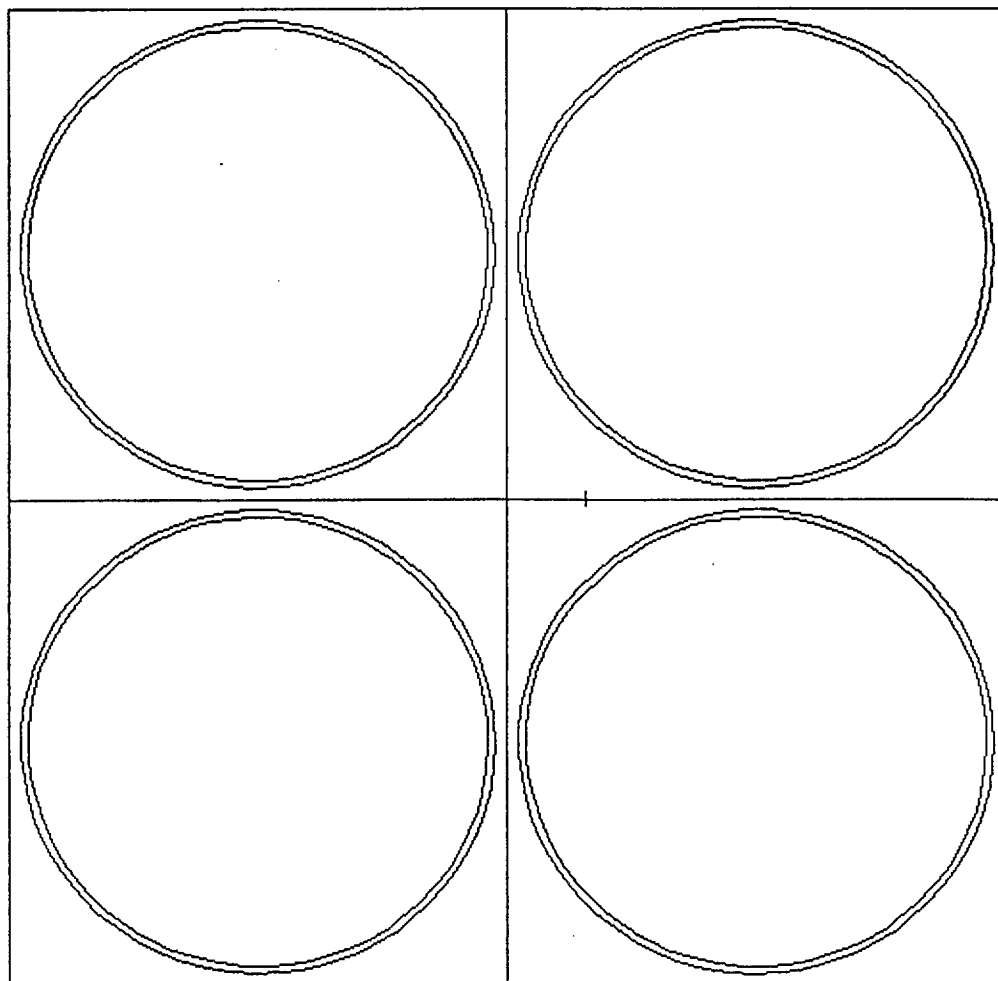


Table 3.3.1. Savannah River Site. High-level waste form and canister characteristics*a

	Canister 85% fill
Canister inside volume, m3	0.736
Glass volume at average fill temperature (see note b), m3	0.626
Glass density at average fill temperature (see note b), g/cm3	2.69
Glass weight, kg	1,682
Canister weight, kg	500
Gross weight, kg	2,182
Total activity, curies	234,000*c
Decay heat, watts	690*c

*aSources: DWPF Basic Data Report, DPSP 80-1033, Rev. 91, April 1985; Baxter 1988.

*bThe average fill temperature (i.e. the average temperature of the glass upon completion of filling to 85% of canister volume) is 825 deg. C. The glass volume per canister when cooled to 25 deg. C is about 0.59 m3. The density of the glass is about 2.69 g/cm3 at 825 deg. C and 2.85 g/cm3 at 25 deg. C (SRP 1987).

*cThese figures are the ones given in DPSP 80-1033, Rev. 91. The corresponding figures calculated by ORIGEN2 are 234,400 Ci and 709W, as shown in Table 3.3.4. Activity and decay heat (thermal power) are at the time of filling the canister and are based on the maximum case, i.e. 5-yr old sludge and 15-yr old supernate.

Table 3.3.2. DWPF, Savannah River Site.
Estimated production schedule of canisters of HLW glassa

End of calendar year	Number of canisters produced during year	Cumulative number of canisters produced	Cumulative volume of glass produced m**3
1991	0	0	0
1992	136	136	85
1993	308	444	278
1994	376	820	513
1995	410	1,230	769
1996	410	1,640	1,025
1997	383	2,023	1,264
1998	369	2,392	1,495
1999	369	2,761	1,726
2000	342	3,103	1,939
2001	342	3,445	2,153
2002	342	3,787	2,367
2003	342	4,129	2,581
2004	302	4,431	2,769
2005	273	4,704	2,940
2006	273	4,977	3,111
2007	273	5,250	3,281
2008	32	5,282	3,301
2009	0	5,282	3,301
2010	0	5,282	3,301
2011	0	5,282	3,301
2012	0	5,282	3,301
2013	0	5,282	3,301
2014	0	5,282	3,301
2015	0	5,282	3,301
2016	0	5,282	3,301
2017	0	5,282	3,301
2018	0	5,282	3,301
2019	0	5,282	3,301
2020	0	5,282	3,301

*aProduction shown is based on a glass melt rate of 228 lb/hr and 75% attainment. Canisters (2-ft diameter x 10-ft long) are assumed to contain 1682 kg of glass, which represents filling to 85% capacity.
Source: Baxter 1988, Garvin 1990.

Table 3.3.3. Savannah River Site. Radioisotope
content per HLW canister*a

	Isotope	Curies/canister	Grams/canister
1	Cr-51	0.9312E-16	0.1008E-20
2	Co-60	0.1699E+03	0.1502E+00
3	Ni-59	0.2397E-01	0.3163E+00
4	Ni-63	0.2975E+01	0.4824E-01
5	Tl-208	0.1128E-02	0.3829E-11
6	U-232	0.1339E-01	0.6256E-03
7	U-233	0.1584E-05	0.1636E-03
8	U-234	0.3428E-01	0.5485E+01
9	U-235	0.1573E-03	0.7278E+02
10	U-236	0.1128E-02	0.1742E+02
11	U-238	0.1050E-01	0.3122E+05
12	Np-236	0.1744E-07	0.1323E-05
13	Np-237	0.8904E-02	0.1263E+02
14	Pu-236	0.1221E+00	0.2297E-03
15	Pu-237	0.8941E-11	0.7401E-15
16	Pu-238	0.1484E+04	0.8667E+02
17	Pu-239	0.1291E+02	0.2076E+03
18	Pu-240	0.8681E+01	0.3809E+02
19	Pu-241	0.1670E+04	0.1620E+02
20	Pu-242	0.1224E-01	0.3206E+01
21	Am-241	0.1102E+02	0.3210E+01
22	Am-242	0.1436E-01	0.1776E-07
23	Am-242m	0.1447E-01	0.1488E-02
24	Am-243	0.5788E-02	0.2902E-01
25	Cm-242	0.3495E-01	0.1057E-04
26	Cm-243	0.5565E-02	0.1078E-03
27	Cm-244	0.1076E+03	0.1329E+01
28	Cm-245	0.6715E-05	0.3910E-04
29	Cm-246	0.5342E-06	0.1739E-05
30	Cm-247	0.6604E-12	0.7116E-08
31	Cm-248	0.6864E-12	0.1614E-09
32	Se-79	0.1699E+00	0.2439E+01
33	Rb-87	0.8719E-06	0.9961E+01
34	Sr-89	0.4267E-04	0.1470E-08
35	Sr-90	0.4675E+05	0.3426E+03
36	Y-90	0.4786E+05	0.8795E-01
37	Y-91	0.7568E-03	0.3085E-07
38	Zr-93	0.1117E+01	0.4443E+03
39	Zr-95	0.1005E-01	0.4680E-06
40	Nb-94	0.9646E-04	0.5147E-03
41	Nb-95	0.2115E-01	0.5407E-06
42	Nb-95m	0.1247E-03	0.3272E-09
43	Tc-99	0.3079E+01	0.1816E+03
44	Ru-103	0.1684E-07	0.5217E-12
45	Ru-106	0.2252E+04	0.6729E+00
46	Rh-103m	0.1636E-07	0.5028E-15
47	Rh-106	0.2259E+04	0.6346E-06
48	Pd-107	0.1473E-01	0.2863E+02
49	Ag-110m	0.1258E+00	0.2647E-04
50	Cd-113	0.5009E-13	0.1472E+00
51	Cd-115m	0.1213E-08	0.4763E-13
52	Sn-121m	0.7902E-01	0.1336E-02
53	Sn-123	0.2549E+00	0.3101E-04
54	Sn-126	0.4415E+00	0.1556E+02
55	Sb-124	0.7123E-07	0.4071E-11
56	Sb-125	0.8496E+03	0.8226E+00
57	Sb-126	0.6159E-01	0.7365E-06
58	Sb-126m	0.4415E+00	0.5619E-08

CDB Output 2/21/95 BBAC00000-01717-0200-00001 REV 00 Attachment I - Page 4

59	Te-125m	0.2760E+03	0.1532E-01
60	Te-127	0.1202E+00	0.4555E-07
61	Te-127m	0.1228E+00	0.1302E-04
62	Te-129	0.3053E-11	0.1457E-18
63	Te-129m	0.4749E-11	0.1576E-15
64	Cs-134	0.3372E+03	0.2606E+00
65	Cs-135	0.9943E-01	0.8633E+02
66	Cs-136	0.7828E-39	0.1068E-43
67	Cs-137	0.4341E+05	0.4989E+03
68	Ba-136m	0.8607E-38	0.3195E-49
69	Ba-137m	0.4155E+05	0.7724E-04
70	Ba-140	0.1024E-35	0.1404E-40
71	La-140	0.4304E-36	0.7734E-42
72	Ce-141	0.3591E-10	0.1260E-14
73	Ce-142	0.9609E-05	0.4005E+03
74	Ce-144	0.9869E+04	0.3093E+01
75	Pr-143	0.1198E-33	0.1780E-38
76	Pr-144	0.9869E+04	0.1306E-03
77	Pr-144m	0.1187E+03	0.6545E-06
78	Nd-144	0.4860E-09	0.4110E+03
79	Nd-147	0.1261E-43	0.1570E-48
80	Pm-147	0.2419E+05	0.2609E+02
81	Pm-148	0.6975E-10	0.4243E-15
82	Pm-148m	0.1009E-08	0.4722E-13
83	Sm-147	0.2000E-05	0.8796E+02
84	Sm-148	0.5788E-11	0.1916E+02
85	Sm-149	0.1781E-11	0.7420E+01
86	Sm-151	0.2478E+03	0.9418E+01
87	Eu-152	0.3688E+01	0.2132E-01
88	Eu-154	0.6196E+03	0.2295E+01
89	Eu-155	0.4749E+03	0.1021E+01
90	Eu-156	0.5231E-31	0.9489E-36
91	Tb-160	0.1120E-05	0.9923E-10
	Total	0.2344E+06	0.3427E+05

*aQuantities shown are for sludge + supernate glass and are based on the DWPF Basic Data Report, DPSP 80-1033, Rev. 91, April 1985, assuming sludge aged an average of 5 years and supernate aged an average of 15 years, with a canister load of 3710 lb of glass (1682 kg). Radionuclide contents are at time of filling canister.

Table 3.3.4. Savannah River Site. Calculated radioactivity and thermal power per HLW canister.*a

Decay time, years*b	Radioactivity per canister (Ci)*c	Thermal power per canister (W)*c
0	234,400	709
1	208,500	627
2	193,800	586
5	169,300	527
10	145,800	467
15	128,400	418
20	113,900	374
30	90,000	301
50	56,500	198
100	17,900	75
200	2,100	17
300	390	7.2
350	227	5.2
500	95	2.7
1,000	42	1.1
1,050	41	1.1
2,000	29	0.72
5,000	24	0.54
10,000	20	0.43
20,000	16	0.30
50,000	11	0.16
100,000	9.2	0.11
500,000	4.8	0.05
1,000,000	2.4	0.02

*aBased on 5-yr cooled sludge and 15-yr cooled supernate. Calculations made by ORIGEN2 code based on data supplied by SRS (Basic Data Report, DPSP-80-1033, Rev. 91, April 1985). Canister is filled to 85% of capacity and contains 1682 kg of glass.

*bYears after vitrification.

*cRadioactivity and thermal power include contributions of actinides and activation products as well as fission products.

Table 3.3.5. Savannah River Site. Estimated cumulative average radioactivity and thermal power per canister of HLW glass*a

End of calendar year	Cumulative number of canisters produced	Cumulative radioactivity		Cumulative thermal power	
		Total (10**6 Ci)	per canister (Ci)	Total (10**3 W)	per canister (W)
1989	0	0.0	--	--	--
1990	0	0.0	--	--	--
1991	0	0.0	--	--	--
1992	136	22.6	116,200	56.9	418.4
1993	444	52.0	117,100	132.6	298.6
1994	820	87.7	107,000	223.1	272.1
1995	1,230	150.0	122,000	412.5	335.4
1996	1,640	211.0	128,700	603.0	367.7
1997	2,023	263.6	130,300	763.0	377.2
1998	2,392	310.8	129,900	908.0	379.6
1999	2,761	345.6	125,200	1,018.8	369.0
2000	3,103	372.2	120,000	1,103.5	355.6
2001	3,445	393.3	114,200	1,170.7	339.8
2002	3,787	410.8	108,500	1,227.4	324.1
2003	4,129	425.7	103,100	1,276.2	309.1
2004	4,431	438.3	98,900	1,318.1	297.5
2005	4,704	449.3	95,500	1,355.0	288.1
2006	4,977	458.7	92,200	1,387.2	278.7
2007	5,250	467.4	89,000	1,415.8	269.7
2008	5,282	459.4	87,000	1,397.3	264.5
2009	5,282	449.8	85,200	1,368.1	259.0
2010	5,282	439.5	83,200	1,339.9	253.7
2011	5,282	429.3	81,300	1,310.3	248.1
2012	5,282	419.4	79,400	1,281.5	242.6
2013	5,282	409.7	77,600	1,253.2	237.3
2014	5,282	399.2	75,600	1,225.6	232.0
2015	5,282	390.9	74,000	1,198.8	227.0
2016	5,282	381.9	72,300	1,172.5	222.0
2017	5,282	373.1	70,600	1,146.5	217.1
2018	5,282	364.5	69,000	1,121.9	212.4
2019	5,282	356.0	67,400	1,097.5	207.8
2020	5,282	347.8	65,900	1,073.7	203.3

*aSource: Garvin 1990. Year-by-year radioactivity and thermal power per canister do not necessarily represent actual processing schedules and tankage allocations and should not be used for design purposes.

Table 3.3.7. Projected radioactivity of canisters of HLW produced each year at SRS*a

End of calendar year	Canisters produced per year	Radioactivity per canister produced in that year, Curies*b
1992	136	164,600
1993	308	96,500
1994	376	97,400
1995	410	156,400
1996	410	156,500
1997	383	149,600
1998	369	143,900
1999	369	113,600
2000	342	101,100
2001	342	86,700
2002	342	77,900
2003	342	71,500
2004	302	74,700
2005	273	77,600
2006	273	72,900
2007	273	71,000
2008	32	121,000

*a Source: Garvin 1990.

*b Radioactivity shown is for fission products only. When actinides are included, the radioactivities shown will increase by about 1%.

Table 3.3.6. Savannah River Site.
Rates of neutron production per canister of vitrified
high-level waste from (alpha, n) reactions and from
spontaneous fission*a

Actinide	Neutron production rates per canister, neutrons/sec		
	Alpha, n	Spontaneous fission	Total
U-238	*b	3.960E+02	3.960E+02
Pu-238	5.791E+07	2.302E+05	5.814E+07
Pu-239	3.969E+05	5.685E+00	3.969E+05
Pu-240	2.680E+05	3.467E+04	3.027E+05
Pu-242	*b	5.402E+03	5.402E+02
Am-241	4.248E+05	3.981E+00	4.248E+05
Cm-242	1.975E+03	2.278E+02	2.203E+03
Cm-244	5.105E+06	1.478E+07	1.989E+07
Totals	6.411E+07	1.505E+07	7.916E+07

*aCalculated from canister composition of sludge-precipitate glass at time of pouring. Neutron production rates shown are uniform source terms in the glass rather than dose rates at the exterior, i.e., the shielding effects of the glass and the canister wall have not been calculated. Actinides that make a negligible contribution to totals have been omitted. Canister contains 1682 kg of HLW glass.

*bQuantity is negligible compared to total (alpha, n) neutron production.

Table 3.3.8. Savannah River Site.
Chemical composition of HLW glass*a

Component	Water free wt %
Ag	0.05
Al ₂ O ₃	3.96
B ₂ O ₃	10.28
BaSO ₄	0.14
Ca ₃ (PO ₄) ₂	0.07
CaO	0.85
CaSO ₄	0.08
Cr ₂ O ₃	0.12
Cs ₂ O	0.08
CuO	0.19
Fe ₂ O ₃	7.04
FeO	3.12
K ₂ O	3.58
Li ₂ O	3.16
MgO	1.36
MnO	2.00
Na ₂ O	11.00
Na ₂ SO ₄	0.36
NaCl	0.19
NaF	0.07
NiO	0.93
PbS	0.07
SiO ₂	45.57
ThO ₂	0.21
TiO ₂	0.99
U ₃ O ₈	2.20
Zeolite	1.67
ZnO	0.08
Others	0.58
Total	100.00

*aSource: Baxter 1988.

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All activation products UNITS: Grams

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Co 59	4.111E-05	5.481E-05	8.220E-05	1.370E-04	2.739E-04
Co 60	2.088E-02	1.082E-02	2.904E-03	2.091E-04	2.903E-07
Ni 59	3.163E-01	3.162E-01	3.162E-01	3.162E-01	3.160E-01
Ni 60	1.293E-01	1.394E-01	1.473E-01	1.500E-01	1.502E-01
Ni 63	4.308E-02	4.149E-02	3.848E-02	3.310E-02	2.271E-02
Cu 63	5.155E-03	6.748E-03	9.759E-03	1.514E-02	2.553E-02

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All activation products UNITS: Total curies

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Co 60	2.362E+01	1.224E+01	3.284E+00	2.366E-01	3.283E-04
Ni 59	2.396E-02	2.396E-02	2.396E-02	2.396E-02	2.395E-02
Ni 63	2.659E+00	2.560E+00	2.374E+00	2.042E+00	1.401E+00

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All activation products UNITS: Alpha curies

ISOTOPE	15YR	20YR	30YR	50YR	100YR
No isotopes were found in this group with significant values.					

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All activation products UNITS: Total watts

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Co 60	3.642E-01	1.887E-01	5.064E-02	3.647E-03	5.062E-06
Ni 59	9.517E-07	9.517E-07	9.516E-07	9.514E-07	9.510E-07
Ni 63	2.679E-04	2.580E-04	2.393E-04	2.058E-04	1.412E-04

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All actinides and daughters UNITS: Grams

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Pb206	4.090E-12	1.390E-11	7.874E-11	7.054E-10	1.358E-08
U234	1.501E+01	1.794E+01	2.346E+01	3.329E+01	5.201E+01
U235	7.287E+01	7.290E+01	7.296E+01	7.307E+01	7.337E+01
U236	1.748E+01	1.750E+01	1.754E+01	1.762E+01	1.782E+01
U238	3.122E+04	3.122E+04	3.122E+04	3.122E+04	3.122E+04
Pu238	7.699E+01	7.400E+01	6.838E+01	5.839E+01	3.934E+01
Pu239	2.075E+02	2.075E+02	2.074E+02	2.073E+02	2.070E+02
Pu240	3.860E+01	3.871E+01	3.886E+01	3.900E+01	3.896E+01

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): All actinides and daughters UNITS: Total curies

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Tl207	1.023E-08	1.734E-08	3.553E-08	8.315E-08	2.327E-07
Tl209	5.768E-11	8.092E-11	1.335E-10	2.633E-10	7.398E-10
Pb209	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Pb210	3.038E-09	7.671E-09	2.869E-08	1.528E-07	1.436E-06
Pb211	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07

Pb214	2.395E-08	4.765E-08	1.293E-07	4.747E-07	2.902E-06
Bi210	3.038E-09	7.673E-09	2.869E-08	1.528E-07	1.436E-06
Bi211	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Bi213	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Bi214	2.395E-08	4.765E-08	1.293E-07	4.747E-07	2.902E-06
Po210	3.038E-09	7.673E-09	2.869E-08	1.528E-07	1.436E-06
Po213	2.613E-09	3.665E-09	6.046E-09	1.193E-08	3.351E-08
Po214	2.395E-08	4.764E-08	1.293E-07	4.746E-07	2.902E-06
Po215	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Po218	2.396E-08	4.766E-08	1.293E-07	4.748E-07	2.903E-06
At217	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Rn219	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Rn222	2.396E-08	4.766E-08	1.293E-07	4.748E-07	2.903E-06
Fr221	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Ra223	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Ra225	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Ra226	2.396E-08	4.766E-08	1.293E-07	4.748E-07	2.903E-06
Ac225	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Ac227	1.025E-08	1.736E-08	3.560E-08	8.334E-08	2.333E-07
Th227	1.012E-08	1.714E-08	3.514E-08	8.223E-08	2.302E-07
Th229	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Th230	8.727E-06	1.336E-05	2.503E-05	5.710E-05	1.788E-04
Th231	1.576E-04	1.576E-04	1.578E-04	1.580E-04	1.587E-04
Th234	1.050E-02	1.050E-02	1.050E-02	1.050E-02	1.050E-02
Np237	9.037E-03	9.105E-03	9.261E-03	9.622E-03	1.057E-02
Np239	5.779E-03	5.777E-03	5.771E-03	5.760E-03	5.733E-03
Pa231	5.002E-08	6.670E-08	1.001E-07	1.668E-07	3.340E-07
Pa233	9.037E-03	9.105E-03	9.261E-03	9.622E-03	1.057E-02
Pa234	1.365E-05	1.365E-05	1.365E-05	1.365E-05	1.365E-05
Pa234m	1.050E-02	1.050E-02	1.050E-02	1.050E-02	1.050E-02
U233	2.180E-06	2.378E-06	2.780E-06	3.605E-06	5.812E-06
U234	9.381E-02	1.121E-01	1.467E-01	2.081E-01	3.251E-01
U235	1.576E-04	1.576E-04	1.578E-04	1.580E-04	1.587E-04
U236	1.131E-03	1.133E-03	1.135E-03	1.141E-03	1.154E-03
U237	1.990E-02	1.564E-02	9.664E-03	3.690E-03	3.324E-04
U238	1.050E-02	1.050E-02	1.050E-02	1.050E-02	1.050E-02
Pu236	3.183E-03	9.439E-04	8.300E-05	6.431E-07	1.572E-09
Pu238	1.318E+03	1.267E+03	1.171E+03	1.000E+03	6.737E+02
Pu239	1.290E+01	1.290E+01	1.290E+01	1.289E+01	1.287E+01
Pu240	8.799E+00	8.824E+00	8.858E+00	8.890E+00	8.880E+00
Pu241	8.110E+02	6.375E+02	3.939E+02	1.504E+02	1.355E+01
Pu242	1.225E-02	1.225E-02	1.225E-02	1.225E-02	1.224E-02
Am241	3.898E+01	4.442E+01	5.176E+01	5.809E+01	5.793E+01
Am242	1.344E-02	1.314E-02	1.255E-02	1.146E-02	9.124E-03
Am242m	1.351E-02	1.321E-02	1.262E-02	1.152E-02	9.169E-03
Am243	5.779E-03	5.777E-03	5.771E-03	5.760E-03	5.733E-03
Cm242	1.112E-02	1.087E-02	1.038E-02	9.477E-03	7.545E-03
Cm244	6.058E+01	5.003E+01	3.412E+01	1.587E+01	2.341E+00

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant
CASE)

MAXIMUM RADIOACTIVITY (ONE

WASTE TYPE: Immobilized (in canisters)

ISOTOPE(S): All actinides and daughters

UNITS: Alpha curies

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Bi211	1.023E-08	1.734E-08	3.553E-08	8.315E-08	2.327E-07
Po210	3.038E-09	7.673E-09	2.869E-08	1.528E-07	1.436E-06
Po213	2.613E-09	3.665E-09	6.046E-09	1.193E-08	3.351E-08
Po214	2.395E-08	4.764E-08	1.293E-07	4.746E-07	2.902E-06
Po215	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Po218	2.395E-08	4.765E-08	1.293E-07	4.747E-07	2.902E-06
At217	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Rn219	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07

Rn222	2.396E-08	4.766E-08	1.293E-07	4.748E-07	2.903E-06
Fr221	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Ra223	1.026E-08	1.738E-08	3.563E-08	8.338E-08	2.334E-07
Ra226	2.396E-08	4.766E-08	1.293E-07	4.748E-07	2.903E-06
Ac225	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Th227	1.012E-08	1.714E-08	3.514E-08	8.223E-08	2.302E-07
Th229	2.671E-09	3.746E-09	6.179E-09	1.219E-08	3.425E-08
Th230	8.727E-06	1.336E-05	2.503E-05	5.710E-05	1.788E-04
Np237	9.037E-03	9.105E-03	9.261E-03	9.622E-03	1.057E-02
Pa231	5.002E-08	6.670E-08	1.001E-07	1.668E-07	3.340E-07
U233	2.180E-06	2.378E-06	2.780E-06	3.605E-06	5.812E-06
U234	9.381E-02	1.121E-01	1.467E-01	2.081E-01	3.251E-01
U235	1.576E-04	1.576E-04	1.578E-04	1.580E-04	1.587E-04
U236	1.131E-03	1.133E-03	1.135E-03	1.141E-03	1.154E-03
U238	1.050E-02	1.050E-02	1.050E-02	1.050E-02	1.050E-02
Pu238	1.318E+03	1.267E+03	1.171E+03	1.000E+03	6.737E+02
Pu239	1.290E+01	1.290E+01	1.290E+01	1.289E+01	1.287E+01
Pu240	8.799E+00	8.824E+00	8.858E+00	8.890E+00	8.880E+00
Pu242	1.225E-02	1.225E-02	1.225E-02	1.225E-02	1.224E-02
Am241	3.898E+01	4.442E+01	5.176E+01	5.809E+01	5.793E+01
Cm244	6.058E+01	5.003E+01	3.412E+01	1.587E+01	2.341E+00

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant

MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)

ISOTOPE(S): All actinides and daughters

UNITS: Total watts

ISOTOPE	15YR	20YR	30YR	50YR	100YR
Tl207	3.005E-11	5.091E-11	1.043E-10	2.442E-10	6.834E-10
Tl209	9.584E-13	1.345E-12	2.218E-12	4.375E-12	1.229E-11
Pb209	3.071E-12	4.308E-12	7.106E-12	1.402E-11	3.938E-11
Pb210	7.037E-13	1.777E-12	6.645E-12	3.539E-11	3.327E-10
Pb211	3.075E-11	5.209E-11	1.068E-10	2.498E-10	6.993E-10
Pb214	7.639E-11	1.520E-10	4.124E-10	1.514E-09	9.256E-09
Bi210	7.006E-12	1.769E-11	6.615E-11	3.523E-10	3.312E-09
Bi211	4.093E-10	6.934E-10	1.421E-09	3.326E-09	9.309E-09
Bi213	1.123E-11	1.575E-11	2.598E-11	5.125E-11	1.440E-10
Bi214	3.070E-10	6.107E-10	1.657E-09	6.083E-09	3.720E-08
Po210	9.740E-11	2.460E-10	9.197E-10	4.897E-09	4.604E-08
Po212	5.428E-04	5.266E-04	4.813E-04	3.976E-04	2.455E-04
Po213	1.322E-10	1.855E-10	3.059E-10	6.036E-10	1.696E-09
Po214	1.112E-09	2.212E-09	6.003E-09	2.204E-08	1.347E-07
Po215	4.581E-10	7.761E-10	1.591E-09	3.722E-09	1.042E-08
Po216	6.544E-04	6.349E-04	5.803E-04	4.793E-04	2.959E-04
Po218	8.681E-10	1.727E-09	4.687E-09	1.720E-08	1.052E-07
At217	1.140E-10	1.599E-10	2.637E-10	5.202E-10	1.462E-09
Rn219	4.258E-10	7.213E-10	1.479E-09	3.460E-09	9.684E-09
Rn220	6.069E-04	5.889E-04	5.382E-04	4.446E-04	2.745E-04
Rn222	7.939E-10	1.579E-09	4.286E-09	1.573E-08	9.619E-08
Fr221	1.031E-10	1.446E-10	2.385E-10	4.705E-10	1.322E-09
Ra223	3.654E-10	6.190E-10	1.269E-09	2.969E-09	8.310E-09
Ra224	5.486E-04	5.323E-04	4.865E-04	4.019E-04	2.481E-04
Ra225	1.873E-12	2.627E-12	4.333E-12	8.549E-12	2.402E-11
Ra226	6.918E-10	1.376E-09	3.735E-09	1.371E-08	8.382E-08
Ac225	9.329E-11	1.309E-10	2.158E-10	4.259E-10	1.196E-09
Ac227	4.964E-12	8.408E-12	1.724E-11	4.035E-11	1.130E-10
Th227	3.693E-10	6.257E-10	1.283E-09	3.001E-09	8.400E-09
Th228	5.223E-04	5.068E-04	4.635E-04	3.829E-04	2.364E-04
Th229	8.170E-11	1.146E-10	1.890E-10	3.730E-10	1.048E-09
Th230	2.470E-07	3.782E-07	7.083E-07	1.616E-06	5.059E-06
Th231	8.842E-08	8.845E-08	8.852E-08	8.867E-08	8.902E-08
Th234	4.257E-06	4.257E-06	4.257E-06	4.257E-06	4.257E-06
Np237	2.762E-04	2.783E-04	2.831E-04	2.941E-04	3.232E-04

Np239	1.397E-05	1.396E-05	1.395E-05	1.392E-05	1.386E-05
Pa231	1.507E-09	2.010E-09	3.015E-09	5.026E-09	1.006E-08
Pa233	2.051E-05	2.066E-05	2.102E-05	2.184E-05	2.400E-05
Pa234	1.961E-07	1.961E-07	1.961E-07	1.961E-07	1.961E-07
Pa234m	5.189E-05	5.189E-05	5.189E-05	5.189E-05	5.189E-05
U232	5.079E-04	4.868E-04	4.431E-04	3.656E-04	2.259E-04
U233	6.338E-08	6.914E-08	8.081E-08	1.048E-07	1.689E-07
U234	2.702E-03	3.230E-03	4.225E-03	5.993E-03	9.365E-03
U235	4.127E-06	4.128E-06	4.132E-06	4.138E-06	4.155E-06
U236	3.065E-05	3.068E-05	3.075E-05	3.090E-05	3.125E-05
U238	2.663E-04	2.663E-04	2.663E-04	2.663E-04	2.663E-04
Pu236	1.108E-04	3.285E-05	2.888E-06	2.238E-08	5.469E-11
Pu238	4.370E+01	4.200E+01	3.881E+01	3.314E+01	2.233E+01
Pu239	3.977E-01	3.976E-01	3.975E-01	3.973E-01	3.967E-01
Pu240	2.740E-01	2.747E-01	2.758E-01	2.768E-01	2.765E-01
Pu241	2.514E-02	1.976E-02	1.221E-02	4.663E-03	4.201E-04
Pu242	3.616E-04	3.616E-04	3.616E-04	3.616E-04	3.616E-04
Am241	1.295E+00	1.476E+00	1.719E+00	1.930E+00	1.924E+00
Am243	1.858E-04	1.857E-04	1.855E-04	1.852E-04	1.843E-04
Cm242	4.098E-04	4.006E-04	3.826E-04	3.492E-04	2.780E-04
Cm244	2.119E+00	1.750E+00	1.193E+00	5.551E-01	8.189E-02

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

ISOTOPE(S): All fission products		WASTE TYPE: Immobilized (in canisters)				
		UNITS: Grams				
ISOTOPE	15YR	20YR	30YR	50YR	100YR	
Rb 87	9.961E+00	9.961E+00	9.961E+00	9.961E+00	9.961E+00	
Sr 90	2.397E+02	2.128E+02	1.678E+02	1.042E+02	3.170E+01	
Zr 90	1.029E+02	1.298E+02	1.749E+02	2.384E+02	3.110E+02	
Zr 93	4.443E+02	4.443E+02	4.443E+02	4.443E+02	4.443E+02	
Nb 93	1.014E-03	1.628E-03	3.100E-03	6.606E-03	1.640E-02	
Tc 99	1.816E+02	1.816E+02	1.816E+02	1.816E+02	1.815E+02	
Ru 99	8.864E-03	1.182E-02	1.773E-02	2.954E-02	5.908E-02	
Pd107	2.863E+01	2.863E+01	2.863E+01	2.863E+01	2.863E+01	
Ag107	4.582E-05	6.110E-05	9.165E-05	1.527E-04	3.055E-04	
Sn126	1.556E+01	1.556E+01	1.556E+01	1.555E+01	1.555E+01	
Te126	1.618E-03	2.157E-03	3.235E-03	5.391E-03	1.078E-02	
Cs135	8.633E+01	8.633E+01	8.633E+01	8.633E+01	8.633E+01	
Cs137	3.528E+02	3.143E+02	2.494E+02	1.571E+02	4.949E+01	
Ba135	3.903E-04	5.204E-04	7.805E-04	1.301E-03	2.602E-03	
Ba137	1.461E+02	1.846E+02	2.495E+02	3.418E+02	4.494E+02	
Ce142	4.005E+02	4.005E+02	4.005E+02	4.005E+02	4.005E+02	
Ce144	4.880E-06	5.685E-08	7.705E-12	1.415E-19	6.469E-39	
Nd144	4.141E+02	4.141E+02	4.141E+02	4.141E+02	4.141E+02	
Pm147	4.958E-01	1.323E-01	9.421E-03	4.783E-05	8.758E-11	
Sm147	1.136E+02	1.139E+02	1.140E+02	1.140E+02	1.140E+02	
Sm148	1.916E+01	1.916E+01	1.916E+01	1.916E+01	1.916E+01	
Sm149	7.420E+00	7.420E+00	7.420E+00	7.420E+00	7.420E+00	
Sm151	8.390E+00	8.073E+00	7.475E+00	6.408E+00	4.360E+00	
Eu151	1.028E+00	1.345E+00	1.943E+00	3.010E+00	5.058E+00	

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

ISOTOPE(S):		WASTE TYPE: Immobilized (in canisters)				
All fission products		UNITS: Total curies				
ISOTOPE	15YR	20YR	30YR	50YR	100YR	
Se 79	1.699E-01	1.699E-01	1.699E-01	1.699E-01	1.698E-01	
Sr 90	3.271E+04	2.904E+04	2.289E+04	1.422E+04	4.326E+03	
Y 90	3.272E+04	2.905E+04	2.290E+04	1.422E+04	4.327E+03	
Zr 93	1.117E+00	1.117E+00	1.117E+00	1.117E+00	1.117E+00	
Nb 93m	5.670E-01	6.781E-01	8.310E-01	9.780E-01	1.054E+00	

Nb 94	9.642E-05	9.641E-05	9.637E-05	9.631E-05	9.614E-05
Tc 99	3.080E+00	3.080E+00	3.080E+00	3.079E+00	3.079E+00
Ru106	7.464E-02	2.398E-03	2.597E-06	2.764E-12	3.232E-27
Rh106	7.464E-02	2.398E-03	2.597E-06	2.764E-12	3.232E-27
Pd107	1.473E-02	1.473E-02	1.473E-02	1.473E-02	1.473E-02
Sn126	4.416E-01	4.416E-01	4.415E-01	4.415E-01	4.413E-01
Sb125	1.991E+01	5.697E+00	4.665E-01	3.128E-03	1.151E-08
Sb126	6.182E-02	6.182E-02	6.182E-02	6.181E-02	6.179E-02
Sb126m	4.416E-01	4.416E-01	4.415E-01	4.415E-01	4.413E-01
Te125m	4.858E+00	1.390E+00	1.138E-01	7.632E-04	2.809E-09
Cs134	2.178E+00	4.057E-01	1.407E-02	1.685E-05	8.453E-13
Cs135	9.944E-02	9.944E-02	9.944E-02	9.944E-02	9.944E-02
Cs137	3.070E+04	2.735E+04	2.171E+04	1.367E+04	4.307E+03
Ba137m	2.904E+04	2.587E+04	2.053E+04	1.294E+04	4.074E+03
Ce144	1.558E-02	1.814E-04	2.459E-08	4.516E-16	2.064E-35
Pr144	1.558E-02	1.814E-04	2.459E-08	4.516E-16	2.065E-35
Pr144m	1.870E-04	2.177E-06	2.951E-10	5.419E-18	2.477E-37
Pm147	4.598E+02	1.227E+02	8.737E+00	4.436E-02	8.122E-08
Sm151	2.208E+02	2.125E+02	1.967E+02	1.686E+02	1.147E+02
Eu152	1.717E+00	1.331E+00	7.995E-01	2.885E-01	2.257E-02
Eu154	1.850E+02	1.236E+02	5.522E+01	1.102E+01	1.959E-01
Eu155	5.837E+01	2.902E+01	7.173E+00	4.382E-01	4.042E-04

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)

ISOTOPE(S): All fission products UNITS: Alpha curies
 ISOTOPE 15YR 20YR 30YR 50YR 100YR

No isotopes were found in this group with significant values.

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE CASE)

WASTE TYPE: Immobilized (in canisters)

ISOTOPE(S): All fission products UNITS: Total watts
 ISOTOPE 15YR 20YR 30YR 50YR 100YR

Se 79	4.231E-05	4.231E-05	4.230E-05	4.230E-05	4.227E-05
Sr 90	3.797E+01	3.371E+01	2.657E+01	1.651E+01	5.021E+00
Y 90	1.814E+02	1.610E+02	1.269E+02	7.884E+01	2.398E+01
Zr 93	1.298E-04	1.298E-04	1.298E-04	1.298E-04	1.297E-04
Nb 93m	1.005E-04	1.201E-04	1.472E-04	1.733E-04	1.868E-04
Nb 94	9.825E-07	9.823E-07	9.820E-07	9.813E-07	9.797E-07
Tc 99	1.544E-03	1.544E-03	1.544E-03	1.544E-03	1.544E-03
Ru106	4.437E-06	1.425E-07	1.544E-10	1.644E-16	1.922E-31
Rh106	7.159E-04	2.300E-05	2.491E-08	2.651E-14	3.100E-29
Pd107	8.732E-07	8.732E-07	8.732E-07	8.732E-07	8.732E-07
Sn121m	1.286E-04	1.200E-04	1.044E-04	7.913E-05	3.955E-05
Sn126	5.507E-04	5.507E-04	5.507E-04	5.506E-04	5.504E-04
Sb125	6.224E-02	1.781E-02	1.458E-03	9.778E-06	3.599E-11
Sb126	1.142E-03	1.142E-03	1.142E-03	1.142E-03	1.142E-03
Sb126m	5.623E-03	5.622E-03	5.622E-03	5.621E-03	5.619E-03
Te125m	4.083E-03	1.168E-03	9.567E-05	6.415E-07	2.361E-12
Cs134	2.217E-02	4.129E-03	1.432E-04	1.715E-07	8.604E-15
Cs135	3.319E-05	3.319E-05	3.319E-05	3.319E-05	3.319E-05
Cs137	3.396E+01	3.025E+01	2.401E+01	1.513E+01	4.764E+00
Ba137m	1.140E+02	1.016E+02	8.063E+01	5.079E+01	1.600E+01
Ce144	1.033E-05	1.203E-07	1.631E-11	2.996E-19	1.369E-38
Pr144	1.145E-04	1.334E-06	1.807E-10	3.320E-18	1.518E-37
Pr144m	6.398E-08	7.449E-10	1.010E-13	1.854E-21	8.476E-41
Pm147	1.649E-01	4.401E-02	3.134E-03	1.591E-05	2.913E-11
Sm147	3.535E-08	3.546E-08	3.550E-08	3.551E-08	3.551E-08
Sm151	2.589E-02	2.491E-02	2.307E-02	1.977E-02	1.345E-02
Eu152	1.299E-02	1.007E-02	6.047E-03	2.182E-03	1.707E-04

CDB Output 2/21/95 BBAC00000-01717-0200-00001 REV 00 Attachment I - Page 15

Eu154 1.655E+00 1.106E+00 4.940E-01 9.855E-02 1.752E-03
 Eu155 4.246E-02 2.111E-02 5.217E-03 3.187E-04 2.940E-07
 RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE
 CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): Summary of all isotopes UNITS: Grams
 ISOTOPE 15YR 20YR 30YR 50YR 100YR
 Activation Products
 5.147E-01 5.147E-01 5.147E-01 5.147E-01 5.147E-01

Actinides and daughters
 3.168E+04 3.168E+04 3.168E+04 3.168E+04 3.168E+04

Fission Products
 2.580E+03 2.580E+03 2.580E+03 2.580E+03 2.580E+03

Total of all Groups
 3.426E+04 3.426E+04 3.426E+04 3.426E+04 3.426E+04

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE
 CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): Summary of all isotopes UNITS: Total curies
 ISOTOPE 15YR 20YR 30YR 50YR 100YR
 Activation Products
 2.630E+01 1.482E+01 5.683E+00 2.303E+00 1.426E+00

Actinides and daughters
 2.251E+03 2.021E+03 1.673E+03 1.247E+03 7.697E+02

Fission Products
 1.261E+05 1.118E+05 8.831E+04 5.524E+04 1.716E+04

Total of all Groups
 1.284E+05 1.138E+05 8.999E+04 5.649E+04 1.793E+04

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE
 CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): Summary of all isotopes UNITS: Alpha curies
 ISOTOPE 15YR 20YR 30YR 50YR 100YR
 Activation Products

Actinides and daughters
 1.440E+03 1.384E+03 1.279E+03 1.096E+03 7.561E+02

Fission Products

Total of all Groups
 1.440E+03 1.384E+03 1.279E+03 1.096E+03 7.561E+02

RADIONUCLIDE CONTENT PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant MAXIMUM RADIOACTIVITY (ONE
 CASE)

WASTE TYPE: Immobilized (in canisters)
 ISOTOPE(S): Summary of all isotopes UNITS: Total watts
 ISOTOPE 15YR 20YR 30YR 50YR 100YR
 Activation Products
 3.645E-01 1.889E-01 5.088E-02 3.854E-03 1.472E-04

Actinides and daughters
 4.781E+01 4.593E+01 4.242E+01 3.631E+01 2.502E+01

Fission Products

3.693E+02	3.278E+02	2.587E+02	1.614E+02	4.979E+01
-----------	-----------	-----------	-----------	-----------

Total of all Groups

4.175E+02	3.739E+02	3.012E+02	1.977E+02	7.481E+01
-----------	-----------	-----------	-----------	-----------

PHOTON SPECTRUM PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant
CASE)

MAXIMUM RADIOACTIVITY (ONE

		WASTE TYPE: Immobilized (in canisters)				
ISOTOPES:	Activation products	UNITS: Photons/sec				
EMEAN	15YR	20YR	30YR	50YR	100YR	
1.000E-02	4.685E+10	2.451E+10	6.925E+09	8.816E+08	2.873E+08	
2.500E-02	8.037E+09	4.178E+09	1.142E+09	1.056E+08	1.758E+07	
3.750E-02	4.577E+09	2.374E+09	6.414E+08	5.093E+07	3.604E+06	
5.750E-02	5.156E+09	2.671E+09	7.174E+08	5.215E+07	4.298E+05	
8.500E-02	2.027E+09	1.050E+09	2.819E+08	2.030E+07	2.817E+04	
1.250E-01	7.785E+08	4.033E+08	1.082E+08	7.797E+06	1.082E+04	
2.250E-01	2.560E+08	1.326E+08	3.560E+07	2.564E+06	3.558E+03	
3.750E-01	7.182E+07	3.721E+07	9.986E+06	7.193E+05	9.983E+02	
5.750E-01	4.124E+06	2.137E+06	5.734E+05	4.130E+04	5.732E+01	
8.500E-01	6.527E+07	3.381E+07	9.075E+06	6.537E+05	9.072E+02	
1.250E+00	1.748E+12	9.053E+11	2.430E+11	1.750E+10	2.429E+07	
1.750E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
2.250E+00	9.262E+06	4.798E+06	1.288E+06	9.276E+04	1.287E+02	
2.750E+00	2.866E+04	1.485E+04	3.985E+03	2.870E+02	3.983E-01	
3.500E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
5.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
7.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	
9.500E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	

PHOTON SPECTRUM PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant
CASE)

MAXIMUM RADIOACTIVITY (ONE

		WASTE TYPE: Immobilized (in canisters)				
ISOTOPES:	Actinides and daughters	UNITS: Photons/sec				
EMEAN	15YR	20YR	30YR	50YR	100YR	
1.000E-02	8.402E+12	8.090E+12	7.499E+12	6.452E+12	4.479E+12	
2.500E-02	3.664E+10	4.173E+10	4.858E+10	5.449E+10	5.433E+10	
3.750E-02	2.581E+10	2.526E+10	2.403E+10	2.145E+10	1.582E+10	
5.750E-02	5.370E+11	6.118E+11	7.127E+11	7.997E+11	7.975E+11	
8.500E-02	5.415E+09	5.262E+09	4.955E+09	4.381E+09	3.245E+09	
1.250E-01	8.827E+08	8.739E+08	8.567E+08	8.258E+08	7.647E+08	
2.250E-01	1.058E+09	9.913E+08	8.744E+08	7.089E+08	4.800E+08	
3.750E-01	2.341E+08	2.347E+08	2.352E+08	2.364E+08	2.416E+08	
5.750E-01	2.487E+08	2.432E+08	2.257E+08	1.915E+08	1.264E+08	
8.500E-01	1.515E+08	1.456E+08	1.321E+08	1.090E+08	6.999E+07	
1.250E+00	1.595E+07	1.471E+07	1.258E+07	9.725E+06	6.404E+06	
1.750E+00	2.334E+07	2.225E+07	1.983E+07	1.589E+07	9.645E+06	
2.250E+00	1.719E+06	1.432E+06	9.975E+05	4.966E+05	1.210E+05	
2.750E+00	2.026E+08	1.964E+08	1.794E+08	1.480E+08	9.124E+07	
3.500E+00	8.935E+05	7.435E+05	5.169E+05	2.553E+05	5.630E+04	
5.000E+00	3.812E+05	3.170E+05	2.201E+05	1.084E+05	2.347E+04	
7.000E+00	4.382E+04	3.643E+04	2.526E+04	1.239E+04	2.631E+03	
9.500E+00	5.026E+03	4.177E+03	2.895E+03	1.417E+03	2.975E+02	

PHOTON SPECTRUM PER CANISTER VS. DECAY TIME

SITE: Savannah River Plant
CASE)

MAXIMUM RADIOACTIVITY (ONE

		WASTE TYPE: Immobilized (in canisters)			
ISOTOPES:	Fission products	UNITS: Photons/sec			
EMEAN	15YR	20YR	30YR	50YR	100YR
1.000E-02	9.389E+14	8.332E+14	6.569E+14	4.086E+14	1.249E+14
2.500E-02	1.949E+14	1.727E+14	1.360E+14	8.462E+13	2.585E+13
3.750E-02	1.985E+14	1.759E+14	1.385E+14	8.628E+13	2.661E+13
5.750E-02	1.809E+14	1.604E+14	1.264E+14	7.855E+13	2.397E+13
8.500E-02	1.084E+14	9.593E+13	7.545E+13	4.687E+13	1.430E+13
1.250E-01	7.258E+13	6.369E+13	4.948E+13	3.039E+13	9.215E+12
2.250E-01	9.216E+13	8.168E+13	6.425E+13	3.986E+13	1.213E+13
3.750E-01	3.984E+13	3.519E+13	2.767E+13	1.718E+13	5.238E+12

CDB Output 2/21/95 BBAC00000-01717-0200-00001 REV 00 Attachment I - Page 18

5.750E-01	1.128E+15	1.005E+15	7.970E+14	5.019E+14	1.580E+14
8.500E-01	9.737E+12	7.878E+12	5.453E+12	2.975E+12	8.501E+11
1.250E+00	5.737E+12	4.295E+12	2.557E+12	1.131E+12	2.816E+11
1.750E+00	2.717E+11	2.174E+11	1.467E+11	7.750E+10	2.172E+10
2.250E+00	2.648E+07	1.619E+07	1.262E+07	7.840E+06	2.385E+06
2.750E+00	5.975E+05	1.911E+04	2.066E+01	1.299E-04	1.079E-04
3.500E+00	7.758E+04	2.492E+03	2.699E+00	8.235E-05	7.947E-05
5.000E+00	2.364E-05	2.366E-05	2.366E-05	2.366E-05	2.366E-05
7.000E+00	1.534E-06	1.535E-06	1.535E-06	1.535E-06	1.535E-06
9.500E+00	9.700E-08	9.706E-08	9.708E-08	9.708E-08	9.708E-08

PHOTON SPECTRUM PER CANISTER VS. DECAY TIME
 SITE: Savannah River Plant
 CASE)

MAXIMUM RADIOACTIVITY (ONE

ISOTOPES:	WASTE TYPE: Immobilized (in canisters)				
	Total isotopes				
E MEAN	15YR	20YR	30YR	50YR	100YR
1.000E-02	9.473E+14	8.413E+14	6.644E+14	4.151E+14	1.294E+14
2.500E-02	1.949E+14	1.727E+14	1.360E+14	8.467E+13	2.590E+13
3.750E-02	1.985E+14	1.759E+14	1.385E+14	8.630E+13	2.663E+13
5.750E-02	1.814E+14	1.610E+14	1.271E+14	7.935E+13	2.477E+13
8.500E-02	1.084E+14	9.594E+13	7.546E+13	4.687E+13	1.430E+13
1.250E-01	7.258E+13	6.369E+13	4.948E+13	3.039E+13	9.216E+12
2.250E-01	9.216E+13	8.168E+13	6.425E+13	3.986E+13	1.213E+13
3.750E-01	3.984E+13	3.519E+13	2.767E+13	1.718E+13	5.238E+12
5.750E-01	1.128E+15	1.005E+15	7.970E+14	5.019E+14	1.580E+14
8.500E-01	9.737E+12	7.878E+12	5.453E+12	2.975E+12	8.502E+11
1.250E+00	7.485E+12	5.200E+12	2.800E+12	1.149E+12	2.816E+11
1.750E+00	2.717E+11	2.174E+11	1.467E+11	7.752E+10	2.173E+10
2.250E+00	3.746E+07	2.242E+07	1.491E+07	8.429E+06	2.506E+06
2.750E+00	2.032E+08	1.964E+08	1.794E+08	1.480E+08	9.124E+07
3.500E+00	9.711E+05	7.460E+05	5.169E+05	2.553E+05	5.630E+04
5.000E+00	3.812E+05	3.170E+05	2.201E+05	1.084E+05	2.347E+04
7.000E+00	4.382E+04	3.643E+04	2.526E+04	1.239E+04	2.631E+03
9.500E+00	5.026E+03	4.177E+03	2.895E+03	1.417E+03	2.975E+02

Calculated Integrated Heat Release per HLW canister
SITE: Savannah River Site

Decay Time after Immobilization years	Integrated Heat Release per Canister watt-years
0	0
1	667
2	1,273
5	2,941
10	5,423
15	7,634
20	9,612
30	12,973
50	17,892
100	24,227
200	28,134
300	29,275
350	29,582
500	30,155
1,000	31,045
1,050	31,135
2,000	31,986
5,000	33,863
10,000	36,278
20,000	39,889
50,000	46,570
100,000	53,243
500,000	83,682
1,000,000	100,052

DWPF / SRS

From Table 3.3.8 Attachment I

Component	wt %	fraction not O	wt% not O = wt% x fraction
Ag	0.05		0.05
Al ₂ O ₃	3.96	.15293	2.096
B ₂ O ₃	10.28	.3106	3.193
BaSO ₄	0.14	.5884 / .137A	8.288E-2 / 1.924E-2
Ca ₃ (PO ₄) ₂	0.07	.3876 / .11997	2.713E-2 / 1.398E-2
CaO	0.85	.17147	0.16075
CaSO ₄	0.08	.2944 / .2355	2.355E-2 / 1.887E-2
Cr ₂ O ₃	0.12	.6872	8.210E-2
Cs ₂ O	0.08	.9432	7.546E-2
CuO	0.19	.17989	1.518E-1
Fe ₂ O ₃	7.04	.7083 ^{dwf} / .112875 ^{dwf} .6794	4.986 ^{dwf} / .112875 ^{dwf} 4.924
FeO	3.12	.17723	2.425
K ₂ O	3.58	.8302	2.972
Li ₂ O	3.16	.4646	1.468
MgO	1.36	.6030	0.820
MnO	2.00	.7745	1.549
Na ₂ O	11.00	.7419	8.161
Na ₂ SO ₄	0.36	.15237 / .2257	1.165E-1 / 8.125E-2
NaCl	0.19	.13934 / .6066	7.475E-2 / 1.153E-1
NaF	0.07	.5475 / .4525	3.833E-2 / 3.168E-2
N ₂ O	0.93	.7858	7.308E-1
PbS	0.07	.8660 / .1340	6.062E-2 / 9.38E-3
SiO ₂	45.57	.4674	2.12994E1
TiO ₂	0.21	.9355 ^{dwf} / .112875 ^{dwf} 0.8788	1.965E-1 ^{dwf} / .112875 ^{dwf} 1.85E-1
Ti ₂ O ₃	0.99	.5795	5.935E-1
U ₃ O ₈	2.20	.8780	1.866
zeolite → SO ₂	1.67		
2H ₂ O → SO ₂	0.08	2.33 .4674	1.089
others → SO ₂	0.58		

SUM 55.125 55.051

wt% O = 100 - 55.125 = 44.875

wt% multiplied by 0.98165

from Information about DWPE/SRS HLW GLASS
 gross weight 1682 kg

Isotope	grams/container	wt fraction in glass
Rh103	1.5028E-15	—
Ag109	—	—
Sm149	0.742E1	$\div 1682 \rightarrow 4.41E-6$
Eu151	—	—
Eu153	—	—
Gd155	—	—
U-233	0.1636E-3	9.727E-11
U-234	0.5485E1	3.261E-6
U-235	0.7228E2	4.327E-5
U-236	0.1742E2	1.036E-5
U-238	0.3122E5	1.856E-2
Np-237	0.1263E2	7.509E-6
Pu-238	0.8667E2	5.153E-5
Pu-239	0.2076E3	1.2342E-4
Pu-240	0.3809E2	2.265E-5
Pu-241	0.1620E2	9.631E-6
Pu-242	0.3206E1	1.906E-6
Am-241	0.3210E1	1.908E-6
Am-242m	0.1488E-2	8.847E-10
Am-243	0.2902E-1	1.725E-8
Cm-245	0.3910E-4	2.325E-11
	<u>3.16907E4</u>	<u>1.8835E-2</u>
	$\div 1.682E6 \text{ gm}$	$1 - 1.8835E-2 = 0.981165$
		$\therefore 0.981165 \text{ glass wt fraction}$

Calculation of Pu-239 g/m³

$$A_{239} = \frac{207.6 \text{ g/m}^3}{159 (\text{m}^3)^2} = 3.52E-4 \text{ g/m}^3$$

$$= 0.352 \text{ g/l}$$

min aqueous solution is
 $\rightarrow 9 \text{ g/l}$

min mass 0.511g
 in aqueous solution
 from T1A-2016

consistency/crosscheck 1.884E-2

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 15:29:13

PROBID = 12/01/95 15:29:13

INP=DHLWG1 OUTP=DHLWG1.0

```

1-   DHLWG1-- DWPF GLASS INFINITE ARRAY FLOODED
2-   C      1      2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   2      2 -1.00 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   3      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   4      2 -1.00 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   5      1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   6      3 -7.9 1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  7      3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  8      2 -1.00 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  9      2 -1.00 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10      4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11      4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12      2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13      5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14      5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15      2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16      2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17      0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15*    PX -100.74
38-  C      16*    PX 100.74
39-  C      17*    PY -100.74
40-  C      18*    PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      M5      25055.50C -0.10 26000.55C -0.70      28000.50C -31.000
WARNING. MATERIAL 5 IS NOT USED IN THE PROBLEM.
60-      M4      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      M4      6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
WARNING. MATERIAL 4 IS NOT USED IN THE PROBLEM.
63-      M3      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      M3      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      M3      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3      6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      M3      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      M3      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2      1001.50C 2.0 8016.50C 1.0
71-      MT2     LWTR.01T
72-      M1      3006.50C -1.080-1 3007.55C -1.332 5010.50C -6.234-1 $ DHLW GLASS
73-      M1      5011.56C -2.509 8016.50C -4.4102+1 9019.50C -3.108-2
74-      M1      11023.50C -8.233 12000.50C -8.046-1 13027.50C -2.057
75-      M1      14000.50C -2.1967+1 16032.50C -1.263-1 19000.50C -2.916
76-      M1      20000.50C -6.458-1 22000.50C -5.823-1 25055.50C -1.520
77-      M1      26000.55C -7.211 28000.50C -7.170-1 15031.50C -1.372-2
78-      M1      24000.50C -8.055-2 29000.50C -1.489-1 47109.50C -4.906-2
79-      M1      56138.50C -8.083-2 82000.50C -5.948-2 17000.50C -1.131-1
80-      M1      90232.50C -1.811-1 62149.50C -4.411-4 92233.50C -9.727-9
81-      M1      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
82-      M1      92235.50C -1.734-2 92238.50C -3.674 94238.50C -5.153-3
83-      M1      94239.55C -1.234-2 94240.50C -2.265-3 94241.50C -9.631-4
84-      M1      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
85-      M1      95243.50C -1.725-6 96245.35C -2.325-9
86-      PRINT
87-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS      529
POINTS NOT IN ANY CELL          0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS            0
POINTS IN AMBIGUOUS CELLS       0
TOTAL POINTS REJECTED           0
POINTS REMAINING                 529
POINTS AFTER EXPANSION OR CONTRACTION 496
NOMINAL SOURCE SIZE             500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

```

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02
THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00
THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 9.992722E+01

```

MATERIAL
NUMBER COMPONENT NUCLIDE, ATOM FRACTION

3	6000, .00137	7014, .00390	14000, .01460	15031, .00079
	16032, .00051	24000, .19975	25055, .01990	26000, .66604
	28000, .09314			
2	1001, .66667	8016, .33333		
ASSOCIATED THERMAL S(A,B) DATA SETS:	LWTR.01T			
1	3006, .00373	3007, .03949	5010, .01295	5011, .04740
	8016, .57353	9019, .00034	11023, .07449	12000, .00689
	13027, .01586	14000, .16269	16032, .00082	19000, .01551
	20000, .00335	22000, .00253	25055, .00576	26000, .02686
	28000, .00254	15031, .00009	24000, .00032	29000, .00049
	47109, .00009	56138, .00012	82000, .00006	17000, .00066
	90232, .00016	62149, .00000	92233, .00000	92234, .00000
	92236, .00000	93237, .00000	92235, .00002	92238, .00321
	94238, .00000	94239, .00001	94240, .00000	94241, .00000
	94242, .00000	95241, .00000	95242, .00000	95243, .00000
	96245, .00000			

MATERIAL NUMBER	COMPONENT NUCLIDE, MASS FRACTION							
3	6000, .00030	7014, .00100	14000, .00750	15031, .00045				
	16032, .00030	24000, .19000	25055, .02000	26000, .68045				
	28000, .10000							
2	1001, .11191	8016, .88809						
1	3006, .00108	3007, .01333	5010, .00624	5011, .02511				
	8016, .44134	9019, .00031	11023, .08239	12000, .00805				
	13027, .02058	14000, .21983	16032, .00126	19000, .02918				
	20000, .00646	22000, .00583	25055, .01521	26000, .07216				
	28000, .00718	15031, .00014	24000, .00081	29000, .00149				
	47109, .00049	56138, .00081	82000, .00060	17000, .00113				
	90232, .00181	62149, .00000	92233, .00000	92234, .00000				
	92236, .00001	93237, .00001	92235, .00017	92238, .03677				
	94238, .00005	94239, .00012	94240, .00002	94241, .00001				
	94242, .00000	95241, .00000	95242, .00000	95243, .00000				
	96245, .00000							

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1 2	1.00309E-01	1.00000E+00	.00000E+00	2.51903E+06	2.51903E+06	0	
2 3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3 4	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4 5	8.25705E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5 6	8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6 7	8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7 8	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8 9	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
---------	------------	-----------------	----------------------------

1	1	.00000E+00	.00000E+00	INFINITE
2	2	.00000E+00	1.63839E+04	
3	3	.00000E+00	2.91864E+03	
4	4	.00000E+00	.00000E+00	INFINITE
5	5	.00000E+00	.00000E+00	INFINITE
6	6	.00000E+00	.00000E+00	INFINITE
7	7	.00000E+00	.00000E+00	INFINITE
8	8	.00000E+00	.00000E+00	INFINITE
9	9	.00000E+00	1.96800E+04	
10	10	.00000E+00	1.96800E+04	
11	11	.00000E+00	1.96800E+04	
12	12	.00000E+00	1.96800E+04	
13	13	.00000E+00	.00000E+00	NOT A BOUNDARY
14	14	.00000E+00	.00000E+00	INFINITE
15	19	.00000E+00	.00000E+00	NOT A BOUNDARY
16	20	.00000E+00	1.63839E+04	
17	21	.00000E+00	.00000E+00	NOT A BOUNDARY
18	22	.00000E+00	.00000E+00	NOT A BOUNDARY
19	23	.00000E+00	.00000E+00	NOT A BOUNDARY
20	24	.00000E+00	.00000E+00	NOT A BOUNDARY
21	25	.00000E+00	.00000E+00	NOT A BOUNDARY

1CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-01	1.00000E+00	2.51903E+06	2.51903E+06	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.25705E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00

TOTAL 2.52367E+06 2.55564E+06

1SURFACES

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2 REFL.	PZ	.0000000E+00
3	3	PZ	1.3713000E+02
4	4	PZ	1.3871750E+02
5	5	PX	-3.2000000E+01
6	6	PX	3.2000000E+01
7	7	PY	-3.2000000E+01
8	8	PY	3.2000000E+01
9	9 REFL.	PX	-6.3999900E+01
10	10 REFL.	PX	6.3999900E+01
11	11 REFL.	PY	-6.3999900E+01
12	12 REFL.	PY	6.3999900E+01
13	13	CZ	7.8450000E+01
14	14	CZ	3.0480000E+01
15	19	CZ	8.0450000E+01
16	20	PZ	1.5375000E+02
17	21	PZ	1.5625000E+02
18	22	CZ	8.5450000E+01
19	23	PZ	1.6250000E+02
20	24	PZ	1.7100000E+02

21 25 PZ 2.0148000E+02
 WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
 1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL	TMP 1
2	2.5300E-08
4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

10 WARNING MESSAGES SO FAR.
 1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE LENGTH

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY
3006.50C	6551	NJOY
3007.55C	11053	NJOY
5010.50C	9587	NJOY
6000.50C	16126	NJOY
7014.50C	22772	NJOY
8016.50C	23669	NJOY
13027.50C	22891	NJOY
24000.50C	89104	NJOY
26000.55C	84136	NJOY
28000.50C	82267	NJOY
29000.50C	22473	NJOY
56138.50C	2479	NJOY
82000.50C	28695	NJOY
92233.50C	14205	NJOY
92235.50C	44188	NJOY
92238.50C	66440	NJOY
94239.55C	67551	NJOY
94240.50C	42744	NJOY

(1301)	79/07/31.
(1303)	79/08/01.
(3007)	07/29/82
(1305)	79/09/10.
(1306)	79/07/31.
(1275)	79/09/08.
(1276)	05/14/81
(1313)	79/09/08.
(1324)	79/06/21.
(260)	10/21/82
(1328)	79/06/21.
(1329)	02/05/80
(1353)	79/06/21.
(1382)	03/10/82
(1393)	79/09/12.
(1395)	79/09/12.
(1398)	79/09/13.
(1399)	02/21/85
(1380)	79/09/13.

TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU

TABLES FROM FILE NEWXS2

5011.56C 28379

06/28/88

TABLES FROM FILE ENDF5P2

9019.50C	20657	NJOY	(1309)	79/06/22.
11023.50C	36270	NJOY	(1311)	79/06/21.
14000.50C	48275	NJOY	(1314)	79/06/21.
17000.50C	12269	NJOY	(1149)	79/10/29.

WARNING. NUBAR OF	92234.50C	MAY BE EITHER PROMPT OR TOTAL.		
92234.50C	76999	NJOY	(1394)	79/10/17.

WARNING. NUBAR OF	92236.50C	MAY BE EITHER PROMPT OR TOTAL.		
92236.50C	119238	NJOY	(1396)	79/08/30.

WARNING. NUBAR OF	94238.50C	MAY BE EITHER PROMPT OR TOTAL.		
94238.50C	16458	NJOY	(1338)	79/09/12.
94241.50C	22523	NJOY	(1381)	79/08/30.
94242.50C	43433	NJOY	(1342)	79/09/06.
		TOTAL NU		
		TOTAL NU		

TABLES FROM FILE ENDF5U2

12000.50C	39283	NJOY	(1312)	79/08/30.
15031.50C	2779	NJOY	(1315)	79/10/29.
16032.50C	2684	NJOY	(1316)	79/10/29.
19000.50C	9766	NJOY	(1150)	79/10/29.
20000.50C	26104	NJOY	(1320)	79/06/22.
22000.50C	25231	NJOY	(1322)	79/06/21.
25055.50C	60097	NJOY	(1325)	79/06/21.
62149.50C	11116	NJOY	(1319)	02/12/85
90232.50C	95614	NJOY	(1390)	07/10/80
		TOTAL NU		

WARNING. NUBAR OF	95241.50C	MAY BE EITHER PROMPT OR TOTAL.		
95241.50C	29300	NJOY	(1361)	79/08/29.

WARNING. NUBAR OF	95242.50C	MAY BE EITHER PROMPT OR TOTAL.		
95242.50C	5248	NJOY	(1369)	79/09/24.

WARNING. NUBAR OF	95243.50C	MAY BE EITHER PROMPT OR TOTAL.		
95243.50C	51474	NJOY	(1363)	79/08/30.

TABLES FROM FILE RMCCSA2

47109.50C	10147	NJOY	(1373)	11/01/85
93237.55C	29142	NJOY	(1337)	04/04/85
		TOTAL NU		

TABLES FROM FILE ENDL852

WARNING. NUBAR OF	96245.35C	MAY BE EITHER PROMPT OR TOTAL.		
96245.35C	15310	ZA=96245 ENDL-85 85/04/24 T=0K	(93)	86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T	10193	HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN	1001	0	010/22/85
TOTAL	1506073				

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
 1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL	66802
TALLIES	0

BANK 12403
CROSS SECTIONS 1506073
TOTAL 1585278

DUMP NO. 1 ON FILE RUNTPE NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

18 WARNING MESSAGES SO FAR.
1 STARTING MCRUN. FIELD LENGTH = 0 CPO = .07

PRINT TABLE 110

DHLWG1-- DWPf GLASS INFINITE ARRAY FLOODED

NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	2.141E+01	-1.891E+01	8.562E+01	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	1.008E+00	2.110E+00
2	1.260E+01	-1.361E+01	4.903E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	1.008E+00	3.194E+00
3	1.659E+01	-2.409E+01	2.531E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	1.008E+00	4.631E+00
4	2.189E+01	-1.330E+00	3.912E+01	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	1.008E+00	5.365E-01
5	8.805E+00	-7.845E-01	9.017E+01	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	1.008E+00	1.932E+00
6	-1.593E+01	-2.102E+01	8.684E+01	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	1.008E+00	2.588E-01
7	-1.075E+01	2.567E+01	9.463E+01	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	1.008E+00	1.184E+00
8	-1.146E+01	2.110E+01	9.739E+01	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	1.008E+00	5.901E-01
9	-1.942E+01	-1.830E+01	7.458E+01	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	1.008E+00	1.712E+00
10	-9.722E+00	-1.372E+00	7.623E+01	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	1.008E+00	2.387E+00
11	9.131E-01	1.108E-01	9.521E+01	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	1.008E+00	5.817E-01
12	-1.860E+01	-1.308E+01	9.728E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	1.008E+00	2.936E+00
13	-1.495E+01	-1.312E+01	9.543E+01	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	1.008E+00	1.320E+00
14	-2.128E+00	3.256E+00	8.796E+01	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	1.008E+00	3.710E+00
15	1.865E+01	-6.944E+00	3.903E+01	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	1.008E+00	2.505E+00
16	1.564E+01	-5.523E+00	3.852E+01	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	1.008E+00	8.285E-01
17	-1.669E+01	-2.842E+00	8.878E+01	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	1.008E+00	4.032E+00
18	-1.605E+01	1.409E+01	1.874E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	1.008E+00	2.152E-01
19	-2.316E+01	7.735E+00	2.471E+01	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	1.008E+00	7.017E-01
20	-2.761E+01	5.715E+00	2.721E+01	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	1.008E+00	7.060E-01
21	-2.638E+01	3.281E+00	3.582E+01	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	1.008E+00	4.954E-01
22	-2.536E+01	3.355E+00	3.565E+01	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	1.008E+00	1.611E+00
23	2.687E+01	-1.012E+01	1.196E+02	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	1.008E+00	4.864E+00
24	1.018E+01	-4.110E+00	9.771E+01	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	1.008E+00	4.915E+00
25	2.531E+00	1.101E+01	7.018E+01	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	1.008E+00	2.526E+00
26	1.862E+01	9.643E+00	8.125E+01	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	1.008E+00	5.621E+00
27	1.730E+01	3.054E+00	6.809E+01	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	1.008E+00	4.922E-01
28	-8.631E-01	-1.343E-01	9.171E+01	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	1.008E+00	2.357E+00
29	-1.223E+01	3.273E+00	4.562E+01	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	1.008E+00	2.912E+00
30	-1.307E+01	5.575E+00	4.534E+01	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	1.008E+00	3.157E+00
31	-2.309E+01	1.547E+01	1.189E+01	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	1.008E+00	3.629E-01
32	7.128E+00	1.434E+01	8.058E+01	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	1.008E+00	2.765E+00
33	9.109E+00	1.105E+01	7.425E+01	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	1.008E+00	8.075E-01
34	2.053E+01	-8.410E+00	4.386E+01	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	1.008E+00	3.875E+00
35	2.163E+01	-1.300E+01	4.408E+01	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	1.008E+00	3.954E+00
36	2.157E+01	-1.325E+01	4.437E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	1.008E+00	1.091E+00
37	2.350E+01	-1.762E+01	4.264E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	1.008E+00	2.564E+00
38	1.888E+01	-2.162E+01	3.832E+01	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	1.008E+00	2.354E+00
39	8.357E+00	8.021E+00	1.370E+02	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	1.008E+00	2.578E+00
40	1.125E+01	6.428E+00	9.606E+01	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	1.008E+00	1.377E+00
41	2.030E+01	1.588E+01	1.091E+02	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	1.008E+00	2.129E+00

42	1.801E+01	2.137E+01	4.794E+01	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	1.008E+00	3.711E+00
43	-1.933E+00	1.538E+01	2.153E+01	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	1.008E+00	7.345E-01
44	-9.222E+00	-2.238E+00	8.346E+01	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	1.008E+00	4.079E+00
45	1.748E+01	-6.881E+00	3.903E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	1.008E+00	4.964E+00
46	1.605E+01	-4.284E+00	4.268E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	1.008E+00	1.873E+00
47	-1.595E+01	1.758E+01	1.068E+02	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	1.008E+00	6.829E-01
48	1.941E+01	-8.085E+00	2.285E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	1.008E+00	1.701E+00
49	1.191E+01	6.372E+00	2.414E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	1.008E+00	3.658E+00
50	-1.549E+01	4.717E+00	2.828E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	1.008E+00	1.725E+00

CYCLE 1 K(COLLISION) .006524 REMOVAL LIFETIME(ABS) 4.7710E+03 SOURCE POINTS GENERATED 124

CYCLE 2 K(COLLISION) .005816 REMOVAL LIFETIME(ABS) 6.2381E+03 SOURCE POINTS GENERATED 422

CYCLE 3 K(COLLISION) .006554 REMOVAL LIFETIME(ABS) 5.8540E+03 SOURCE POINTS GENERATED 576

CYCLE 4 K(COLLISION) .006729 REMOVAL LIFETIME(ABS) 5.5808E+03 SOURCE POINTS GENERATED 515

CYCLE 5 K(COLLISION) .007433 REMOVAL LIFETIME(ABS) 5.7122E+03 SOURCE POINTS GENERATED 580

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .007194 REMOVAL LIFETIME(ABS) 4.9959E+03 SOURCE POINTS GENERATED 485

ESTIMATOR	CYCLE	7	AVE OF	2 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007584		.007389	.0264	K(COL/ABS)	.000000	.000000	.0000
K(ABSORPTION)	.013804		.011400	.2109	K(ABS/TK LN)	.000000	.000000	.0000
K(TRK LENGTH)	.007011		.007242	.0320	K(TK LN/COL)	.000000	.000000	.0000
REM LIFE(COL)	6.5030E+03		5.7274E+03	.1354				
REM LIFE(ABS)	6.4062E+03		5.7010E+03	.1237	LIFE(COL/ABS)	.0000E+00	.0000E+00	.0000
SOURCE POINTS GENERATED		534						

ESTIMATOR	CYCLE	8	AVE OF	3 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007284		.007354	.0160	K(COL/ABS)	.009028	.007083	.9864
K(ABSORPTION)	.009305		.010701	.1452	K(ABS/TK LN)	.008981	.007523	-.9447
K(TRK LENGTH)	.007296		.007260	.0186	K(TK LN/COL)	.007307	.007310	-.9858
REM LIFE(COL)	5.9072E+03		5.7873E+03	.0781				
REM LIFE(ABS)	5.9079E+03		5.7700E+03	.0716	LIFE(COL/ABS)	5.7787E+03	5.6105E+03	.9994
SOURCE POINTS GENERATED		463						

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 8

ESTIMATOR	CYCLE	9	AVE OF	4 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006900		.007240	.0194	K(COL/ABS)	.008965	.007003	.5928
K(ABSORPTION)	.010652		.010689	.1028	K(ABS/TK LN)	.008915	.007441	-.5777
K(TRK LENGTH)	.006779		.007140	.0215	K(TK LN/COL)	.007190	.007196	.2696
REM LIFE(COL)	6.2842E+03		5.9116E+03	.0580	K(COL/ABS/TK LN)	.008356	.007396	.1652
REM LIFE(ABS)	6.2502E+03		5.8900E+03	.0536	LIFE(COL/ABS)	5.9008E+03	5.6840E+03	.9993
SOURCE POINTS GENERATED		464						

ESTIMATOR	CYCLE	10	AVE OF	5 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006655		.007123	.0225	K(COL/ABS)	.008531	.006802	.7869
K(ABSORPTION)	.006940		.009939	.1141	K(ABS/TK LN)	.008488	.007049	.1074
K(TRK LENGTH)	.006622		.007036	.0224	K(TK LN/COL)	.007080	.007078	.6191
REM LIFE(COL)	6.6813E+03		6.0655E+03	.0506	K(COL/ABS/TK LN)	.008033	.006700	.0483
REM LIFE(ABS)	6.7357E+03		6.0592E+03	.0491	LIFE(COL/ABS)	6.0623E+03	6.0382E+03	.9963
SOURCE POINTS GENERATED		497						

ESTIMATOR	CYCLE	11	AVE OF	6 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006943		.007093	.0189	K(COL/ABS)	.008248	.006864	.7756

K(ABSORPTION)	.006715	.009402	.1139	K(ABS/TK LN)	.008230	.0656	.007091	.0220	.0066
K(TRK LENGTH)	.007169	.007058	.0185	K(TK LN/COL)	.007076	.0165	.007075	.0185	.5569
REM LIFE(COL)	6.3016E+03	6.1049E+03	.0416	K(COL/ABS/TK LN)	.007851	.0507	.006771	.0348	
REM LIFE(ABS)	6.3129E+03	6.1015E+03	.0404	LIFE(COL/ABS)	6.1032E+03	.0409	6.0912E+03	.0435	.9963
SOURCE POINTS GENERATED 518									

ESTIMATOR	CYCLE	12	AVE OF	7	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007152		.007102	.0160	K(COL/ABS)	.008512	.0662	.006888	.0151
K(ABSORPTION)	.013052		.009923	.1053	K(ABS/TK LN)	.008498	.0623	.007084	.0187
K(TRK LENGTH)	.007161		.007073	.0158	K(TK LN/COL)	.007087	.0140	.007087	.0154
REM LIFE(COL)	4.9208E+03		5.9357E+03	.0460	K(COL/ABS/TK LN)	.008033	.0476	.006903	.0280
REM LIFE(ABS)	4.8907E+03		5.9285E+03	.0457	LIFE(COL/ABS)	5.9321E+03	.0458	5.9201E+03	.0500
SOURCE POINTS	GENERATED	500							.9974

CYCLE = 12

ESTIMATOR	CYCLE	13	AVE OF	8 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.007838		.007194 .0187	K(COL/ABS)	.008518 .0573	.007059 .0211	.4533
K(ABSORPTION)		.009278		.009843 .0923	K(ABS/TK LN)	.008488 .0540	.007170 .0183	.0136
K(TRK LENGTH)		.007553		.007133 .0159	K(TK LN/COL)	.007163 .0160	.007146 .0169	.7080
REM LIFE(COL)	5.7525E+03		5.9128E+03	.0402	K(COL/ABS/TK LN)	.008056 .0412	.007142 .0300	
REM LIFE(ABS)	5.7789E+03		5.9098E+03	.0398	LIFE(COL/ABS)	5.9113E+03 .0400	5.9057E+03 .0428	.9973
SOURCE POINTS	GENERATED	527						

ESTIMATOR	CYCLE	14	AVE OF	9 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.006286		.007093 .0220	K(COL/ABS)	.008451 .0516	.006987 .0254	.3731
K(ABSORPTION)		.009533		.009808 .0817	K(ABS/TK LN)	.008425 .0486	.007101 .0219	.0390
K(TRK LENGTH)		.006307		.007041 .0193	K(TK LN/COL)	.007067 .0198	.007047 .0206	.8351
REM LIFE(COL)	5.4631E+03		5.8628E+03	.0367	K(COL/ABS/TK LN)	.007981 .0379	.007106 .0376	
REM LIFE(ABS)	5.4740E+03		5.8614E+03	.0363	LIFE(COL/ABS)	5.8621E+03 .0365	5.8589E+03 .0386	.9975
SOURCE POINTS	GENERATED	400						

ESTIMATOR	CYCLE	15	AVE OF	10 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008058		.007189	.0236	K(COL/ABS)	.008461 .0461	.007183 .0268	.2459
K(ABSORPTION)	.009058		.009733	.0741	K(ABS/TK LN)	.008439 .0434	.007285 .0240	-.0381
K(TRK LENGTH)	.008081		.007145	.0224	K(TK LN/COL)	.007167 .0224	.007155 .0236	.8918
REM LIFE(COL)	5.4870E+03		5.8253E+03	.0337	K(COL/ABS/TK LN)	.008023 .0341	.007304 .0402	
REM LIFE(ABS)	5.4822E+03		5.8235E+03	.0334	LIFE(COL/ABS)	5.8244E+03 .0335	5.8206E+03 .0352	.9975
SOURCE POINTS GENERATED	648							

ESTIMATOR	CYCLE	16	AVE OF	11	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.006558		.007132	.0230	K(COL/ABS)	.008257 .0494	.007049 .0253	.3690
K(ABSORPTION)		.005862		.009381	.0790	K(ABS/TK LN)	.008236 .0472	.007124 .0238	.1383
K(TRK LENGTH)		.006537		.007090	.0218	K(TK LN/COL)	.007111 .0219	.007099 .0229	.9053
REM LIFE(COL)	5.2087E+03		5.7692E+03		.0323	K(COL/ABS/TK LN)	.007868 .0371	.007109 .0359	
REM LIFE(ABS)	5.1967E+03		5.7665E+03		.0320	LIFE(COL/ABS)	5.7678E+03 .0321	5.7631E+03 .0337	.9977
SOURCE POINTS	GENERATED	449							

CYCLE = 16

ESTIMATOR	CYCLE	17	AVE OF	12 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006504		.007080	.0224	K(COL/ABS)	.008056 .0525	.006959 .0236	.4608
K(ABSORPTION)	.005205		.009033	.0842	K(ABS/TK LN)	.008037 .0506	.007013 .0229	.2644
K(TRK LENGTH)	.006510		.007041	.0212	K(TK LN/COL)	.007061 .0213	.007048 .0222	.9154
REM LIFE(COL)	5.5236E+03		5.7487E+03	.0298	K(COL/ABS/TK LN)	.007718 .0396	.006992 .0311	
REM LIFE(ABS)	5.5480E+03		5.7483E+03	.0295	LIFE(COL/ABS)	5.7485E+03 .0296	5.7476E+03 .0308	.9977
SOURCE POINTS	GENERATED	507						

ESTIMATOR	CYCLE	18	AVE OF	13 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.007578	.007118	.0212	K(COL/ABS)	.008075 .0482	.007007 .0223	.4452

K(ABSORPTION)	.009017	.009032	.0775	K(ABS/TK LN)	.008061	.0465	.007072	.0221	.2488
K(TRK LENGTH)	.007669	.007090	.0206	K(TK LN/COL)	.007104	.0204	.007098	.0213	.9195
REM LIFE(COL)	5.7588E+03	5.7495E+03	.0274	K(COL/ABS/TK LN)	.007747	.0365	.007038	.0302	
REM LIFE(ABS)	5.7479E+03	5.7482E+03	.0271	LIFE(COL/ABS)	5.7489E+03	.0273	5.7463E+03	.0282	.9977
SOURCE POINTS GENERATED	578								

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006711		.007089		.0201	K(COL/ABS)	.007990	.0464	.006972 .0209 .4694
K(ABSORPTION)	.007048		.008890		.0746	K(ABS/TK LN)	.007977	.0447	.007035 .0207 .2784
K(TRK LENGTH)	.006734		.007064		.0194	K(TK LN/COL)	.007077	.0194	.007071 .0201 .9224
REM LIFE(COL)	6.5458E+03		5.8064E+03		.0270	K(COL/ABS/TK LN)	.007681	.0351	.007001 .0279
REM LIFE(ABS)	6.4437E+03		5.7979E+03		.0263	LIFE(COL/ABS)	5.8021E+03	.0266	5.7695E+03 .0266 .9971
SOURCE POINTS GENERATED	458								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 19

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007229		.007098		.0187	K(COL/ABS)	.007895	.0453	.007016 .0194 .4241
K(ABSORPTION)	.005901		.008691		.0746	K(ABS/TK LN)	.007878	.0440	.007042 .0191 .2633
K(TRK LENGTH)	.007074		.007065		.0181	K(TK LN/COL)	.007082	.0180	.007073 .0187 .9205
REM LIFE(COL)	6.1444E+03		5.8289E+03		.0253	K(COL/ABS/TK LN)	.007618	.0340	.007029 .0238
REM LIFE(ABS)	6.1614E+03		5.8221E+03		.0248	LIFE(COL/ABS)	5.8255E+03	.0250	5.8020E+03 .0251 .9971
SOURCE POINTS GENERATED	554								

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007594		.007129		.0180	K(COL/ABS)	.007920	.0424	.007049 .0186 .4191
K(ABSORPTION)	.009007		.008711		.0697	K(ABS/TK LN)	.007903	.0412	.007073 .0183 .2634
K(TRK LENGTH)	.007533		.007094		.0173	K(TK LN/COL)	.007112	.0173	.007102 .0179 .9251
REM LIFE(COL)	5.6011E+03		5.8147E+03		.0238	K(COL/ABS/TK LN)	.007645	.0319	.007062 .0229
REM LIFE(ABS)	5.5791E+03		5.8069E+03		.0234	LIFE(COL/ABS)	5.8108E+03	.0236	5.7851E+03 .0237 .9971
SOURCE POINTS GENERATED	505								

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007196		.007133		.0169	K(COL/ABS)	.007891	.0401	.007059 .0175 .4130
K(ABSORPTION)	.007669		.008650		.0663	K(ABS/TK LN)	.007872	.0390	.007074 .0171 .2618
K(TRK LENGTH)	.007096		.007094		.0163	K(TK LN/COL)	.007114	.0163	.007103 .0168 .9246
REM LIFE(COL)	6.7537E+03		5.8699E+03		.0241	K(COL/ABS/TK LN)	.007626	.0301	.007066 .0212
REM LIFE(ABS)	6.6908E+03		5.8589E+03		.0235	LIFE(COL/ABS)	5.8644E+03	.0238	5.8147E+03 .0233 .9974
SOURCE POINTS GENERATED	473								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 22

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006421		.007094		.0170	K(COL/ABS)	.007726	.0441	.007004 .0168 .4992
K(ABSORPTION)	.003423		.008359		.0734	K(ABS/TK LN)	.007707	.0432	.007003 .0169 .3783
K(TRK LENGTH)	.006382		.007055		.0164	K(TK LN/COL)	.007074	.0164	.007064 .0169 .9330
REM LIFE(COL)	7.0224E+03		5.9339E+03		.0249	K(COL/ABS/TK LN)	.007503	.0332	.007002 .0193
REM LIFE(ABS)	7.0367E+03		5.9244E+03		.0245	LIFE(COL/ABS)	5.9292E+03	.0247	5.8950E+03 .0249 .9977
SOURCE POINTS GENERATED	453								

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006893		.007083		.0161	K(COL/ABS)	.007728	.0417	.006993 .0160 .4947
K(ABSORPTION)	.008628		.008373		.0694	K(ABS/TK LN)	.007708	.0409	.006991 .0161 .3732
K(TRK LENGTH)	.006822		.007043		.0157	K(TK LN/COL)	.007063	.0156	.007052 .0161 .9335
REM LIFE(COL)	5.6267E+03		5.9178E+03		.0238	K(COL/ABS/TK LN)	.007500	.0314	.006990 .0186
REM LIFE(ABS)	5.6402E+03		5.9094E+03		.0234	LIFE(COL/ABS)	5.9136E+03	.0236	5.8825E+03 .0236 .9977
SOURCE POINTS GENERATED	539								

ESTIMATOR	CYCLE	25	AVE OF	20	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.006590		.007058		.0157	K(COL/ABS)	.007756	.0396	.006979 .0159 .4456

K(ABSORPTION)	.009971	.008453	.0659	K(ABS/TK LN)	.007735	.0388	.006977	.0159	.3224
K(TRK LENGTH)	.006508	.007016	.0154	K(TK LN/COL)	.007037	.0153	.007028	.0157	.9368
REM LIFE(COL)	5.7110E+03	5.9074E+03	.0227	K(COL/ABS/TK LN)	.007509	.0298	.006976	.0188	
REM LIFE(ABS)	5.6535E+03	5.8966E+03	.0224	LIFE(COL/ABS)	5.9020E+03	.0225	5.8679E+03	.0227	.9976
SOURCE POINTS GENERATED	492								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP
1 PROBLEM SUMMARY

CYCLE = 25

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

DHLWG1-- DWPf GLASS INFINITE ARRAY FLOODED

12/01/95 15:38:20
PROBID = 12/01/95 15:29:13

NEUTRON CREATION	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY	NEUTRON LOSS	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY
SOURCE	12265	1.0192E+00	2.0235E+00	ESCAPE	26	1.2340E-03	6.7485E-04
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	1.0538E-01	2.2853E-04	WEIGHT CUTOFF	12241	1.0146E-01	1.8918E-04
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	3.1779E-07	DOWNSCATTERING	0	0.	1.9161E+00
(N,XN)	4	2.6054E-04	2.9512E-04	CAPTURE	0	1.0189E+00	9.9789E-02
FISSION	0	0.	0.	LOSS TO (N,XN)	2	1.3027E-04	1.4474E-03
TOTAL	12269	1.1248E+00	2.0240E+00	LOSS TO FISSION	0	3.0580E-03	5.7987E-03
				TOTAL	12269	1.1248E+00	2.0240E+00

NUMBER OF NEUTRONS BANKED 2
NEUTRON TRACKS PER SOURCE PARTICLE 1.0003E+00
NEUTRON COLLISIONS PER SOURCE PARTICLE 1.3519E+02
TOTAL NEUTRON COLLISIONS 1658113
NET MULTIPLICATION 1.0001E+00 .0029

AVERAGE LIFETIME, SHAKES
ESCAPE 1.4114E+04
CAPTURE 5.8104E+03
CAPTURE OR ESCAPE 5.8204E+03
ANY TERMINATION 7.1043E+03

CUTOFFS
TCO 1.0000E+34
ECO .0000E+00
WC1 -5.0000E-01
WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 8.07 MINUTES
COMPUTER TIME IN MCRUN 8.00 MINUTES
SOURCE PARTICLES PER MINUTE 1.5331E+03
RANDOM NUMBERS GENERATED 13778834

MAXIMUM NUMBER EVER IN BANK 1
BANK OVERFLOWS TO BACKUP FILE 0
FIELD LENGTH 0
MOST RANDOM NUMBERS USED WAS 8594 IN HISTORY 11130

RANGE OF SAMPLED SOURCE WEIGHTS = 7.7160E-01 TO 4.0323E+00
1 NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

CELL	TRACKS ENTERING	POPULATION	COLLISIONS	COLLISIONS * WEIGHT (PER HISTORY)	NUMBER WEIGHTED ENERGY	FLUX WEIGHTED ENERGY	AVERAGE TRACK WEIGHT (RELATIVE)	AVERAGE TRACK MFP (CM)
1	2	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	23226	12267	2.8946E+01	6.3421E-02	6.0395E-01	8.8770E-01	3.7003E+00
5	6	27273	9088	2.0930E+00	6.4848E-04	4.7998E-01	8.1959E-01	2.4562E+00
6	7	820	339	9.5937E-02	7.9486E-04	4.3070E-01	8.0468E-01	2.4711E+00
7	8	28051	8590	1159897	5.5447E-05	1.8192E-01	6.2842E-01	7.5716E-01
8	9	641	309	54009	2.3967E+00	1.5526E-01	6.0338E-01	6.8816E-01

TOTAL 80011 30593 1658113 8.6614E+01

1 NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-1.2340E-03	-1.2340E-03
3	4	.0000E+00	.0000E+00	.0000E+00	-6.7185E-01	-6.7185E-01
4	5	7.0609E-01	1.0192E+00	.0000E+00	-1.0810E+00	6.4423E-01
5	6	1.8430E+00	.0000E+00	.0000E+00	-1.7470E+00	9.6044E-02
6	7	5.4184E-02	.0000E+00	.0000E+00	-5.0385E-02	3.7984E-03
7	8	1.7309E+00	.0000E+00	.0000E+00	-8.0202E-01	9.2886E-01
8	9	3.9784E-02	.0000E+00	.0000E+00	-2.1706E-02	1.8079E-02
TOTAL 4.3739E+00 1.0192E+00 .0000E+00 .0000E+00 -4.3752E+00 1.0179E+00						
1NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS						

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	2.4573E-03	.0000E+00	.0000E+00	.0000E+00	2.4573E-03
5	6	.0000E+00	.0000E+00	-1.7758E-04	.0000E+00	.0000E+00	.0000E+00	-1.7758E-04
6	7	.0000E+00	.0000E+00	-1.3728E-04	.0000E+00	.0000E+00	.0000E+00	-1.3728E-04
7	8	.0000E+00	.0000E+00	1.7005E-03	.0000E+00	.0000E+00	.0000E+00	1.7005E-03
8	9	.0000E+00	.0000E+00	7.6521E-05	.0000E+00	.0000E+00	.0000E+00	7.6521E-05
TOTAL .0000E+00 .0000E+00 3.9194E-03 .0000E+00 .0000E+00 .0000E+00 .0000E+00 3.9194E-03								
1NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS								

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	2.6054E-04	.0000E+00	-6.4376E-01	-1.3027E-04	-3.0580E-03
5	6	.0000E+00	.0000E+00	-9.5867E-02	.0000E+00	-9.5867E-02
6	7	.0000E+00	.0000E+00	-3.6611E-03	.0000E+00	-3.6611E-03
7	8	.0000E+00	.0000E+00	-2.6334E-01	.0000E+00	-2.6334E-01
8	9	.0000E+00	.0000E+00	-1.2293E-02	.0000E+00	-1.2293E-02
TOTAL 2.6054E-04 .0000E+00 -1.0189E+00 -1.3027E-04 -3.0580E-03 -1.0218E+00						
1NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE						

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOSS TO FISSION	WEIGHT GAIN BY (N,XN)
1	2	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
3	4	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
4	5	3006.50C	3.7347E-03	1381	9.1460E-02	4.8524E-02	.0000E+00
		3007.55C	3.9491E-02	6146	4.5744E-01	1.7497E-05	.0000E+00
		5010.50C	1.2950E-02	13160	8.0626E-01	5.5123E-01	.0000E+00
		5011.56C	4.7405E-02	20295	1.4291E+00	1.1522E-05	.0000E+00
		8016.50C	5.7353E-01	216589	1.5593E+01	5.9437E-03	.0000E+00
		9019.50C	3.4029E-04	198	1.4429E-02	1.5673E-05	.0000E+00
		11023.50C	7.4491E-02	46461	3.1389E+00	1.6765E-03	.0000E+00
		12000.50C	6.8859E-03	3780	2.7647E-01	7.4196E-05	.0000E+00

		13027.50C	1.5858E-02	6226	4.6615E-01	4.2519E-04	.0000E+00	.0000E+00
		14000.50C	1.6269E-01	48441	3.6073E+00	4.3749E-03	.0000E+00	4.2473E-05
		16032.50C	8.2170E-04	206	1.5759E-02	2.2447E-04	.0000E+00	.0000E+00
		19000.50C	1.5513E-02	4070	2.9552E-01	4.2205E-03	.0000E+00	.0000E+00
		20000.50C	3.3518E-03	855	6.3719E-02	9.6782E-04	.0000E+00	.0000E+00
		22000.50C	2.5298E-03	3430	2.2969E-01	3.4331E-04	.0000E+00	.0000E+00
		25055.50C	5.7551E-03	11855	7.2985E-01	4.7796E-03	.0000E+00	.0000E+00
		26000.55C	2.6859E-02	16095	1.1132E+00	3.5757E-03	.0000E+00	.0000E+00
		28000.50C	2.5413E-03	3149	2.1377E-01	7.3901E-04	.0000E+00	.0000E+00
		15031.50C	9.2138E-05	33	2.3698E-03	5.9198E-06	.0000E+00	.0000E+00
		24000.50C	3.2224E-04	218	1.5154E-02	5.0071E-05	.0000E+00	.0000E+00
		29000.50C	4.8740E-04	383	2.6120E-02	3.0538E-04	.0000E+00	.0000E+00
		47109.50C	9.3705E-05	109	7.5416E-03	1.2106E-03	.0000E+00	8.7798E-05
		56138.50C	1.2192E-04	75	5.5845E-03	6.1602E-06	.0000E+00	.0000E+00
		82000.50C	5.9707E-05	63	4.3504E-03	2.1351E-06	.0000E+00	.0000E+00
		17000.50C	6.6358E-04	168	1.1698E-02	1.1999E-04	.0000E+00	.0000E+00
		90232.50C	1.6235E-04	217	1.5379E-02	6.8070E-04	2.1091E-05	.0000E+00
		62149.50C	6.1613E-07	1	3.4322E-05	3.4109E-05	.0000E+00	.0000E+00
		92233.50C	8.6822E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		92234.50C	2.8983E-07	0	1.2803E-06	.0000E+00	.0000E+00	.0000E+00
		92236.50C	9.1294E-07	2	1.6086E-04	5.8697E-06	6.1247E-08	.0000E+00
		93237.55C	6.5891E-07	2	1.6252E-04	2.5609E-05	1.1885E-07	.0000E+00
		92235.50C	1.5345E-05	29	2.1955E-03	2.0404E-04	5.3240E-04	.0000E+00
		92238.50C	3.2103E-03	4436	3.1374E-01	1.3714E-02	2.1519E-03	.0000E+00
		94238.50C	4.5027E-06	7	5.7349E-04	4.6783E-05	4.7159E-05	.0000E+00
		94239.55C	1.0737E-05	14	1.1804E-03	1.2204E-04	3.0469E-04	.0000E+00
		94240.50C	1.9626E-06	2	1.7716E-04	8.2782E-05	5.4136E-07	.0000E+00
		94241.50C	8.3106E-07	0	2.7302E-05	.0000E+00	.0000E+00	.0000E+00
		94242.50C	1.6379E-07	0	4.1526E-07	.0000E+00	.0000E+00	.0000E+00
		95241.50C	1.6464E-07	0	1.0157E-06	.0000E+00	.0000E+00	.0000E+00
		95242.50C	7.6025E-11	0	3.3955E-09	.0000E+00	.0000E+00	.0000E+00
		95243.50C	1.4762E-09	0	7.9268E-09	.0000E+00	.0000E+00	.0000E+00
		96245.35C	1.9734E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
5	6	6000.50C	1.3653E-03	18	1.2938E-03	5.0286E-09	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	117	6.6736E-03	3.4452E-04	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	151	1.0987E-02	7.5568E-05	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	14	9.3128E-04	4.0182E-06	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	7	4.8357E-04	3.2630E-06	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	5295	3.3893E-01	2.0208E-02	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	1657	1.0862E-01	8.7324E-03	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	21627	1.2923E+00	5.3006E-02	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	5595	3.3277E-01	1.3492E-02	.0000E+00	.0000E+00
6	7	6000.50C	1.3653E-03	2	1.5228E-04	1.0485E-09	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	11	7.5471E-04	1.8920E-05	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	8	5.4712E-04	2.9933E-06	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	276	1.6540E-02	7.6893E-04	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	55	3.0249E-03	2.9368E-04	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	991	5.7693E-02	2.1068E-03	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	287	1.7225E-02	4.6986E-04	.0000E+00	.0000E+00
7	8	1001.50C	6.6667E-01	1106379	5.0373E+01	2.6296E-01	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	53518	2.7087E+00	3.7781E-04	.0000E+00	.0000E+00
8	9	1001.50C	6.6667E-01	51548	2.2779E+00	1.2251E-02	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	2461	1.1878E-01	4.2828E-05	.0000E+00	.0000E+00

TOTAL	1658113	8.6616E+01	1.0189E+00	3.0580E-03	1.3027E-04
-------	---------	------------	------------	------------	------------

TOTAL OVER ALL CELLS FOR EACH NUCLIDE	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT GAIN BY FISSION	WEIGHT GAIN BY (N,XN)
1001.50C	1157927	5.2651E+01	2.7521E-01	.0000E+00	.0000E+00
3006.50C	1381	9.1460E-02	4.8524E-02	.0000E+00	.0000E+00
3007.55C	6146	4.5744E-01	1.7497E-05	.0000E+00	.0000E+00
5010.50C	13160	8.0626E-01	5.5123E-01	.0000E+00	.0000E+00
5011.56C	20295	1.4291E+00	1.1522E-05	.0000E+00	.0000E+00
6000.50C	20	1.4461E-03	6.0772E-09	.0000E+00	.0000E+00
7014.50C	128	7.4283E-03	3.6344E-04	.0000E+00	.0000E+00
8016.50C	272568	1.8421E+01	6.3644E-03	.0000E+00	.0000E+00
9019.50C	198	1.4429E-02	1.5673E-05	.0000E+00	.0000E+00
11023.50C	46461	3.1389E+00	1.6765E-03	.0000E+00	.0000E+00
12000.50C	3780	2.7647E-01	7.4196E-05	.0000E+00	.0000E+00
13027.50C	6226	4.6615E-01	4.2519E-04	.0000E+00	.0000E+00
14000.50C	48600	3.6188E+00	4.4534E-03	.0000E+00	4.2473E-05
15031.50C	47	3.3010E-03	9.9379E-06	.0000E+00	.0000E+00
16032.50C	213	1.6243E-02	2.2774E-04	.0000E+00	.0000E+00
17000.50C	168	1.1698E-02	1.1999E-04	.0000E+00	.0000E+00
19000.50C	4070	2.9552E-01	4.2205E-03	.0000E+00	.0000E+00
20000.50C	855	6.3719E-02	9.6782E-04	.0000E+00	.0000E+00
22000.50C	3430	2.2969E-01	3.4331E-04	.0000E+00	.0000E+00
24000.50C	5789	3.7062E-01	2.1027E-02	.0000E+00	.0000E+00
25055.50C	13567	8.4149E-01	1.3806E-02	.0000E+00	.0000E+00
26000.55C	38713	2.4632E+00	5.8689E-02	.0000E+00	.0000E+00
28000.50C	9031	5.6377E-01	1.4701E-02	.0000E+00	.0000E+00
29000.50C	383	2.6120E-02	3.0538E-04	.0000E+00	.0000E+00
47109.50C	109	7.5416E-03	1.2106E-03	.0000E+00	8.7798E-05
56138.50C	75	5.5845E-03	6.1602E-06	.0000E+00	.0000E+00
62149.50C	1	3.4322E-05	3.4109E-05	.0000E+00	.0000E+00
82000.50C	63	4.3504E-03	2.1351E-06	.0000E+00	.0000E+00
90232.50C	217	1.5379E-02	6.8070E-04	2.1091E-05	.0000E+00
92233.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C	0	1.2803E-06	.0000E+00	.0000E+00	.0000E+00
92235.50C	29	2.1955E-03	2.0404E-04	5.3240E-04	.0000E+00
92236.50C	2	1.6086E-04	5.8697E-06	6.1247E-08	.0000E+00
92238.50C	4436	3.1374E-01	1.3714E-02	2.1519E-03	.0000E+00
93237.55C	2	1.6252E-04	2.5609E-05	1.1885E-07	.0000E+00
94238.50C	7	5.7349E-04	4.6783E-05	4.7159E-05	.0000E+00
94239.55C	14	1.1804E-03	1.2204E-04	3.0469E-04	.0000E+00
94240.50C	2	1.7716E-04	8.2782E-05	5.4136E-07	.0000E+00
94241.50C	0	2.7302E-05	.0000E+00	.0000E+00	.0000E+00
94242.50C	0	4.1526E-07	.0000E+00	.0000E+00	.0000E+00
95241.50C	0	1.0157E-06	.0000E+00	.0000E+00	.0000E+00
95242.50C	0	3.3955E-09	.0000E+00	.0000E+00	.0000E+00
95243.50C	0	7.9268E-09	.0000E+00	.0000E+00	.0000E+00
96245.35C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE	RUNTP	NPS = 12265	CTM = 8.00
--------------------	-------	-------------	------------

18 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

Dec 01 15:38 1995 File Name: /users/davis/mcnp/pu/DHLWG1.0 BBAC00000-01717-0200-00001 REV 00 ATTACHMENT III - Page 15

COMPUTER TIME = 8.07 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 15:38:20

PROBID = 12/01/95 15:29:13

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 16:35:12

 INP=DHLWG2 OUTP=DHLWG2.0

PROBID = 12/01/95 16:35:12

```

1-   DHLWG2-- DWPF GLASS INFINITE ARRAY DRY
2-   C      1      2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   C      2 -1.-4 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   C      3      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   C      4      2 -1.-4 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   C      5      1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   C      6      3 -7.9 1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  C      7      3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  C      8      2 -1.-4 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  C      9      2 -1.-4 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10     4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11     4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12     2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13     5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14     5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15     2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16     2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17     0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15*    PX -100.74
38-  C      16*    PX 100.74
39-  C      17*    PY -100.74
40-  C      18*    PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      M5      25055.50C -0.10 26000.55C -0.70      28000.50C -31.000
WARNING. MATERIAL 5 IS NOT USED IN THE PROBLEM.
60-      C      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      M4      6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
WARNING. MATERIAL 4 IS NOT USED IN THE PROBLEM.
63-      C      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      C      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      C      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3      6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      C      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      C      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2      1001.50C 2.0 8016.50C 1.0
71-      MT2     LWTR.01T
72-      M1      3006.50C -1.080-1 3007.55C -1.332 5010.50C -6.234-1 $ DHLW GLASS
73-      C      5011.56C -2.509 8016.50C -4.4102+1 9019.50C -3.108-2
74-      C      11023.50C -8.233 12000.50C -8.046-1 13027.50C -2.057
75-      C      14000.50C -2.1967+1 16032.50C -1.263-1 19000.50C -2.916
76-      C      20000.50C -6.458-1 22000.50C -5.823-1 25055.50C -1.520
77-      C      26000.55C -7.211 28000.50C -7.170-1 15031.50C -1.372-2
78-      C      24000.50C -8.055-2 29000.50C -1.489-1 47109.50C -4.906-2
79-      C      56138.50C -8.083-2 82000.50C -5.948-2 17000.50C -1.131-1
80-      C      90232.50C -1.811-1 62149.50C -4.411-4 92233.50C -9.727-9
81-      C      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
82-      C      92235.50C -1.734-2 92238.50C -3.674 94238.50C -5.153-3
83-      C      94239.55C -1.234-2 94240.50C -2.265-3 94241.50C -9.631-4
84-      C      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
85-      C      95243.50C -1.725-6 96245.35C -2.325-9
86-      PRINT
87-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS      440
POINTS NOT IN ANY CELL          0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS            0
POINTS IN AMBIGUOUS CELLS       0
TOTAL POINTS REJECTED           0
POINTS REMAINING                 440
POINTS AFTER EXPANSION OR CONTRACTION 494
NOMINAL SOURCE SIZE              500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

```

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02
THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00
THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 9.992722E+01

```

MATERIAL
NUMBER COMPONENT NUCLIDE, ATOM FRACTION

3	6000, .00137	7014, .00390	14000, .01460	15031, .00079
	16032, .00051	24000, .19975	25055, .01990	26000, .66604
2	28000, .09314			
1	1001, .66667	8016, .33333		
ASSOCIATED THERMAL S(A,B) DATA SETS: LWTR.01T				
1	3006, .00373	3007, .03949	5010, .01295	5011, .04740
	8016, .57353	9019, .00034	11023, .07449	12000, .00689
	13027, .01586	14000, .16269	16032, .00082	19000, .01551
	20000, .00335	22000, .00253	25055, .00576	26000, .02686
	28000, .00254	15031, .00009	24000, .00032	29000, .00049
	47109, .00009	56138, .00012	82000, .00006	17000, .00066
	90232, .00016	62149, .00000	92233, .00000	92234, .00000
	92236, .00000	93237, .00000	92235, .00002	92238, .00321
	94238, .00000	94239, .00001	94240, .00000	94241, .00000
	94242, .00000	95241, .00000	95242, .00000	95243, .00000
	96245, .00000			

MATERIAL NUMBER	COMPONENT NUCLIDE, MASS FRACTION							
3	6000, .00030	7014, .00100	14000, .00750	15031, .00045				
	16032, .00030	24000, .19000	25055, .02000	26000, .68045				
2	28000, .10000							
1	1001, .11191	8016, .88809						
	3006, .00108	3007, .01333	5010, .00624	5011, .02511				
	8016, .44134	9019, .00031	11023, .08239	12000, .00805				
	13027, .02058	14000, .21983	16032, .00126	19000, .02918				
	20000, .00646	22000, .00583	25055, .01521	26000, .07216				
	28000, .00718	15031, .00014	24000, .00081	29000, .00149				
	47109, .00049	56138, .00081	82000, .00060	17000, .00113				
	90232, .00181	62149, .00000	92233, .00000	92234, .00000				
	92236, .00001	93237, .00001	92235, .00017	92238, .03677				
	94238, .00005	94239, .00012	94240, .00002	94241, .00001				
	94242, .00000	95241, .00000	95242, .00000	95243, .00000				
	96245, .00000							

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1	2 1.00309E-05	1.00000E-04	.00000E+00	2.51903E+06	2.51903E+02	0	
2	3 .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3	4 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4	5 8.25705E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5	6 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6	7 8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7	8 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8	9 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
---------	---------------	--------------------	-------------------------------

1	1	.00000E+00	.00000E+00	INFINITE
2	2	.00000E+00	1.63839E+04	
3	3	.00000E+00	2.91864E+03	
4	4	.00000E+00	.00000E+00	INFINITE
5	5	.00000E+00	.00000E+00	INFINITE
6	6	.00000E+00	.00000E+00	INFINITE
7	7	.00000E+00	.00000E+00	INFINITE
8	8	.00000E+00	.00000E+00	INFINITE
9	9	.00000E+00	1.96800E+04	
10	10	.00000E+00	1.96800E+04	
11	11	.00000E+00	1.96800E+04	
12	12	.00000E+00	1.96800E+04	
13	13	.00000E+00	.00000E+00	NOT A BOUNDARY
14	14	.00000E+00	.00000E+00	INFINITE
15	19	.00000E+00	.00000E+00	NOT A BOUNDARY
16	20	.00000E+00	1.63839E+04	
17	21	.00000E+00	.00000E+00	NOT A BOUNDARY
18	22	.00000E+00	.00000E+00	NOT A BOUNDARY
19	23	.00000E+00	.00000E+00	NOT A BOUNDARY
20	24	.00000E+00	.00000E+00	NOT A BOUNDARY
21	25	.00000E+00	.00000E+00	NOT A BOUNDARY

1CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-05	1.00000E-04	2.51903E+06	2.51903E+02	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.25705E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00

TOTAL
1SURFACES 2.52367E+06 3.68552E+04

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2	REFL.	PZ .0000000E+00
3	3		PZ 1.3713000E+02
4	4		PZ 1.3871750E+02
5	5		PX -3.2000000E+01
6	6		PX 3.2000000E+01
7	7		PY -3.2000000E+01
8	8		PY 3.2000000E+01
9	9	REFL.	PX -6.3999900E+01
10	10	REFL.	PX 6.3999900E+01
11	11	REFL.	PY -6.3999900E+01
12	12	REFL.	PY 6.3999900E+01
13	13		CZ 7.8450000E+01
14	14		CZ 3.0480000E+01
15	19		CZ 8.0450000E+01
16	20		PZ 1.5375000E+02
17	21		PZ 1.5625000E+02
18	22		CZ 8.5450000E+01
19	23		PZ 1.6250000E+02
20	24		PZ 1.7100000E+02

21 25 PZ 2.0148000E+02
 WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
 1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL	TMP 1
2	2.5300E-08
4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

10 WARNING MESSAGES SO FAR.
 1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE LENGTH

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY
3006.50C	6551	NJOY
3007.55C	11053	NJOY
5010.50C	9587	NJOY
6000.50C	16126	NJOY
7014.50C	22772	NJOY
8016.50C	23669	NJOY
13027.50C	22891	NJOY
24000.50C	89104	NJOY
26000.55C	84136	NJOY
28000.50C	82267	NJOY
29000.50C	22473	NJOY
56138.50C	2479	NJOY
82000.50C	28695	NJOY
92233.50C	14205	NJOY
92235.50C	44188	NJOY
92238.50C	66440	NJOY
94239.55C	67551	NJOY
94240.50C	42744	NJOY

(1301)	79/07/31.
(1303)	79/08/01.
(3007)	07/29/82
(1305)	79/09/10.
(1306)	79/07/31.
(1275)	79/09/08.
(1276)	05/14/81
(1313)	79/09/08.
(1324)	79/06/21.
(260)	10/21/82
(1328)	79/06/21.
(1329)	02/05/80
(1353)	79/06/21.
(1382)	03/10/82
(1393)	79/09/12.
(1395)	79/09/12.
(1398)	79/09/13.
(1399)	02/21/85
(1380)	79/09/13.

TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU

TABLES FROM FILE NEWXS2

5011.56C 28379

06/28/88

TABLES FROM FILE ENDF5P2

9019.50C	20657	NJOY	(1309)	79/06/22.
11023.50C	36270	NJOY	(1311)	79/06/21.
14000.50C	48275	NJOY	(1314)	79/06/21.
17000.50C	12269	NJOY	(1149)	79/10/29.

WARNING. NUBAR OF	92234.50C	MAY BE EITHER PROMPT OR TOTAL.		
92234.50C	76999	NJOY	(1394)	79/10/17.

WARNING. NUBAR OF	92236.50C	MAY BE EITHER PROMPT OR TOTAL.		
92236.50C	119238	NJOY	(1396)	79/08/30.

WARNING. NUBAR OF	94238.50C	MAY BE EITHER PROMPT OR TOTAL.		
94238.50C	16458	NJOY	(1338)	79/09/12.
94241.50C	22523	NJOY	(1381)	79/08/30.
94242.50C	43433	NJOY	(1342)	79/09/06.

TOTAL NU
TOTAL NU

TABLES FROM FILE ENDF5U2

12000.50C	39283	NJOY	(1312)	79/08/30.
15031.50C	2779	NJOY	(1315)	79/10/29.
16032.50C	2684	NJOY	(1316)	79/10/29.
19000.50C	9766	NJOY	(1150)	79/10/29.
20000.50C	26104	NJOY	(1320)	79/06/22.
22000.50C	25231	NJOY	(1322)	79/06/21.
25055.50C	60097	NJOY	(1325)	79/06/21.
62149.50C	11116	NJOY	(1319)	02/12/85
90232.50C	95614	NJOY	(1390)	07/10/80

TOTAL NU

WARNING. NUBAR OF	95241.50C	MAY BE EITHER PROMPT OR TOTAL.		
95241.50C	29300	NJOY	(1361)	79/08/29.

WARNING. NUBAR OF	95242.50C	MAY BE EITHER PROMPT OR TOTAL.		
95242.50C	5248	NJOY	(1369)	79/09/24.

WARNING. NUBAR OF	95243.50C	MAY BE EITHER PROMPT OR TOTAL.		
95243.50C	51474	NJOY	(1363)	79/08/30.

TABLES FROM FILE RMCCSA2

47109.50C	10147	NJOY	(1373)	11/01/85
93237.55C	29142	NJOY	(1337)	04/04/85

TOTAL NU

TABLES FROM FILE ENDL852

WARNING. NUBAR OF	96245.35C	MAY BE EITHER PROMPT OR TOTAL.		
96245.35C	15310	ZA=96245 ENDL-85 85/04/24 T=OK	(93)	86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T	10193	HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN	1001	0	010/22/85
----------	-------	---	------	---	-----------

TOTAL 1506073

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL	66794
TALLIES	0

BANK 12403
CROSS SECTIONS 1506073
TOTAL 1585270

DUMP NO. 1 ON FILE RUNTPJ NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

18 WARNING MESSAGES SO FAR.
1 STARTING MCRUN. FIELD LENGTH = 0 CP0 = .07 PRINT TABLE 110

DHLWG2-- DWPf GLASS INFINITE ARRAY DRY

NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	-1.521E+01	1.594E+01	9.648E+01	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	1.012E+00	3.930E-01
2	-1.677E+01	1.402E+01	4.069E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	1.012E+00	1.849E+00
3	-1.275E+01	-1.709E+01	4.737E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	1.012E+00	5.488E-01
4	1.565E+01	3.000E+00	2.278E+00	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	1.012E+00	7.899E-01
5	1.565E+01	3.000E+00	2.278E+00	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	1.012E+00	1.796E+00
6	-6.187E+00	6.029E-01	2.320E+01	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	1.012E+00	9.036E-01
7	8.667E+00	-6.940E+00	2.690E+01	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	1.012E+00	3.954E+00
8	-5.438E+00	2.597E+01	5.931E+01	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	1.012E+00	8.708E-01
9	-2.323E+01	-2.514E+00	7.319E+01	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	1.012E+00	1.655E+00
10	2.558E+01	-1.317E+01	6.492E+01	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	1.012E+00	1.396E+00
11	-6.359E+00	9.842E+00	1.084E+02	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	1.012E+00	4.950E+00
12	3.728E+00	-2.291E+01	8.584E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	1.012E+00	4.750E-01
13	3.728E+00	-2.291E+01	8.584E+01	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	1.012E+00	6.649E-01
14	2.297E+01	-8.274E+00	9.321E+01	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	1.012E+00	2.679E-01
15	2.297E+01	-8.274E+00	9.321E+01	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	1.012E+00	5.103E-01
16	-1.327E+01	7.423E+00	3.247E+01	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	1.012E+00	3.220E+00
17	-1.969E+01	-2.124E+01	9.706E+00	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	1.012E+00	8.052E-01
18	-1.374E+01	-1.302E+01	9.160E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	1.012E+00	5.778E-01
19	-2.719E+01	-7.098E+00	8.813E+01	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	1.012E+00	3.250E-01
20	-2.097E+01	-1.410E+01	8.424E+01	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	1.012E+00	2.946E+00
21	-2.465E+01	-1.426E+01	7.400E+01	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	1.012E+00	2.593E+00
22	5.710E+00	-2.154E+01	3.355E+01	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	1.012E+00	6.270E-01
23	8.601E+00	1.000E+01	3.989E+01	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	1.012E+00	9.426E-01
24	2.217E+01	-1.529E+01	4.701E+01	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	1.012E+00	1.101E+00
25	2.217E+01	-1.529E+01	4.701E+01	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	1.012E+00	3.339E+00
26	-7.489E+00	2.259E+01	6.021E+01	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	1.012E+00	3.799E+00
27	1.156E+01	2.774E+00	2.791E+01	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	1.012E+00	8.114E-01
28	-2.310E+00	1.417E+01	2.604E+01	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	1.012E+00	3.697E+00
29	-2.143E+01	7.045E+00	3.864E+01	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	1.012E+00	4.388E+00
30	1.032E+01	2.403E+01	3.592E+01	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	1.012E+00	5.246E-01
31	3.926E+00	-1.982E+01	3.000E+01	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	1.012E+00	1.229E+00
32	3.926E+00	-1.982E+01	3.000E+01	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	1.012E+00	7.262E+00
33	-5.015E+00	-1.025E+01	3.999E+00	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	1.012E+00	2.676E+00
34	-3.711E+00	-1.193E+01	3.484E+00	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	1.012E+00	1.000E+00
35	-3.711E+00	-1.193E+01	3.484E+00	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	1.012E+00	5.295E-01
36	2.380E+01	-2.182E+00	3.755E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	1.012E+00	2.651E+00
37	2.380E+01	-2.182E+00	3.755E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	1.012E+00	5.384E-01
38	-1.429E+01	-5.060E+00	7.755E+00	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	1.012E+00	1.486E+00
39	2.175E+01	-9.111E+00	1.697E+00	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	1.012E+00	4.327E+00
40	2.799E+01	4.382E+00	1.303E+01	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	1.012E+00	1.509E+00
41	2.113E+01	1.350E+01	9.086E+01	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	1.012E+00	4.221E+00

42	7.902E+00	2.466E+00	9.262E+01	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	1.012E+00	6.540E-01
43	5.105E+00	5.621E+00	9.232E+01	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	1.012E+00	9.490E-01
44	-2.701E+00	-4.031E+00	9.448E+01	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	1.012E+00	1.066E+00
45	5.970E+00	-2.705E+01	7.737E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	1.012E+00	7.280E-01
46	5.970E+00	-2.705E+01	7.737E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	1.012E+00	1.662E+00
47	-2.942E+01	-8.113E-01	1.027E+02	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	1.012E+00	1.938E+00
48	8.625E+00	-2.055E+01	6.731E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	1.012E+00	1.090E+00
49	8.625E+00	-2.055E+01	6.731E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	1.012E+00	1.041E+00
50	8.321E+00	-2.625E+01	6.565E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	1.012E+00	9.354E-01

CYCLE 1 K(COLLISION) .009075 REMOVAL LIFETIME(ABS) 1.3387E+02 SOURCE POINTS GENERATED 155

CYCLE 2 K(COLLISION) .007922 REMOVAL LIFETIME(ABS) 1.2660E+02 SOURCE POINTS GENERATED 445

CYCLE 3 K(COLLISION) .009127 REMOVAL LIFETIME(ABS) 1.2597E+02 SOURCE POINTS GENERATED 560

CYCLE 4 K(COLLISION) .009836 REMOVAL LIFETIME(ABS) 1.3631E+02 SOURCE POINTS GENERATED 544

CYCLE 5 K(COLLISION) .009072 REMOVAL LIFETIME(ABS) 1.2739E+02 SOURCE POINTS GENERATED 448

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .008689 REMOVAL LIFETIME(ABS) 1.3113E+02 SOURCE POINTS GENERATED 489

ESTIMATOR	CYCLE	AVE OF	2 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008612	.008651	.0045	K(COL/ABS)	.000000 .0000	.000000 .0000	.0000
K(ABSORPTION)	.008819	.008506	.0368	K(ABS/TK LN)	.000000 .0000	.000000 .0000	.0000
K(TRK LENGTH)	.008530	.008600	.0080	K(TK LN/COL)	.000000 .0000	.000000 .0000	.0000
REM LIFE(COL)	1.4867E+02	1.3988E+02	.0628				
REM LIFE(ABS)	1.3676E+02	1.3395E+02	.0210	LIFE(COL/ABS)	.0000E+00 .0000	.0000E+00 .0000	.0000
SOURCE POINTS GENERATED	520						

ESTIMATOR	CYCLE	AVE OF	3 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008950	.008751	.0117	K(COL/ABS)	.008234 .0429	.008635 .0001	-1.0000
K(ABSORPTION)	.006141	.007717	.1048	K(ABS/TK LN)	.008214 .0421	.008585 .0022	-.9928
K(TRK LENGTH)	.008933	.008711	.0136	K(TK LN/COL)	.008731 .0126	.008888 .0144	.9921
REM LIFE(COL)	1.2416E+02	1.3464E+02	.0542				
REM LIFE(ABS)	1.2247E+02	1.3012E+02	.0319	LIFE(COL/ABS)	1.3238E+02 .0426	1.2654E+02 .0365	.9332
SOURCE POINTS GENERATED	511						

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 8

ESTIMATOR	CYCLE	AVE OF	4 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009015	.008817	.0111	K(COL/ABS)	.008294 .0310	.008697 .0101	-.6717
K(ABSORPTION)	.007930	.007771	.0739	K(ABS/TK LN)	.008229 .0298	.008568 .0026	-.9753
K(TRK LENGTH)	.008614	.008687	.0100	K(TK LN/COL)	.008752 .0092	.008736 .0121	.5151
REM LIFE(COL)	1.2722E+02	1.3278E+02	.0413	K(COL/ABS/TK LN)	.008425 .0169	.008595 .0023	
REM LIFE(ABS)	1.3175E+02	1.3053E+02	.0227	LIFE(COL/ABS)	1.3166E+02 .0308	1.2967E+02 .0255	.8233
SOURCE POINTS GENERATED	489						

ESTIMATOR	CYCLE	AVE OF	5 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009052	.008864	.0101	K(COL/ABS)	.008358 .0250	.008755 .0103	-.4667
K(ABSORPTION)	.008177	.007852	.0576	K(ABS/TK LN)	.008339 .0263	.008672 .0190	-.2563
K(TRK LENGTH)	.009382	.008826	.0175	K(TK LN/COL)	.008845 .0127	.008867 .0116	.6653
REM LIFE(COL)	1.1016E+02	1.2826E+02	.0484	K(COL/ABS/TK LN)	.008514 .0167	.008759 .0163	
REM LIFE(ABS)	1.1597E+02	1.2762E+02	.0291	LIFE(COL/ABS)	1.2794E+02 .0380	1.2713E+02 .0259	.9215
SOURCE POINTS GENERATED	498						

ESTIMATOR	CYCLE	AVE OF	6 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008590	.008818	.0098	K(COL/ABS)	.008492 .0256	.008743 .0077	-.6451

K(COLLISION)	.009741	.008167	.0594	K(ABS/TK LN)	.008490	.0276	.008739	.0146	-.2605
K(TRK LENGTH)	.008748	.008813	.0144	K(TK LN/COL)	.008815	.0109	.008818	.0109	.6154
REM LIFE(COL)	1.3125E+02	1.2876E+02	.0395	K(COL/ABS/TK LN)	.008599	.0167	.008741	.0098	
REM LIFE(ABS)	1.2730E+02	1.2756E+02	.0238	LIFE(COL/ABS)	1.2816E+02	.0310	1.2670E+02	.0210	.9152
SOURCE POINTS GENERATED	441								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 11

ESTIMATOR	CYCLE 12	AVE OF 7 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009244	.008879	K(COL/ABS)	.008750	.008879	.1446
K(ABSORPTION)	.011343	.008621	K(ABS/TK LN)	.008747	.008875	.2190
K(TRK LENGTH)	.009245	.008874	K(TK LN/COL)	.008877	.008879	.7293
REM LIFE(COL)	1.2223E+02	1.2783E+02	K(COL/ABS/TK LN)	.008791	.008879	.0133
REM LIFE(ABS)	1.2784E+02	1.2760E+02	LIFE(COL/ABS)	1.2771E+02	1.2747E+02	.8911
SOURCE POINTS GENERATED	505					

ESTIMATOR	CYCLE 13	AVE OF 8 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008675	.008853	K(COL/ABS)	.008756	.008852	.1167
K(ABSORPTION)	.008921	.008658	K(ABS/TK LN)	.008739	.008818	.1638
K(TRK LENGTH)	.008446	.008821	K(TK LN/COL)	.008837	.008856	.7556
REM LIFE(COL)	1.3991E+02	1.2934E+02	K(COL/ABS/TK LN)	.008777	.008854	.0117
REM LIFE(ABS)	1.3812E+02	1.2892E+02	LIFE(COL/ABS)	1.2913E+02	1.2864E+02	.9004
SOURCE POINTS GENERATED	477					

ESTIMATOR	CYCLE 14	AVE OF 9 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008609	.008826	K(COL/ABS)	.008638	.008831	.2379
K(ABSORPTION)	.006778	.008449	K(ABS/TK LN)	.008610	.008777	.3100
K(TRK LENGTH)	.008369	.008771	K(TK LN/COL)	.008798	.008836	.7873
REM LIFE(COL)	1.3881E+02	1.3039E+02	K(COL/ABS/TK LN)	.008682	.008838	.0110
REM LIFE(ABS)	1.2509E+02	1.2849E+02	LIFE(COL/ABS)	1.2944E+02	1.2795E+02	.7985
SOURCE POINTS GENERATED	498					

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 14

ESTIMATOR	CYCLE 15	AVE OF 10 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008799	.008824	K(COL/ABS)	.008696	.008826	.2205
K(ABSORPTION)	.009647	.008569	K(ABS/TK LN)	.008675	.008786	.3236
K(TRK LENGTH)	.008875	.008781	K(TK LN/COL)	.008802	.008830	.7791
REM LIFE(COL)	1.3253E+02	1.3060E+02	K(COL/ABS/TK LN)	.008725	.008831	.0094
REM LIFE(ABS)	1.3759E+02	1.2940E+02	LIFE(COL/ABS)	1.3000E+02	1.2924E+02	.7551
SOURCE POINTS GENERATED	486					

ESTIMATOR	CYCLE 16	AVE OF 11 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009043	.008843	K(COL/ABS)	.008742	.008847	.2559
K(ABSORPTION)	.009353	.008640	K(ABS/TK LN)	.008716	.008796	.3359
K(TRK LENGTH)	.008902	.008792	K(TK LN/COL)	.008818	.008849	.7737
REM LIFE(COL)	1.2646E+02	1.3023E+02	K(COL/ABS/TK LN)	.008759	.008851	.0089
REM LIFE(ABS)	1.2710E+02	1.2919E+02	LIFE(COL/ABS)	1.2971E+02	1.2905E+02	.7580
SOURCE POINTS GENERATED	526					

ESTIMATOR	CYCLE 17	AVE OF 12 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009946	.008935	K(COL/ABS)	.008851	.008942	.3870
K(ABSORPTION)	.010150	.008766	K(ABS/TK LN)	.008830	.008900	.4378
K(TRK LENGTH)	.010017	.008894	K(TK LN/COL)	.008915	.008952	.9112
REM LIFE(COL)	1.3369E+02	1.3052E+02	K(COL/ABS/TK LN)	.008865	.008954	.0137
REM LIFE(ABS)	1.3325E+02	1.2953E+02	LIFE(COL/ABS)	1.3002E+02	1.2940E+02	.7601
SOURCE POINTS GENERATED	565					

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 17

ESTIMATOR	CYCLE	18	AVE OF	13	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009239		.008959		.0117	K(COL/ABS)	.008710 .0296	.008952 .0122	.1560
K(ABSORPTION)	.004800		.008461		.0579	K(ABS/TK LN)	.008694 .0303	.008916 .0150	.1711
K(TRK LENGTH)	.009321		.008927		.0143	K(TK LN/COL)	.008943 .0127	.008973 .0119	.9157
REM LIFE(COL)	1.1620E+02		1.2941E+02		.0218	K(COL/ABS/TK LN)	.008782 .0218	.008966 .0131	
REM LIFE(ABS)	1.2250E+02		1.2899E+02		.0142	LIFE(COL/ABS)	1.2920E+02 .0171	1.2890E+02 .0145	.7838
SOURCE POINTS GENERATED		445							

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008542		.008929		.0114	K(COL/ABS)	.008613 .0299	.008933 .0119	.2400
K(ABSORPTION)	.006167		.008297		.0581	K(ABS/TK LN)	.008593 .0307	.008888 .0147	.2592
K(TRK LENGTH)	.008381		.008888		.0140	K(TK LN/COL)	.008908 .0124	.008952 .0114	.9232
REM LIFE(COL)	1.0989E+02		1.2802E+02		.0231	K(COL/ABS/TK LN)	.008705 .0222	.008952 .0128	
REM LIFE(ABS)	1.2099E+02		1.2842E+02		.0140	LIFE(COL/ABS)	1.2822E+02 .0177	1.2854E+02 .0138	.8055
SOURCE POINTS GENERATED		450							

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009346		.008957		.0110	K(COL/ABS)	.008574 .0284	.008948 .0115	.1590
K(ABSORPTION)	.006705		.008191		.0563	K(ABS/TK LN)	.008548 .0292	.008897 .0137	.2179
K(TRK LENGTH)	.009131		.008904		.0132	K(TK LN/COL)	.008930 .0118	.008977 .0112	.9162
REM LIFE(COL)	1.2144E+02		1.2758E+02		.0219	K(COL/ABS/TK LN)	.008684 .0209	.008964 .0130	
REM LIFE(ABS)	1.2840E+02		1.2842E+02		.0130	LIFE(COL/ABS)	1.2800E+02 .0166	1.2866E+02 .0128	.7956
SOURCE POINTS GENERATED		540							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 20

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.009432		.008986		.0108	K(COL/ABS)	.008625 .0270	.008983 .0112	.2002
K(ABSORPTION)	.009351		.008263		.0529	K(ABS/TK LN)	.008604 .0280	.008943 .0136	.2591
K(TRK LENGTH)	.009554		.008945		.0131	K(TK LN/COL)	.008966 .0117	.009008 .0108	.9243
REM LIFE(COL)	1.2961E+02		1.2771E+02		.0205	K(COL/ABS/TK LN)	.008732 .0202	.008998 .0123	
REM LIFE(ABS)	1.3202E+02		1.2864E+02		.0123	LIFE(COL/ABS)	1.2817E+02 .0155	1.2891E+02 .0121	.7935
SOURCE POINTS GENERATED		521							

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008873		.008980		.0101	K(COL/ABS)	.008612 .0255	.008977 .0105	.2028
K(ABSORPTION)	.007946		.008245		.0499	K(ABS/TK LN)	.008588 .0264	.008931 .0129	.2624
K(TRK LENGTH)	.008724		.008932		.0124	K(TK LN/COL)	.008956 .0110	.009005 .0101	.9241
REM LIFE(COL)	1.2411E+02		1.2750E+02		.0193	K(COL/ABS/TK LN)	.008719 .0190	.008995 .0117	
REM LIFE(ABS)	1.2913E+02		1.2867E+02		.0115	LIFE(COL/ABS)	1.2808E+02 .0146	1.2899E+02 .0114	.7887
SOURCE POINTS GENERATED		467							

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008529		.008955		.0100	K(COL/ABS)	.008561 .0249	.008959 .0104	.2461
K(ABSORPTION)	.006838		.008167		.0484	K(ABS/TK LN)	.008543 .0256	.008922 .0122	.2790
K(TRK LENGTH)	.008706		.008919		.0118	K(TK LN/COL)	.008937 .0106	.008966 .0102	.9143
REM LIFE(COL)	1.2452E+02		1.2733E+02		.0183	K(COL/ABS/TK LN)	.008680 .0185	.008966 .0118	
REM LIFE(ABS)	1.2360E+02		1.2839E+02		.0111	LIFE(COL/ABS)	1.2786E+02 .0139	1.2866E+02 .0110	.7852
SOURCE POINTS GENERATED		500							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 23

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.007857		.008897		.0115	K(COL/ABS)	.008549 .0236	.008874 .0119	.1518
K(ABSORPTION)	.008807		.008200		.0458	K(ABS/TK LN)	.008532 .0242	.008841 .0133	.1978
K(TRK LENGTH)	.007854		.008863		.0129	K(TK LN/COL)	.008880 .0120	.008906 .0118	.9347
REM LIFE(COL)	1.1976E+02		1.2693E+02		.0176	K(COL/ABS/TK LN)	.008653 .0179	.008881 .0133	
REM LIFE(ABS)	1.2287E+02		1.2810E+02		.0108	LIFE(COL/ABS)	1.2752E+02 .0135	1.2841E+02 .0106	.7928
SOURCE POINTS GENERATED		474							

ESTIMATOR	CYCLE	25	AVE OF	20 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.008903		.008897	.0109	K(COL/ABS)	.008560	.0224	.008875 .0112 .1517
K(ABSORPTION)	.008634		.008222	.0434	K(ABS/TK LN)	.008540	.0230	.008836 .0126 .1939
K(TRK LENGTH)	.008746		.008857	.0122	K(TK LN/COL)	.008877	.0114	.008907 .0112 .9332
REM LIFE(COL)	1.2326E+02		1.2675E+02	.0168	K(COL/ABS/TK LN)	.008659	.0169	.008884 .0126 .7938
REM LIFE(ABS)	1.2641E+02		1.2801E+02	.0102	LIFE(COL/ABS)	1.2738E+02	.0128	1.2836E+02 .0101
SOURCE POINTS GENERATED	590							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP
1PROBLEM SUMMARY

CYCLE = 25

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

+ DHLWG2-- DWPF GLASS INFINITE ARRAY DRY

PROBID = 12/01/95 16:44:58
12/01/95 16:35:12

NEUTRON CREATION	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY (PARTICLE)	NEUTRON LOSS	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY (PARTICLE)
SOURCE	12048	1.0375E+00	2.0354E+00	ESCAPE	1339	9.8430E-02	4.9479E-02
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	7.2397E-02	4.1937E-04	WEIGHT CUTOFF	10709	7.1935E-02	4.1492E-04
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	0.	DOWNSCATTERING	0	0.	1.8570E+00
				CAPTURE	0	9.3636E-01	1.2285E-01
(N,XN)	0	0.	0.	LOSS TO (N,XN)	0	0.	0.
FISSION	0	0.	0.	LOSS TO FISSION	0	3.1900E-03	6.0850E-03
TOTAL	12048	1.1099E+00	2.0358E+00	TOTAL	12048	1.1099E+00	2.0358E+00

NUMBER OF NEUTRONS BANKED 0
NEUTRON TRACKS PER SOURCE PARTICLE 1.0000E+00
NEUTRON COLLISIONS PER SOURCE PARTICLE 6.5921E+01
TOTAL NEUTRON COLLISIONS 794222
NET MULTIPLICATION 1.0000E+00 .0023

AVERAGE LIFETIME, SHAKES
ESCAPE 7.0518E+01
CAPTURE 1.3442E+02
CAPTURE OR ESCAPE 1.2836E+02
ANY TERMINATION 1.2846E+02

CUTOFFS
TCO 1.0000E+34
ECO .0000E+00
WC1 -5.0000E-01
WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 9.58 MINUTES
COMPUTER TIME IN MCRUN 9.52 MINUTES
SOURCE PARTICLES PER MINUTE 1.2660E+03
RANDOM NUMBERS GENERATED 7698615

MAXIMUM NUMBER EVER IN BANK 0
BANK OVERFLOWS TO BACKUP FILE 0
FIELD LENGTH 0
MOST RANDOM NUMBERS USED WAS 1499 IN HISTORY 11094

RANGE OF SAMPLED SOURCE WEIGHTS = 8.8496E-01 TO 3.2258E+00
1NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

CELL	TRACKS ENTERING	POPULATION	COLLISIONS	COLLISIONS * WEIGHT (PER HISTORY)	NUMBER WEIGHTED ENERGY	FLUX WEIGHTED ENERGY	AVERAGE TRACK WEIGHT (RELATIVE)	AVERAGE TRACK MFP (CM)
1	2	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	48608	12048	712799	5.0004E+01	6.1829E-02	4.6108E-01	8.6331E-01
5	6	73522	9215	79894	5.2840E+00	5.4125E-02	4.1415E-01	8.5712E-01
6	7	981	764	1446	9.1660E-02	8.2164E-02	5.5556E-01	8.4728E-01
7	8	61324	8747	82	5.6336E-03	5.5709E-02	4.2729E-01	8.5746E-01
8	9	1615	1339	1	7.7968E-05	7.8754E-02	5.1338E-01	8.7902E-01

TOTAL 186050 32113 794222 5.5385E+01
1NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-9.8430E-02	-9.8430E-02
3	4	.0000E+00	.0000E+00	.0000E+00	-1.7362E+00	-1.7362E+00
4	5	2.5889E+00	1.0375E+00	.0000E+00	-2.7055E+00	9.2094E-01
5	6	5.2353E+00	.0000E+00	.0000E+00	-5.2174E+00	1.7859E-02
6	7	6.9436E-02	.0000E+00	.0000E+00	-6.9179E-02	2.5677E-04
7	8	4.3623E+00	.0000E+00	.0000E+00	-2.6461E+00	1.7162E+00
8	9	1.1849E-01	.0000E+00	.0000E+00	-7.7966E-05	1.1841E-01

TOTAL 1.2374E+01 1.0375E+00 .0000E+00 .0000E+00 -1.2473E+01 9.3909E-01
1NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	2.5740E-04	.0000E+00	.0000E+00	.0000E+00	2.5740E-04
5	6	.0000E+00	.0000E+00	1.9558E-04	.0000E+00	.0000E+00	.0000E+00	1.9558E-04
6	7	.0000E+00	.0000E+00	9.0790E-06	.0000E+00	.0000E+00	.0000E+00	9.0790E-06
7	8	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
8	9	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00

TOTAL .0000E+00 .0000E+00 4.6206E-04 .0000E+00 .0000E+00 .0000E+00 .0000E+00 4.6206E-04
1NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	-9.1801E-01	-3.1900E-03	-9.2120E-01
5	6	.0000E+00	.0000E+00	-1.8054E-02	.0000E+00	-1.8054E-02
6	7	.0000E+00	.0000E+00	-2.6585E-04	.0000E+00	-2.6585E-04
7	8	.0000E+00	.0000E+00	-3.2569E-05	.0000E+00	-3.2569E-05
8	9	.0000E+00	.0000E+00	-1.8526E-09	.0000E+00	-1.8526E-09

TOTAL .0000E+00 .0000E+00 -9.3636E-01 .0000E+00 -3.1900E-03 -9.3955E-01
1NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOSS TO FISSION	WEIGHT GAIN BY (N,XN)
1	2	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
3	4	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
4	5	3006.50C	3.7347E-03	1891	1.2826E-01	6.6192E-02	.0000E+00
		3007.55C	3.9491E-02	9837	7.2700E-01	2.9378E-05	.0000E+00
		5010.50C	1.2950E-02	18939	1.2110E+00	7.7911E-01	.0000E+00
		5011.56C	4.7405E-02	36783	2.5618E+00	2.3181E-05	.0000E+00
		8016.50C	5.7353E-01	375039	2.6722E+01	6.8321E-03	.0000E+00
		9019.50C	3.4029E-04	329	2.4455E-02	9.5317E-06	.0000E+00

		11023.50C	7.4491E-02	88424	5.8781E+00	3.1056E-03	.0000E+00	.0000E+00
		12000.50C	6.8859E-03	6531	4.7909E-01	1.1302E-04	.0000E+00	.0000E+00
		13027.50C	1.5858E-02	9853	7.3929E-01	7.0617E-04	.0000E+00	.0000E+00
		14000.50C	1.6269E-01	78343	5.7880E+00	6.5253E-03	.0000E+00	.0000E+00
		16032.50C	8.2170E-04	348	2.6388E-02	2.6575E-04	.0000E+00	.0000E+00
		19000.50C	1.5513E-02	7063	5.0702E-01	6.3871E-03	.0000E+00	.0000E+00
		20000.50C	3.3518E-03	1396	1.0007E-01	1.0564E-03	.0000E+00	.0000E+00
		22000.50C	2.5298E-03	6710	4.5090E-01	5.4741E-04	.0000E+00	.0000E+00
		25055.50C	5.7551E-03	25373	1.5397E+00	1.0703E-02	.0000E+00	.0000E+00
		26000.55C	2.6859E-02	29596	2.0214E+00	6.8174E-03	.0000E+00	.0000E+00
		28000.50C	2.5413E-03	6063	3.9700E-01	1.2370E-03	.0000E+00	.0000E+00
		15031.50C	9.2138E-05	60	3.9097E-03	1.0818E-05	.0000E+00	.0000E+00
		24000.50C	3.2224E-04	432	3.0054E-02	1.3465E-04	.0000E+00	.0000E+00
		29000.50C	4.8740E-04	783	5.2661E-02	7.4950E-04	.0000E+00	.0000E+00
		47109.50C	9.3705E-05	180	1.2547E-02	1.4243E-03	.0000E+00	.0000E+00
		56138.50C	1.2192E-04	153	1.0893E-02	1.2026E-05	.0000E+00	.0000E+00
		82000.50C	5.9707E-05	81	5.6253E-03	2.0976E-06	.0000E+00	.0000E+00
		17000.50C	6.6358E-04	323	2.2660E-02	1.7153E-04	.0000E+00	.0000E+00
		90232.50C	1.6235E-04	358	2.3867E-02	1.4131E-03	2.3375E-05	.0000E+00
		62149.50C	6.1613E-07	5	3.3643E-04	9.9361E-05	.0000E+00	.0000E+00
		92233.50C	8.6822E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		92234.50C	2.8983E-07	3	1.8460E-04	8.3473E-06	1.9617E-07	.0000E+00
		92236.50C	9.1294E-07	2	1.8178E-04	5.3281E-06	4.7210E-08	.0000E+00
		93237.55C	6.5891E-07	2	9.6913E-05	2.1991E-05	7.5191E-08	.0000E+00
		92235.50C	1.5345E-05	36	2.7760E-03	1.7658E-04	5.0390E-04	.0000E+00
		92238.50C	3.2103E-03	7817	5.3608E-01	2.3825E-02	2.3276E-03	.0000E+00
		94238.50C	4.5027E-06	18	1.3378E-03	9.9836E-05	9.5907E-05	.0000E+00
		94239.55C	1.0737E-05	20	1.8146E-03	1.4343E-04	2.1634E-04	.0000E+00
		94240.50C	1.9626E-06	8	5.9719E-04	4.5971E-05	2.2541E-05	.0000E+00
		94241.50C	8.3106E-07	0	4.2436E-05	.0000E+00	.0000E+00	.0000E+00
		94242.50C	1.6379E-07	0	5.4950E-07	.0000E+00	.0000E+00	.0000E+00
		95241.50C	1.6464E-07	0	1.4758E-06	.0000E+00	.0000E+00	.0000E+00
		95242.50C	7.6025E-11	0	7.4865E-09	.0000E+00	.0000E+00	.0000E+00
		95243.50C	1.4762E-09	0	7.5644E-08	.0000E+00	.0000E+00	.0000E+00
		96245.35C	1.9734E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
5	6	6000.50C	1.3653E-03	71	5.1117E-03	5.5414E-09	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	242	1.5756E-02	9.0761E-05	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	481	3.4976E-02	5.5083E-05	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	52	3.2376E-03	5.0627E-06	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	21	1.6724E-03	6.6114E-06	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	16307	1.0884E+00	4.6183E-03	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	5436	3.2744E-01	2.2005E-03	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	42821	2.8589E+00	8.4051E-03	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	14463	9.4856E-01	2.6730E-03	.0000E+00	.0000E+00
6	7	6000.50C	1.3653E-03	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	4	2.7107E-04	1.2564E-06	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	15	1.0332E-03	6.8548E-07	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	315	2.0654E-02	6.4703E-05	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	76	4.3368E-03	2.6350E-05	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	785	5.0469E-02	1.3925E-04	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	251	1.4896E-02	3.3601E-05	.0000E+00	.0000E+00
7	8	1001.50C	6.6667E-01	71	4.6407E-03	1.8080E-07	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	11	9.9288E-04	3.2389E-05	.0000E+00	.0000E+00
8	9	1001.50C	6.6667E-01	1	7.7968E-05	1.8526E-09	.0000E+00	.0000E+00

8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
TOTAL		794222	5.5389E+01	9.3636E-01	3.1900E-03	.0000E+00

TOTAL OVER ALL CELLS FOR EACH NUCLIDE	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT GAIN BY FISSION	WEIGHT GAIN BY (N,XN)
1001.50C	72	4.7186E-03	1.8265E-07	.0000E+00	.0000E+00
3006.50C	1891	1.2826E-01	6.6192E-02	.0000E+00	.0000E+00
3007.55C	9837	7.2700E-01	2.9378E-05	.0000E+00	.0000E+00
5010.50C	18939	1.2110E+00	7.7911E-01	.0000E+00	.0000E+00
5011.56C	36783	2.5618E+00	2.3181E-05	.0000E+00	.0000E+00
6000.50C	71	5.1117E-03	5.5414E-09	.0000E+00	.0000E+00
7014.50C	246	1.6027E-02	9.2018E-05	.0000E+00	.0000E+00
8016.50C	375050	2.6723E+01	6.8645E-03	.0000E+00	.0000E+00
9019.50C	329	2.4455E-02	9.5317E-06	.0000E+00	.0000E+00
11023.50C	88424	5.8781E+00	3.1056E-03	.0000E+00	.0000E+00
12000.50C	6531	4.7909E-01	1.1302E-04	.0000E+00	.0000E+00
13027.50C	9853	7.3929E-01	7.0617E-04	.0000E+00	.0000E+00
14000.50C	78839	5.8240E+00	6.5811E-03	.0000E+00	.0000E+00
15031.50C	112	7.1473E-03	1.5881E-05	.0000E+00	.0000E+00
16032.50C	369	2.8061E-02	2.7236E-04	.0000E+00	.0000E+00
17000.50C	323	2.2660E-02	1.7153E-04	.0000E+00	.0000E+00
19000.50C	7063	5.0702E-01	6.3871E-03	.0000E+00	.0000E+00
20000.50C	1396	1.0007E-01	1.0564E-03	.0000E+00	.0000E+00
22000.50C	6710	4.5090E-01	5.4741E-04	.0000E+00	.0000E+00
24000.50C	17054	1.1391E+00	4.8177E-03	.0000E+00	.0000E+00
25055.50C	30885	1.8715E+00	1.2930E-02	.0000E+00	.0000E+00
26000.55C	73202	4.9307E+00	1.5362E-02	.0000E+00	.0000E+00
28000.50C	20777	1.3605E+00	3.9435E-03	.0000E+00	.0000E+00
29000.50C	783	5.2661E-02	7.4950E-04	.0000E+00	.0000E+00
47109.50C	180	1.2547E-02	1.4243E-03	.0000E+00	.0000E+00
56138.50C	153	1.0893E-02	1.2026E-05	.0000E+00	.0000E+00
62149.50C	5	3.3643E-04	9.9361E-05	.0000E+00	.0000E+00
82000.50C	81	5.6253E-03	2.0976E-06	.0000E+00	.0000E+00
90232.50C	358	2.3867E-02	1.4131E-03	2.3375E-05	.0000E+00
92233.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C	3	1.8460E-04	8.3473E-06	1.9617E-07	.0000E+00
92235.50C	36	2.7760E-03	1.7658E-04	5.0390E-04	.0000E+00
92236.50C	2	1.8178E-04	5.3281E-06	4.7210E-08	.0000E+00
92238.50C	7817	5.3608E-01	2.3825E-02	2.3276E-03	.0000E+00
93237.55C	2	9.6913E-05	2.1991E-05	7.5191E-08	.0000E+00
94238.50C	18	1.3378E-03	9.9836E-05	9.5907E-05	.0000E+00
94239.55C	20	1.8146E-03	1.4343E-04	2.1634E-04	.0000E+00
94240.50C	8	5.9719E-04	4.5971E-05	2.2541E-05	.0000E+00
94241.50C	0	4.2436E-05	.0000E+00	.0000E+00	.0000E+00
94242.50C	0	5.4950E-07	.0000E+00	.0000E+00	.0000E+00
95241.50C	0	1.4758E-06	.0000E+00	.0000E+00	.0000E+00
95242.50C	0	7.4865E-09	.0000E+00	.0000E+00	.0000E+00
95243.50C	0	7.5644E-08	.0000E+00	.0000E+00	.0000E+00
96245.35C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE RUNTPJ NPS = 12048 CTM = 9.52

18 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

COMPUTER TIME = 9.60 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 16:44:58

PROBID = 12/01/95 16:35:12

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 16:09:24

 INP=DHLWG3 OUTP=DHLWG3.0

PROBID = 12/01/95 16:09:24

```

1-   DHLWG3-- DWPFG GLASS INFINITE ARRAY DRY - FISSILE X 100
2-   C      1      2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   C      2 -1.-4 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   C      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   C      2 -1.-4 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   C      1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   C      3 -7.9 -1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  C      3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  C      2 -1.-4 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  C      2 -1.-4 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10 4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11 4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12 2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13 5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14 5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15 2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16 2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17 0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15*  PX -100.74
38-  C      16*  PX 100.74
39-  C      17*  PY -100.74
40-  C      18*  PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      M5      25055.50C -0.10 26000.55C -0.70      28000.50C -31.000
WARNING. MATERIAL 5 IS NOT USED IN THE PROBLEM.
60-      M5      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      M4      6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
WARNING. MATERIAL 4 IS NOT USED IN THE PROBLEM.
63-      M4      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      M4      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      M4      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3      6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      M3      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      M3      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2      1001.50C 2.0 8016.50C 1.0
71-      MT2     LWTR.01T
72-      M1      3006.50C -1.080-1 3007.55C -1.332 5010.50C -6.234-1 $ DHLW GLASS
73-      M1      5011.56C -2.509 8016.50C -4.4102+1 9019.50C -3.108-2
74-      M1      11023.50C -8.233 12000.50C -8.046-1 13027.50C -2.057
75-      M1      14000.50C -2.1967+1 16032.50C -1.263-1 19000.50C -2.916
76-      M1      20000.50C -6.458-1 22000.50C -5.823-1 25055.50C -1.520
77-      M1      26000.55C -7.211 28000.50C -7.170-1 15031.50C -1.372-2
78-      M1      24000.50C -8.055-2 29000.50C -1.489-1 47109.50C -4.906-2
79-      M1      56138.50C -8.083-2 82000.50C -5.948-2 17000.50C -1.131-1
80-      M1      90232.50C -1.811-1 62149.50C -4.411-4 92233.50C -9.727-9
81-      M1      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
82-      M1      92235.50C -1.734 92238.50C -3.674 94238.50C -5.153-3
83-      M1      94239.55C -1.234 94240.50C -2.265-3 94241.50C -9.631-4
84-      M1      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
85-      M1      95243.50C -1.725-6 96245.35C -2.325-9
86-      PRINT
87-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS      507
POINTS NOT IN ANY CELL        0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS          0
POINTS IN AMBIGUOUS CELLS      0
TOTAL POINTS REJECTED          0
POINTS REMAINING                507
POINTS AFTER EXPANSION OR CONTRACTION 502
NOMINAL SOURCE SIZE            500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

```

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02
THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00
THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 1.028655E+02

```

MATERIAL
NUMBER COMPONENT NUCLIDE, ATOM FRACTION

3	6000, .00137	7014, .00390	14000, .01460	15031, .00079
	16032, .00051	24000, .19975	25055, .01990	26000, .66604
	28000, .09314			
2	1001, .66667	8016, .33333		
ASSOCIATED THERMAL S(A,B) DATA SETS:		LWTR.01T		
1	3006, .00373	3007, .03939	5010, .01292	5011, .04728
	8016, .57205	9019, .00034	11023, .07430	12000, .00687
	13027, .01582	14000, .16227	16032, .00082	19000, .01547
	20000, .00334	22000, .00252	25055, .00574	26000, .02679
	28000, .00253	15031, .00009	24000, .00032	29000, .00049
	47109, .00009	56138, .00012	82000, .00006	17000, .00066
	90232, .00016	62149, .00000	92233, .00000	92234, .00000
	92236, .00000	93237, .00000	92235, .00153	92238, .00320
	94238, .00000	94239, .00107	94240, .00000	94241, .00000
	94242, .00000	95241, .00000	95242, .00000	95243, .00000
	96245, .00000			

MATERIAL
NUMBER COMPONENT NUCLIDE, MASS FRACTION

3	6000, .00030	7014, .00100	14000, .00750	15031, .00045
	16032, .00030	24000, .19000	25055, .02000	26000, .68045
	28000, .10000			
2	1001, .11191	8016, .88809		
1	3006, .00105	3007, .01295	5010, .00606	5011, .02439
	8016, .42873	9019, .00030	11023, .08004	12000, .00782
	13027, .02000	14000, .21355	16032, .00123	19000, .02835
	20000, .00628	22000, .00566	25055, .01478	26000, .07010
	28000, .00697	15031, .00013	24000, .00078	29000, .00145
	47109, .00048	56138, .00079	82000, .00058	17000, .00110
	90232, .00176	62149, .00000	92233, .00000	92234, .00000
	92236, .00001	93237, .00001	92235, .01686	92238, .03572
	94238, .00005	94239, .01200	94240, .00002	94241, .00001
	94242, .00000	95241, .00000	95242, .00000	95243, .00000
	96245, .00000			

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1	2 1.00309E-05	1.00000E-04	.00000E+00	2.51903E+06	2.51903E+02	0	
2	3 .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3	4 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4	5 8.04191E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5	6 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6	7 8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7	8 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8	9 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
---------	---------------	--------------------	-------------------------------

1	1	.00000E+00	.00000E+00	INFINITE
2	2	.00000E+00	1.63839E+04	
3	3	.00000E+00	2.91864E+03	
4	4	.00000E+00	.00000E+00	INFINITE
5	5	.00000E+00	.00000E+00	INFINITE
6	6	.00000E+00	.00000E+00	INFINITE
7	7	.00000E+00	.00000E+00	INFINITE
8	8	.00000E+00	.00000E+00	INFINITE
9	9	.00000E+00	1.96800E+04	
10	10	.00000E+00	1.96800E+04	
11	11	.00000E+00	1.96800E+04	
12	12	.00000E+00	1.96800E+04	
13	13	.00000E+00	.00000E+00	NOT A BOUNDARY
14	14	.00000E+00	.00000E+00	INFINITE
15	19	.00000E+00	.00000E+00	NOT A BOUNDARY
16	20	.00000E+00	1.63839E+04	
17	21	.00000E+00	.00000E+00	NOT A BOUNDARY
18	22	.00000E+00	.00000E+00	NOT A BOUNDARY
19	23	.00000E+00	.00000E+00	NOT A BOUNDARY
20	24	.00000E+00	.00000E+00	NOT A BOUNDARY
21	25	.00000E+00	.00000E+00	NOT A BOUNDARY

1CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-05	1.00000E-04	2.51903E+06	2.51903E+02	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.04191E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
TOTAL				2.52367E+06	3.68552E+04		

1SURFACES

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2 REFL.	PZ	.0000000E+00
3	3	PZ	1.3713000E+02
4	4	PZ	1.3871750E+02
5	5	PX	-3.2000000E+01
6	6	PX	3.2000000E+01
7	7	PY	-3.2000000E+01
8	8	PY	3.2000000E+01
9	9 REFL.	PX	-6.3999900E+01
10	10 REFL.	PX	6.3999900E+01
11	11 REFL.	PY	-6.3999900E+01
12	12 REFL.	PY	6.3999900E+01
13	13	CZ	7.8450000E+01
14	14	CZ	3.0480000E+01
15	19	CZ	8.0450000E+01
16	20	PZ	1.5375000E+02
17	21	PZ	1.5625000E+02
18	22	CZ	8.5450000E+01
19	23	PZ	1.6250000E+02
20	24	PZ	1.7100000E+02

21 25 PZ 2.0148000E+02

WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
 1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL	TMP 1
2	2.5300E-08
4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

10 WARNING MESSAGES SO FAR.
 1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE LENGTH

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY
3006.50C	6551	NJOY
3007.55C	11053	NJOY
5010.50C	9587	NJOY
6000.50C	16126	NJOY
7014.50C	22772	NJOY
8016.50C	23669	NJOY
13027.50C	22891	NJOY
24000.50C	89104	NJOY
26000.55C	84136	NJOY
28000.50C	82267	NJOY
29000.50C	22473	NJOY
56138.50C	2479	NJOY
82000.50C	28695	NJOY
92233.50C	14205	NJOY
92235.50C	44188	NJOY
92238.50C	66440	NJOY
94239.55C	67551	NJOY
94240.50C	42744	NJOY

(1301)	79/07/31.
(1303)	79/08/01.
(3007)	07/29/82
(1305)	79/09/10.
(1306)	79/07/31.
(1275)	79/09/08.
(1276)	05/14/81
(1313)	79/09/08.
(1324)	79/06/21.
(260)	10/21/82
(1328)	79/06/21.
(1329)	02/05/80
(1353)	79/06/21.
(1382)	03/10/82
(1393)	79/09/12.
(1395)	79/09/12.
(1398)	79/09/13.
(1399)	02/21/85
(1380)	79/09/13.

TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU

TABLES FROM FILE NEWXS2

5011.56C 28379

06/28/88

TABLES FROM FILE ENDF5P2

9019.50C 20657 NJOY
 11023.50C 36270 NJOY
 14000.50C 48275 NJOY
 17000.50C 12269 NJOY

(1309) 79/06/22.
 (1311) 79/06/21.
 (1314) 79/06/21.
 (1149) 79/10/29.

WARNING. NUBAR OF 92234.50C MAY BE EITHER PROMPT OR TOTAL.
 92234.50C 76999 NJOY

(1394) 79/10/17.

WARNING. NUBAR OF 92236.50C MAY BE EITHER PROMPT OR TOTAL.
 92236.50C 119238 NJOY

(1396) 79/08/30.

WARNING. NUBAR OF 94238.50C MAY BE EITHER PROMPT OR TOTAL.
 94238.50C 16458 NJOY
 94241.50C 22523 NJOY
 94242.50C 43433 NJOY

TOTAL NU
 TOTAL NU

(1338) 79/09/12.
 (1381) 79/08/30.
 (1342) 79/09/06.

TABLES FROM FILE ENDF5U2

12000.50C 39283 NJOY
 15031.50C 2779 NJOY
 16032.50C 2684 NJOY
 19000.50C 9766 NJOY
 20000.50C 26104 NJOY
 22000.50C 25231 NJOY
 25055.50C 60097 NJOY
 62149.50C 11116 NJOY
 90232.50C 95614 NJOY

TOTAL NU

(1312) 79/08/30.
 (1315) 79/10/29.
 (1316) 79/10/29.
 (1150) 79/10/29.
 (1320) 79/06/22.
 (1322) 79/06/21.
 (1325) 79/06/21.
 (1319) 02/12/85
 (1390) 07/10/80

WARNING. NUBAR OF 95241.50C MAY BE EITHER PROMPT OR TOTAL.
 95241.50C 29300 NJOY

(1361) 79/08/29.

WARNING. NUBAR OF 95242.50C MAY BE EITHER PROMPT OR TOTAL.
 95242.50C 5248 NJOY

(1369) 79/09/24.

WARNING. NUBAR OF 95243.50C MAY BE EITHER PROMPT OR TOTAL.
 95243.50C 51474 NJOY

(1363) 79/08/30.

TABLES FROM FILE RMCCSA2

47109.50C 10147 NJOY
 93237.55C 29142 NJOY

TOTAL NU

(1373) 11/01/85
 (1337) 04/04/85

TABLES FROM FILE ENDL852

WARNING. NUBAR OF 96245.35C MAY BE EITHER PROMPT OR TOTAL.
 96245.35C 15310 ZA=96245 ENDL-85 85/04/24 T=OK

(93) 86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T 10193 HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN

1001 0 010/22/85

TOTAL 1506073

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
 1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL 66794
 TALLIES 0

BANK 12403
 CROSS SECTIONS 1506073
 TOTAL 1585270

 DUMP NO. 1 ON FILE RUNTPH NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

18 WARNING MESSAGES SO FAR.
 1 STARTING MCRUN. FIELD LENGTH = 0 CPO = .05

PRINT TABLE 110

DHLWG3-- DWPF GLASS INFINITE ARRAY DRY - FISSILE X 100

NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	-6.264E+00	5.591E+00	5.388E+01	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	9.960E-01	9.361E-01
2	-3.528E+00	1.109E+01	6.183E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	9.960E-01	7.857E-01
3	1.038E+01	1.610E+01	7.435E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	9.960E-01	1.643E+00
4	1.068E+01	1.613E+01	7.407E+01	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	9.960E-01	2.062E+00
5	4.344E+00	4.710E+00	5.528E+01	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	9.960E-01	1.585E+00
6	-2.228E-01	2.951E+01	2.068E+01	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	9.960E-01	1.452E+00
7	-1.918E+01	9.677E+00	8.957E+00	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	9.960E-01	1.125E+00
8	-1.643E+01	-8.845E+00	1.862E+01	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	9.960E-01	3.844E+00
9	-2.779E+01	-9.620E+00	1.311E+01	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	9.960E-01	2.533E+00
10	1.373E+01	-1.377E+01	8.409E+00	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	9.960E-01	1.839E+00
11	5.349E+00	1.781E+01	3.218E+01	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	9.960E-01	2.569E+00
12	2.488E+00	1.790E+01	3.281E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	9.960E-01	4.123E-01
13	5.388E+00	1.609E+01	3.853E+01	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	9.960E-01	6.927E-01
14	4.915E+00	1.604E+01	4.199E+01	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	9.960E-01	1.304E+00
15	4.824E+00	1.750E+01	3.701E+01	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	9.960E-01	6.603E+00
16	4.386E+00	2.093E+01	3.737E+01	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	9.960E-01	6.197E-01
17	6.219E+00	2.289E+01	4.039E+01	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	9.960E-01	3.542E+00
18	1.064E+01	2.447E+01	3.886E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	9.960E-01	3.678E+00
19	1.500E+01	-3.535E+00	2.339E+01	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	9.960E-01	2.351E+00
20	-6.494E-01	-7.495E+00	4.643E+00	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	9.960E-01	3.848E+00
21	-4.103E+00	-7.439E+00	6.573E+00	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	9.960E-01	1.558E-01
22	4.998E-01	1.536E+01	3.700E+00	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	9.960E-01	7.770E-01
23	1.027E+01	2.001E+00	3.554E+00	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	9.960E-01	2.900E+00
24	5.132E+00	-2.873E+01	1.002E+01	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	9.960E-01	4.831E-01
25	7.393E+00	-1.011E+01	1.294E+01	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	9.960E-01	5.955E-01
26	1.160E+01	-1.736E+00	7.832E+00	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	9.960E-01	2.069E+00
27	6.838E+00	-2.200E+01	2.229E+00	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	9.960E-01	4.596E+00
28	1.151E+01	-2.569E+01	3.592E+00	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	9.960E-01	3.459E+00
29	6.862E+00	-1.905E+01	8.746E+00	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	9.960E-01	1.923E+00
30	6.392E+00	-1.952E+01	6.612E+00	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	9.960E-01	2.444E+00
31	1.118E+01	-1.757E+01	5.791E+00	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	9.960E-01	2.854E+00
32	-6.760E+00	-2.378E+01	3.545E-01	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	9.960E-01	1.187E+00
33	-6.756E+00	-2.327E+01	1.037E-01	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	9.960E-01	3.209E+00
34	-4.818E+00	-2.737E+01	2.189E+00	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	9.960E-01	4.621E+00
35	-1.477E-01	-1.959E+01	3.971E+00	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	9.960E-01	8.288E-01
36	2.881E+01	6.147E+00	3.748E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	9.960E-01	9.473E-01
37	-1.206E+01	-4.563E+00	2.463E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	9.960E-01	6.611E-01
38	-2.190E+01	8.395E+00	3.472E+01	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	9.960E-01	4.676E-01
39	-1.629E+01	1.035E+01	1.263E+01	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	9.960E-01	2.497E-01
40	-6.315E+00	-2.881E+01	1.299E+02	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	9.960E-01	1.344E+00
41	2.933E+01	1.639E+00	2.434E+01	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	9.960E-01	5.025E+00

42	-1.917E-01	2.923E+01	1.356E+01	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	9.960E-01	5.080E+00
43	-6.922E+00	-5.244E-01	3.527E+00	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	9.960E-01	6.345E-01
44	-7.456E+00	-2.420E+00	4.689E+00	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	9.960E-01	2.333E+00
45	1.994E+01	1.299E+01	7.056E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	9.960E-01	3.911E+00
46	1.482E-01	9.425E+00	5.909E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	9.960E-01	1.650E+00
47	2.910E+01	-3.475E+00	8.612E+01	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	9.960E-01	2.222E+00
48	1.069E+01	-6.677E+00	7.337E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	9.960E-01	1.750E+00
49	-8.515E+00	-3.224E+00	7.175E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	9.960E-01	3.659E+00
50	1.908E+00	-2.750E+01	6.466E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	9.960E-01	1.909E+00

CYCLE 1 K(COLLISION) .215824 REMOVAL LIFETIME(ABS) 1.1699E+02 SOURCE POINTS GENERATED 3627
 WARNING. WEIGHT OF SOURCE PARTICLE IS BELOW CUTOFF.
 NPS = 503 IJK = 46069157077329 WGT = 1.37855E-01

CYCLE 2 K(COLLISION) .212499 REMOVAL LIFETIME(ABS) 1.1737E+02 SOURCE POINTS GENERATED 438
 CYCLE 3 K(COLLISION) .209436 REMOVAL LIFETIME(ABS) 1.2615E+02 SOURCE POINTS GENERATED 472
 CYCLE 4 K(COLLISION) .205754 REMOVAL LIFETIME(ABS) 1.2143E+02 SOURCE POINTS GENERATED 465
 CYCLE 5 K(COLLISION) .207800 REMOVAL LIFETIME(ABS) 1.0917E+02 SOURCE POINTS GENERATED 475

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .209553 REMOVAL LIFETIME(ABS) 1.1886E+02 SOURCE POINTS GENERATED 532

ESTIMATOR	CYCLE	AVE OF	2 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.201163	.205358	.0204	K(COL/ABS)	.000000 .0000	.000000 .0000	.0000
K(ABSORPTION)	.222722	.211807	.0515	K(ABS/TK LN)	.000000 .0000	.000000 .0000	.0000
K(TRK LENGTH)	.203945	.207576	.0175	K(TK LN/COL)	.000000 .0000	.000000 .0000	.0000
REM LIFE(COL)	1.1134E+02	1.1717E+02	.0498				
REM LIFE(ABS)	1.1731E+02	1.1808E+02	.0066	LIFE(COL/ABS)	.0000E+00 .0000	.0000E+00 .0000	.0000
SOURCE POINTS GENERATED	481						

ESTIMATOR	CYCLE	AVE OF	3 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.202527	.204414	.0127	K(COL/ABS)	.204781 .0208	.204520 .0146	-.3767
K(ABSORPTION)	.191827	.205147	.0447	K(ABS/TK LN)	.205748 .0217	.206218 .0149	-.2264
K(TRK LENGTH)	.203896	.206349	.0118	K(TK LN/COL)	.205382 .0122	.209845 .0323	.9876
REM LIFE(COL)	1.1288E+02	1.1574E+02	.0316				
REM LIFE(ABS)	1.2001E+02	1.1873E+02	.0066	LIFE(COL/ABS)	1.1723E+02 .0166	1.1872E+02 .0098	.2054
SOURCE POINTS GENERATED	494						

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 8

ESTIMATOR	CYCLE	AVE OF	4 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.198894	.203034	.0113	K(COL/ABS)	.202382 .0190	.202922 .0133	.0134
K(ABSORPTION)	.191480	.201730	.0363	K(ABS/TK LN)	.202833 .0212	.203804 .0177	.2638
K(TRK LENGTH)	.196695	.203936	.0145	K(TK LN/COL)	.203485 .0128	.202130 .0126	.9471
REM LIFE(COL)	1.0561E+02	1.1321E+02	.0320	K(COL/ABS/TK LN)	.202900 .0158	.201093 .0145	
REM LIFE(ABS)	1.1088E+02	1.1676E+02	.0175	LIFE(COL/ABS)	1.1499E+02 .0229	1.1735E+02 .0224	.7131
SOURCE POINTS GENERATED	498						

ESTIMATOR	CYCLE	AVE OF	5 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.192723	.200972	.0136	K(COL/ABS)	.200881 .0166	.200945 .0148	.1323
K(ABSORPTION)	.197030	.200790	.0287	K(ABS/TK LN)	.201271 .0183	.201616 .0176	.3011
K(TRK LENGTH)	.193014	.201751	.0157	K(TK LN/COL)	.201362 .0145	.199930 .0146	.9702
REM LIFE(COL)	9.7006E+01	1.0997E+02	.0390	K(COL/ABS/TK LN)	.201171 .0150	.199037 .0150	
REM LIFE(ABS)	1.0661E+02	1.1473E+02	.0224	LIFE(COL/ABS)	1.1235E+02 .0297	1.1743E+02 .0238	.8834
SOURCE POINTS GENERATED	462						

ESTIMATOR	CYCLE	11	AVE OF	6 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.205946		.201801	.0118	K(COL/ABS)	.201547 .0139	.201721 .0124	.1604
K(ABSORPTION)	.203804		.201292	.0235	K(ABS/TK LN)	.201917 .0152	.202353 .0144	.3174
K(TRK LENGTH)	.206495		.202542	.0134	K(TK LN/COL)	.202172 .0125	.200864 .0125	.9715
REM LIFE(COL)	1.1869E+02		1.1142E+02	.0340	K(COL/ABS/TK LN)	.201878 .0127	.199880 .0129	
REM LIFE(ABS)	1.1994E+02		1.1560E+02	.0197	LIFE(COL/ABS)	1.1351E+02 .0261	1.1830E+02 .0189	.9005
SOURCE POINTS GENERATED 541								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 11

ESTIMATOR	CYCLE	12	AVE OF	7 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.204900		.202244	.0102	K(COL/ABS)	.203173 .0142	.202380 .0110	.2521
K(ABSORPTION)	.220967		.204103	.0239	K(ABS/TK LN)	.203490 .0149	.202962 .0124	.3402
K(TRK LENGTH)	.204886		.202877	.0114	K(TK LN/COL)	.202560 .0107	.201555 .0107	.9699
REM LIFE(COL)	1.0811E+02		1.1095E+02	.0292	K(COL/ABS/TK LN)	.203075 .0122	.201580 .0123	
REM LIFE(ABS)	1.1309E+02		1.1524E+02	.0170	LIFE(COL/ABS)	1.1310E+02 .0224	1.1806E+02 .0160	.9025
SOURCE POINTS GENERATED 457								

ESTIMATOR	CYCLE	13	AVE OF	8 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.211736		.203430	.0105	K(COL/ABS)	.203434 .0123	.203432 .0106	.1211
K(ABSORPTION)	.198785		.203438	.0210	K(ABS/TK LN)	.203534 .0129	.203607 .0110	.2599
K(TRK LENGTH)	.208898		.203630	.0105	K(TK LN/COL)	.203530 .0104	.203531 .0112	.9506
REM LIFE(COL)	1.2220E+02		1.1236E+02	.0279	K(COL/ABS/TK LN)	.203499 .0108	.203418 .0117	
REM LIFE(ABS)	1.2265E+02		1.1617E+02	.0166	LIFE(COL/ABS)	1.1426E+02 .0218	1.1914E+02 .0144	.9229
SOURCE POINTS GENERATED 519								

ESTIMATOR	CYCLE	14	AVE OF	9 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.212425		.204430	.0104	K(COL/ABS)	.203723 .0109	.204108 .0100	.0544
K(ABSORPTION)	.199644		.203017	.0187	K(ABS/TK LN)	.203691 .0114	.204143 .0100	.2003
K(TRK LENGTH)	.210254		.204366	.0099	K(TK LN/COL)	.204398 .0101	.204363 .0106	.9527
REM LIFE(COL)	1.1524E+02		1.1268E+02	.0247	K(COL/ABS/TK LN)	.203937 .0097	.204126 .0108	
REM LIFE(ABS)	1.1566E+02		1.1611E+02	.0147	LIFE(COL/ABS)	1.1439E+02 .0192	1.1856E+02 .0129	.9124
SOURCE POINTS GENERATED 508								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 14

ESTIMATOR	CYCLE	15	AVE OF	10 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.213576		.205344	.0103	K(COL/ABS)	.204424 .0103	.204882 .0098	.1099
K(ABSORPTION)	.207889		.203504	.0169	K(ABS/TK LN)	.204341 .0107	.204867 .0097	.2390
K(TRK LENGTH)	.212481		.205177	.0097	K(TK LN/COL)	.205261 .0099	.205129 .0102	.9608
REM LIFE(COL)	1.1302E+02		1.1271E+02	.0221	K(COL/ABS/TK LN)	.204675 .0094	.204878 .0105	
REM LIFE(ABS)	1.1277E+02		1.1578E+02	.0135	LIFE(COL/ABS)	1.1424E+02 .0173	1.1757E+02 .0126	.8881
SOURCE POINTS GENERATED 529								

ESTIMATOR	CYCLE	16	AVE OF	11 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.215146		.206235	.0102	K(COL/ABS)	.204722 .0094	.205316 .0092	.0591
K(ABSORPTION)	.200249		.203208	.0153	K(ABS/TK LN)	.204588 .0097	.205302 .0092	.1794
K(TRK LENGTH)	.213880		.205968	.0095	K(TK LN/COL)	.206102 .0098	.205823 .0099	.9672
REM LIFE(COL)	1.2381E+02		1.1372E+02	.0217	K(COL/ABS/TK LN)	.205137 .0088	.205314 .0100	
REM LIFE(ABS)	1.2158E+02		1.1630E+02	.0129	LIFE(COL/ABS)	1.1501E+02 .0169	1.1800E+02 .0113	.9024
SOURCE POINTS GENERATED 548								

ESTIMATOR	CYCLE	17	AVE OF	12 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.195846		.205370	.0103	K(COL/ABS)	.203601 .0103	.204457 .0099	.2268
K(ABSORPTION)	.186694		.201832	.0157	K(ABS/TK LN)	.203506 .0104	.204557 .0096	.3233
K(TRK LENGTH)	.196497		.205179	.0095	K(TK LN/COL)	.205274 .0098	.205032 .0098	.9726
REM LIFE(COL)	1.0100E+02		1.1266E+02	.0221	K(COL/ABS/TK LN)	.204127 .0094	.204570 .0106	
REM LIFE(ABS)	1.0487E+02		1.1535E+02	.0145	LIFE(COL/ABS)	1.1401E+02 .0179	1.1731E+02 .0131	.9136
SOURCE POINTS GENERATED 428								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 17

ESTIMATOR	CYCLE	18	AVE OF	13	CYCLES
K(COLLISION)		.211338		.205829	.0097
K(ABSORPTION)		.224270		.203558	.0166
K(TRK LENGTH)		.208581		.205441	.0089
REM LIFE(COL)	1.1476E+02		1.1282E+02		.0204
REM LIFE(ABS)	1.1600E+02		1.1540E+02		.0133
SOURCE POINTS	GENERATED	537			

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204693	.0108	.205443	.0097	.3071
K(ABS/TK LN)	.204499	.0107	.205231	.0091	.3486
K(TK LN/COL)	.205635	.0092	.205107	.0090	.9698
K(COL/ABS/TK LN)	.204942	.0095	.204977	.0096	
LIFE(COL/ABS)	1.1411E+02	.0165	1.1727E+02	.0120	.9131

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES
K(COLLISION)		.206375		.205868	.0090
K(ABSORPTION)		.197520		.203127	.0156
K(TRK LENGTH)		.205703		.205459	.0082
REM LIFE(COL)		1.0963E+02		1.1259E+02	.0190
REM LIFE(ABS)		1.1398E+02		1.1530E+02	.0124
SOURCE POINTS	GENERATED		463		

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204497	.0101	.205408	.0090	.3013
K(ABS/TK LN)	.204293	.0099	.205204	.0084	.3438
K(TK LN/COL)	.205664	.0085	.205109	.0083	.9698
K(COL/ABS/TK LN)	.204818	.0088	.204944	.0089	
LIFE(COL/ABS)	1.1395E+02	.0153	1.1726E+02	.0111	.9132

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES
K(COLLISION)		.210571		.206181	.0085
K(ABSORPTION)		.210534		.203621	.0147
K(TRK LENGTH)		.210527		.205797	.0078
REM LIFE(COL)		1.2277E+02		1.1327E+02	.0186
REM LIFE(ABS)		1.2355E+02		1.1585E+02	.0124
SOURCE POINTS	GENERATED	541			

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204901	.0096	.205770	.0085	.3220
K(ABS/TK LN)	.204709	.0095	.205574	.0080	.3663
K(TK LN/COL)	.205989	.0081	.205485	.0079	.9704
K(COL/ABS/TK LN)	.205200	.0084	.205343	.0085	
LIFE(COL/ABS)	1.1456E+02	.0152	1.1788E+02	.0110	.9220

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 20

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES
K(COLLISION)		.213891		.206663	.0083
K(ABSORPTION)		.176714		.201939	.0161
K(TRK LENGTH)		.215147		.206382	.0078
REM LIFE(COL)		1.2140E+02		1.1378E+02	.0179
REM LIFE(ABS)		1.2101E+02		1.1617E+02	.0119
SOURCE POINTS	GENERATED		.540		

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204301	.0094	.205792	.0080	.1189
K(ABS/TK LN)	.204160	.0093	.205633	.0076	.1051
K(TK LN/COL)	.206522	.0080	.206263	.0080	.9699
K(COL/ABS/TK LN)	.204995	.0079	.205498	.0083	
LIFE(COL/ABS)	1.1498E+02	.0146	1.1815E+02	.0103	.9264

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES
K(COLLISION)		.207619		.206719	.0078
K(ABSORPTION)		.210117		.202420	.0153
K(TRK LENGTH)		.209609		.206572	.0074
REM LIFE(COL)	1.	1.274E+02	1.	1.372E+02	.0168
REM LIFE(ABS)	1.	1.1670E+02	1.	1.1620E+02	.0112
SOURCE POINTS	GENERATED		490		

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204570	.0089	.205949	.0075	.1228
K(ABS/TK LN)	.204496	.0088	.205899	.0072	.1223
K(TK LN/COL)	.206645	.0075	.206538	.0076	.9661
K(COL/ABS/TK LN)	.205237	.0075	.205866	.0078	
LIFE(COL/ABS)	1.1496E+02	.0137	1.1823E+02	.0097	.9249

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES
K(COLLISION)		.211113		.206963	.0074
K(ABSORPTION)		.210244		.202855	.0146
K(TRK LENGTH)		.212183		.206883	.0071
REM LIFE(COL)	1.2187E+02		1.1417E+02		.0163
REM LIFE(ABS)	1.1614E+02		1.1620E+02		.0106
SOURCE POINTS	GENERATED	518			

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.204909	.0086	.206249	.0072	.1434
K(ABS/TK LN)	.204869	.0085	.206248	.0069	.1494
K(TK LN/COL)	.206923	.0072	.206876	.0073	.9659
K(COL/ABS/TK LN)	.205567	.0073	.206242	.0075	
LIFE(COL/ABS)	1.1519E+02	.0130	1.1745E+02	.0096	.8964

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 23

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES
K(COLLISION)		.213701		.207318	.0072
K(ABSORPTION)		.213859		.203434	.0140
K(TRK LENGTH)		.210675		.207083	.0068
REM LIFE(COL)	1.	2.184E+02	1.	1.457E+02	.0157
REM LIFE(ABS)	1.	1.751E+02	1.	1.627E+02	.0100

COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COL/ABS)	.205376	.0084	.206682	.0070	.1846
K(ABS/TK LN)	.205258	.0083	.206548	.0067	.1737
K(TK LN/COL)	.207200	.0069	.207021	.0070	.9625
K(COL/ABS/TK LN)	.205945	.0071	.206471	.0072	
LIFE(COL/ABS)	1.1542E+02	.0125	1.1723E+02	.0091	.8853

SOURCE POINTS GENERATED 500

ESTIMATOR	CYCLE	25	AVE OF	20	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.212322		.207568	.0069		K(COL/ABS)	.205568 .0080	.206900 .0068	.1902
K(ABSORPTION)	.206127		.203568	.0133		K(ABS/TK LN)	.205436 .0079	.206748 .0064	.1792
K(TRK LENGTH)	.211486		.207303	.0065		K(TK LN/COL)	.207436 .0067	.207222 .0067	.9635
REM LIFE(COL)	1.1372E+02		1.1453E+02	.0149		K(COL/ABS/TK LN)	.206147 .0068	.206649 .0069	
REM LIFE(ABS)	1.1955E+02		1.1643E+02	.0096		LIFE(COL/ABS)	1.1548E+02 .0118	1.1738E+02 .0089	.8717
SOURCE POINTS GENERATED	488								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 25
1 PROBLEM SUMMARY

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

DHLWG3-- DWPf GLASS INFINITE ARRAY DRY - FISSILE X 100

PROBID = 12/01/95 16:19:26
12/01/95 16:09:24

NEUTRON CREATION	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY	NEUTRON LOSS	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY
SOURCE	15565	8.0308E-01	2.0750E+00	ESCAPE	1401	7.0762E-02	4.4117E-02
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	8.7610E-02	5.6959E-02	WEIGHT CUTOFF	14165	8.7714E-02	6.0597E-02
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	0.	DOWNSCATTERING	0	0.	1.8653E+00
(N,XN)	2	4.5517E-05	5.4242E-05	CAPTURE	0	6.6978E-01	1.3324E-01
FISSION	0	0.	0.	LOSS TO (N,XN)	1	2.2759E-05	2.3424E-04
TOTAL	15567	8.9074E-01	2.1320E+00	LOSS TO FISSION	0	6.2462E-02	2.8559E-02
				TOTAL	15567	8.9074E-01	2.1320E+00

NUMBER OF NEUTRONS BANKED 1
 NEUTRON TRACKS PER SOURCE PARTICLE 1.0001E+00
 NEUTRON COLLISIONS PER SOURCE PARTICLE 5.3988E+01
 TOTAL NEUTRON COLLISIONS 840329
 NET MULTIPLICATION 1.0000E+00 .0037

AVERAGE LIFETIME, SHAKES
 ESCAPE 7.8207E+01
 CAPTURE 1.2053E+02
 CAPTURE OR ESCAPE 1.1680E+02
 ANY TERMINATION 1.1467E+02

CUTOFFS
 TCO 1.0000E+34
 ECO .0000E+00
 WC1 -5.0000E-01
 WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 10.00 MINUTES
 COMPUTER TIME IN MCRUN 9.95 MINUTES
 SOURCE PARTICLES PER MINUTE 1.5643E+03
 RANDOM NUMBERS GENERATED 8160967

MAXIMUM NUMBER EVER IN BANK 1
 BANK OVERFLOWS TO BACKUP FILE 0
 FIELD LENGTH 0
 MOST RANDOM NUMBERS USED WAS 1486 IN HISTORY 7010

RANGE OF SAMPLED SOURCE WEIGHTS = 1.3785E-01 TO 1.1682E+00

3627 SOURCE PARTICLES HAD WEIGHT BELOW CUTOFF.
 1 WARNING. THE FOLLOWING CELLS ARE BOUNDED BY CELLS WITH NEUTRON IMPORTANCES
 THAT MAY BE A FACTOR OF FOUR OR MORE DIFFERENT.

PRINT TABLE 120

CELL	IMPORTANCE	MAXIMUM NEIGHBOR	IMPORTANCE	RATIO	MINIMUM NEIGHBOR	IMPORTANCE	RATIO
------	------------	---------------------	------------	-------	---------------------	------------	-------

9 NO DATA AVAILABLE YET FOR THIS CELL.
 1 NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

TRACKS	POPULATION	COLLISIONS	COLLISIONS	NUMBER	FLUX	AVERAGE	AVERAGE
--------	------------	------------	------------	--------	------	---------	---------

CELL	ENTERING				* WEIGHT (PER HISTORY)	WEIGHTED ENERGY	WEIGHTED ENERGY	TRACK WEIGHT (RELATIVE)	TRACK MFP (CM)
1	2	0	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	54959	15566	753856	3.7128E+01	6.9487E-02	4.8669E-01	7.8333E-01	3.6415E+00
5	6	79931	10177	85090	3.9564E+00	6.2666E-02	4.4190E-01	7.8187E-01	2.9228E+00
6	7	885	717	1274	5.9345E-02	7.7272E-02	5.0898E-01	7.8747E-01	3.0261E+00
7	8	67376	9586	105	4.8606E-03	6.2799E-02	4.4724E-01	7.8186E-01	1.5018E+04
8	9	1705	1401	4	1.6604E-04	8.1984E-02	4.8542E-01	7.9675E-01	1.5793E+04

TOTAL 204856 37447 840329 4.1149E+01
 1NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-7.0762E-02	-7.0762E-02
3	4	.0000E+00	.0000E+00	.0000E+00	-1.3604E+00	-1.3604E+00
4	5	1.9763E+00	8.0308E-01	.0000E+00	-2.0608E+00	7.1857E-01
5	6	4.0160E+00	.0000E+00	.0000E+00	-4.0025E+00	1.3520E-02
6	7	4.4950E-02	.0000E+00	.0000E+00	-4.4719E-02	2.3079E-04
7	8	3.3814E+00	.0000E+00	.0000E+00	-2.0361E+00	1.3453E+00
8	9	8.5831E-02	.0000E+00	.0000E+00	.0000E+00	8.5831E-02

TOTAL 9.5045E+00 8.0308E-01 .0000E+00 .0000E+00 -9.5753E+00 7.3232E-01
 1NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	-9.4621E-05	.0000E+00	.0000E+00	.0000E+00	-9.4621E-05
5	6	.0000E+00	.0000E+00	1.4359E-05	.0000E+00	.0000E+00	.0000E+00	1.4359E-05
6	7	.0000E+00	.0000E+00	-2.3311E-05	.0000E+00	.0000E+00	.0000E+00	-2.3311E-05
7	8	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
8	9	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00

TOTAL .0000E+00 .0000E+00 -1.0357E-04 .0000E+00 .0000E+00 .0000E+00 .0000E+00 -1.0357E-04
 1NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	4.5517E-05	.0000E+00	-6.5604E-01	-2.2759E-05	-6.2462E-02
5	6	.0000E+00	.0000E+00	-1.3535E-02	.0000E+00	-1.3535E-02
6	7	.0000E+00	.0000E+00	-2.0748E-04	.0000E+00	-2.0748E-04
7	8	.0000E+00	.0000E+00	-1.4921E-07	.0000E+00	-1.4921E-07
8	9	.0000E+00	.0000E+00	-5.5258E-10	.0000E+00	-5.5258E-10

TOTAL 4.5517E-05 .0000E+00 -6.6978E-01 -2.2759E-05 -6.2462E-02 -7.3222E-01
 1NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOST TO FISSION	WEIGHT GAIN BY (N,XN)
1	2	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00

		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	3006.50C	3.7251E-03	2001	9.7474E-02	4.7994E-02	.0000E+00	.0000E+00
		3007.55C	3.9389E-02	10574	5.5167E-01	2.1200E-05	.0000E+00	.0000E+00
		5010.50C	1.2917E-02	18993	8.5058E-01	5.3333E-01	.0000E+00	.0000E+00
		5011.56C	4.7283E-02	38565	1.8836E+00	1.4818E-05	.0000E+00	.0000E+00
		8016.50C	5.7205E-01	394166	1.9717E+01	5.9516E-03	.0000E+00	.0000E+00
		9019.50C	3.3941E-04	337	1.7187E-02	6.4485E-06	.0000E+00	.0000E+00
		11023.50C	7.4299E-02	92717	4.3239E+00	2.2346E-03	.0000E+00	.0000E+00
		12000.50C	6.8682E-03	6808	3.5120E-01	6.8722E-05	.0000E+00	.0000E+00
		13027.50C	1.5817E-02	10715	5.6496E-01	5.7988E-04	.0000E+00	.0000E+00
		14000.50C	1.6227E-01	82658	4.3080E+00	5.1250E-03	.0000E+00	.0000E+00
		16032.50C	8.1958E-04	341	1.8617E-02	2.1453E-04	.0000E+00	.0000E+00
		19000.50C	1.5474E-02	7378	3.7205E-01	4.9153E-03	.0000E+00	.0000E+00
		20000.50C	3.3431E-03	1535	7.7301E-02	9.6905E-04	.0000E+00	.0000E+00
		22000.50C	2.5233E-03	7066	3.3052E-01	4.1638E-04	.0000E+00	.0000E+00
		25055.50C	5.7402E-03	25514	1.0778E+00	6.9076E-03	.0000E+00	.0000E+00
		26000.55C	2.6790E-02	30603	1.4550E+00	4.7028E-03	.0000E+00	.0000E+00
		28000.50C	2.5347E-03	6412	2.9668E-01	9.5726E-04	.0000E+00	.0000E+00
		15031.50C	9.1901E-05	67	3.2336E-03	8.8779E-06	.0000E+00	.0000E+00
		24000.50C	3.2141E-04	415	1.9826E-02	8.6290E-05	.0000E+00	.0000E+00
		29000.50C	4.8615E-04	860	4.0609E-02	5.4628E-04	.0000E+00	.0000E+00
		47109.50C	9.3463E-05	213	1.0080E-02	1.1025E-03	.0000E+00	.0000E+00
		56138.50C	1.2161E-04	171	8.4691E-03	9.5499E-06	.0000E+00	.0000E+00
		82000.50C	5.9553E-05	112	5.4602E-03	1.9099E-06	.0000E+00	.0000E+00
		17000.50C	6.6187E-04	332	1.6498E-02	1.3940E-04	.0000E+00	.0000E+00
		90232.50C	1.6193E-04	390	1.8869E-02	8.2998E-04	1.6646E-05	.0000E+00
		62149.50C	6.1454E-07	2	6.9002E-05	2.5300E-05	.0000E+00	.0000E+00
		92233.50C	8.6598E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		92234.50C	2.8908E-07	0	1.1718E-06	.0000E+00	.0000E+00	.0000E+00
		92236.50C	9.1059E-07	2	8.1616E-05	1.9874E-05	3.5202E-07	.0000E+00
		93237.55C	6.5721E-07	4	2.0382E-04	1.7605E-05	1.3078E-05	.0000E+00
		92235.50C	1.5306E-03	4005	2.2525E-01	1.2830E-02	3.7743E-02	2.2759E-05
		92238.50C	3.2021E-03	8117	3.8985E-01	1.6056E-02	1.6817E-03	.0000E+00
		94238.50C	4.4911E-06	19	8.8929E-04	6.7809E-05	6.0883E-05	.0000E+00
		94239.55C	1.0710E-03	2760	1.5836E-01	9.8779E-03	2.2924E-02	.0000E+00
		94240.50C	1.9576E-06	2	1.3321E-04	5.6699E-06	7.5669E-07	.0000E+00
		94241.50C	8.2892E-07	2	1.4919E-04	3.0190E-06	2.1149E-05	.0000E+00
		94242.50C	1.6337E-07	0	5.0650E-07	.0000E+00	.0000E+00	.0000E+00
		95241.50C	1.6422E-07	0	5.6035E-07	.0000E+00	.0000E+00	.0000E+00
		95242.50C	7.5829E-11	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		95243.50C	1.4724E-09	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		96245.35C	1.9683E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
5	6	6000.50C	1.3653E-03	79	4.0852E-03	4.1586E-09	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	264	1.2224E-02	3.8033E-05	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	545	2.8003E-02	5.2687E-05	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	43	1.9020E-03	2.9073E-06	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	13	7.7315E-04	8.1171E-06	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	17247	8.1085E-01	3.3365E-03	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	5572	2.3358E-01	1.4864E-03	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	45828	2.1574E+00	6.4513E-03	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	15499	7.0763E-01	2.1587E-03	.0000E+00	.0000E+00
6	7	6000.50C	1.3653E-03	2	8.9941E-05	1.3399E-10	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	6	3.3312E-04	1.4187E-05	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	16	6.9608E-04	4.6575E-07	.0000E+00	.0000E+00

		15031.50C	7.9416E-04	1	5.9077E-05	7.6781E-08	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	241	1.1414E-02	6.6599E-05	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	97	4.0386E-03	1.7986E-05	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	674	3.1787E-02	8.0972E-05	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	237	1.0927E-02	2.7192E-05	.0000E+00	.0000E+00
7	8	1001.50C	6.6667E-01	90	4.1551E-03	1.4916E-07	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	15	7.0550E-04	4.4577E-11	.0000E+00	.0000E+00
8	9	1001.50C	6.6667E-01	2	5.0064E-05	5.4974E-10	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	2	1.1597E-04	2.8463E-12	.0000E+00	.0000E+00
TOTAL				840329	4.1212E+01	6.6978E-01	6.2462E-02	2.2759E-05

TOTAL OVER ALL CELLS FOR EACH NUCLIDE	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT GAIN BY FISSION	WEIGHT GAIN BY (N,XN)
1001.50C	92	4.2052E-03	1.4971E-07	.0000E+00	.0000E+00
3006.50C	2001	9.7474E-02	4.7994E-02	.0000E+00	.0000E+00
3007.55C	10574	5.5167E-01	2.1200E-05	.0000E+00	.0000E+00
5010.50C	18993	8.5058E-01	5.3333E-01	.0000E+00	.0000E+00
5011.56C	38565	1.8836E+00	1.4818E-05	.0000E+00	.0000E+00
6000.50C	81	4.1751E-03	4.2926E-09	.0000E+00	.0000E+00
7014.50C	270	1.2557E-02	5.2219E-05	.0000E+00	.0000E+00
8016.50C	394183	1.9718E+01	5.9516E-03	.0000E+00	.0000E+00
9019.50C	337	1.7187E-02	6.4485E-06	.0000E+00	.0000E+00
11023.50C	92717	4.3239E+00	2.2346E-03	.0000E+00	.0000E+00
12000.50C	6808	3.5120E-01	6.8722E-05	.0000E+00	.0000E+00
13027.50C	10715	5.6496E-01	5.7988E-04	.0000E+00	.0000E+00
14000.50C	83219	4.3367E+00	5.1781E-03	.0000E+00	.0000E+00
15031.50C	111	5.1947E-03	1.1862E-05	.0000E+00	.0000E+00
16032.50C	354	1.9390E-02	2.2264E-04	.0000E+00	.0000E+00
17000.50C	332	1.6498E-02	1.3940E-04	.0000E+00	.0000E+00
19000.50C	7378	3.7205E-01	4.9153E-03	.0000E+00	.0000E+00
20000.50C	1535	7.7301E-02	9.6905E-04	.0000E+00	.0000E+00
22000.50C	7066	3.3052E-01	4.1638E-04	.0000E+00	.0000E+00
24000.50C	17903	8.4209E-01	3.4894E-03	.0000E+00	.0000E+00
25055.50C	31183	1.3154E+00	8.4119E-03	.0000E+00	.0000E+00
26000.55C	77105	3.6441E+00	1.1235E-02	.0000E+00	.0000E+00
28000.50C	22148	1.0152E+00	3.1432E-03	.0000E+00	.0000E+00
29000.50C	860	4.0609E-02	5.4628E-04	.0000E+00	.0000E+00
47109.50C	213	1.0080E-02	1.1025E-03	.0000E+00	.0000E+00
56138.50C	171	8.4691E-03	9.5499E-06	.0000E+00	.0000E+00
62149.50C	2	6.9002E-05	2.5300E-05	.0000E+00	.0000E+00
82000.50C	112	5.4602E-03	1.9099E-06	.0000E+00	.0000E+00
90232.50C	390	1.8869E-02	8.2998E-04	1.6646E-05	.0000E+00
92233.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C	0	1.1718E-06	.0000E+00	.0000E+00	.0000E+00
92235.50C	4005	2.2525E-01	1.2830E-02	3.7743E-02	2.2759E-05
92236.50C	2	8.1616E-05	1.9874E-05	3.5202E-07	.0000E+00
92238.50C	8117	3.8985E-01	1.6056E-02	1.6817E-03	.0000E+00
93237.55C	4	2.0382E-04	1.7605E-05	1.3078E-05	.0000E+00
94238.50C	19	8.8929E-04	6.7809E-05	6.0883E-05	.0000E+00
94239.55C	2760	1.5836E-01	9.8779E-03	2.2924E-02	.0000E+00
94240.50C	2	1.3321E-04	5.6699E-06	7.5669E-07	.0000E+00
94241.50C	2	1.4919E-04	3.0190E-06	2.1149E-05	.0000E+00
94242.50C	0	5.0650E-07	.0000E+00	.0000E+00	.0000E+00
95241.50C	0	5.6035E-07	.0000E+00	.0000E+00	.0000E+00

95242.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
95243.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
96245.35C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE RUNTPH NPS = 15565 CTM = 9.95

19 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

COMPUTER TIME = 10.00 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 16:19:26

PROBID = 12/01/95 16:09:24

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 15:39:10

 INP=DHLWG4 OUTP=DHLWG4.0

PROBID = 12/01/95 15:39:10

```

1-   DHLWG4-- DWPf GLASS W/ NO ABSORBERS INFINITE ARRAY FLOODED
2-   C      1 2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   C      2 -1.00 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   C      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   C      4 2 -1.00 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   C      5 1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   C      6 3 -7.9 -1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  C      7 3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  C      8 2 -1.00 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  C      9 2 -1.00 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10 4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11 4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12 2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13 5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14 5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15 2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16 2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17 0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15* PX -100.74
38-  C      16* PX 100.74
39-  C      17* PY -100.74
40-  C      18* PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      C      M5      25055.50C -0.10 26000.55C -0.70 28000.50C -31.000
60-      C      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      C      M4      6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
63-      C      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      C      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      C      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3      6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2      1001.50C 2.0 8016.50C 1.0
71-      MT2     LWTR.01T
72-      C      DHLW GLASS WITH NONACTINIDE ABSORBERS REMOVED IE. ACTINIDES + SIO2
73-      M1      8016.50C -5.1282+1 14000.50C -4.5004+1 92233.50C -9.727-9
74-      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
75-      92235.50C -1.734-2 92238.50C -3.674 94238.50C -5.153-3
76-      94239.55C -1.234-2 94240.50C -2.265-3 94241.50C -9.631-4
77-      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
78-      95243.50C -1.725-6 96245.35C -2.325-9
79-      PRINT
80-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS          492
POINTS NOT IN ANY CELL              0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS                0
POINTS IN AMBIGUOUS CELLS           0
TOTAL POINTS REJECTED                0
POINTS REMAINING                     492
POINTS AFTER EXPANSION OR CONTRACTION 501
NOMINAL SOURCE SIZE                  500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02

THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00

THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 1.000000E+02

MATERIAL

NUMBER	COMPONENT NUCLIDE, ATOM FRACTION							
3	6000,	.00137	7014,	.00390	14000,	.01460	15031,	.00079
	16032,	.00051	24000,	.19975	25055,	.01990	26000,	.66604
	28000,	.09314						
2	1001,	.66667	8016,	.33333				
ASSOCIATED THERMAL S(A,B) DATA SETS:	LWTR.01T							
1	8016,	.66460	14000,	.33216	92233,	.00000	92234,	.00000
	92236,	.00000	93237,	.00000	92235,	.00002	92238,	.00320
	94238,	.00000	94239,	.00001	94240,	.00000	94241,	.00000

94242, .00000	95241, .00000	95242, .00000	95243, .00000
96245, .00000			

MATERIAL NUMBER	COMPONENT NUCLIDE, MASS FRACTION							
3	6000, .00030	7014, .00100	14000, .00750	15031, .00045				
	16032, .00030	24000, .19000	25055, .02000	26000, .68045				
	28000, .10000							
2	1001, .11191	8016, .88809						
1	8016, .51282	14000, .45004	92233, .00000	92234, .00000				
	92236, .00001	93237, .00001	92235, .00017	92238, .03674				
	94238, .00005	94239, .00012	94240, .00002	94241, .00001				
	94242, .00000	95241, .00000	95242, .00000	95243, .00000				
	96245, .00000							

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1 2	1.00309E-01	1.00000E+00	.00000E+00	2.51903E+06	2.51903E+06	0	
2 3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3 4	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4 5	8.27954E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5 6	8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6 7	8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7 8	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8 9	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
1 1	.00000E+00	.00000E+00	INFINITE
2 2	.00000E+00	1.63839E+04	
3 3	.00000E+00	2.91864E+03	
4 4	.00000E+00	.00000E+00	INFINITE
5 5	.00000E+00	.00000E+00	INFINITE
6 6	.00000E+00	.00000E+00	INFINITE
7 7	.00000E+00	.00000E+00	INFINITE
8 8	.00000E+00	.00000E+00	INFINITE
9 9	.00000E+00	1.96800E+04	
10 10	.00000E+00	1.96800E+04	
11 11	.00000E+00	1.96800E+04	
12 12	.00000E+00	1.96800E+04	
13 13	.00000E+00	.00000E+00	NOT A BOUNDARY
14 14	.00000E+00	.00000E+00	INFINITE
15 19	.00000E+00	.00000E+00	NOT A BOUNDARY
16 20	.00000E+00	1.63839E+04	
17 21	.00000E+00	.00000E+00	NOT A BOUNDARY
18 22	.00000E+00	.00000E+00	NOT A BOUNDARY
19 23	.00000E+00	.00000E+00	NOT A BOUNDARY
20 24	.00000E+00	.00000E+00	NOT A BOUNDARY
21 25	.00000E+00	.00000E+00	NOT A BOUNDARY

1CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-01	1.00000E+00	2.51903E+06	2.51903E+06	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.27954E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00

TOTAL 2.52367E+06 2.55564E+06
1SURFACES

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2 REFL.	PZ	.0000000E+00
3	3	PZ	1.3713000E+02
4	4	PZ	1.3871750E+02
5	5	PX	-3.2000000E+01
6	6	PX	3.2000000E+01
7	7	PY	-3.2000000E+01
8	8	PY	3.2000000E+01
9	9 REFL.	PX	-6.3999900E+01
10	10 REFL.	PX	6.3999900E+01
11	11 REFL.	PY	-6.3999900E+01
12	12 REFL.	PY	6.3999900E+01
13	13	CZ	7.8450000E+01
14	14	CZ	3.0480000E+01
15	19	CZ	8.0450000E+01
16	20	PZ	1.5375000E+02
17	21	PZ	1.5625000E+02
18	22	CZ	8.5450000E+01
19	23	PZ	1.6250000E+02
20	24	PZ	1.7100000E+02
21	25	PZ	2.0148000E+02

WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL TMP 1
2 2.5300E-08

4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

8 WARNING MESSAGES SO FAR.
1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE	LENGTH
-------	--------

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY
6000.50C	16126	NJOY
7014.50C	22772	NJOY
8016.50C	23669	NJOY
24000.50C	89104	NJOY
26000.55C	84136	NJOY
28000.50C	82267	NJOY
92233.50C	14205	NJOY
92235.50C	44188	NJOY
92238.50C	66440	NJOY
94239.55C	67551	NJOY
94240.50C	42744	NJOY

TOTAL NU
TOTAL NU
TOTAL NU
TOTAL NU
TOTAL NU

(1301)	79/07/31.
(1306)	79/07/31.
(1275)	79/09/08.
(1276)	05/14/81
(1324)	79/06/21.
(260)	10/21/82
(1328)	79/06/21.
(1393)	79/09/12.
(1395)	79/09/12.
(1398)	79/09/13.
(1399)	02/21/85
(1380)	79/09/13.

TABLES FROM FILE ENDF5P2

14000.50C	48275	NJOY
WARNING. NUBAR OF	92234.50C	MAY BE EITHER PROMPT OR TOTAL.
92234.50C	76999	NJOY
WARNING. NUBAR OF	92236.50C	MAY BE EITHER PROMPT OR TOTAL.
92236.50C	119238	NJOY
WARNING. NUBAR OF	94238.50C	MAY BE EITHER PROMPT OR TOTAL.
94238.50C	16458	NJOY
94241.50C	22523	NJOY
94242.50C	43433	NJOY

TOTAL NU
TOTAL NU

(1314)	79/06/21.
(1394)	79/10/17.
(1396)	79/08/30.
(1338)	79/09/12.
(1381)	79/08/30.
(1342)	79/09/06.

TABLES FROM FILE ENDF5U2

15031.50C	2779	NJOY
16032.50C	2684	NJOY
25055.50C	60097	NJOY
WARNING. NUBAR OF	95241.50C	MAY BE EITHER PROMPT OR TOTAL.
95241.50C	29300	NJOY
WARNING. NUBAR OF	95242.50C	MAY BE EITHER PROMPT OR TOTAL.
95242.50C	5248	NJOY
WARNING. NUBAR OF	95243.50C	MAY BE EITHER PROMPT OR TOTAL.
95243.50C	51474	NJOY

(1315)	79/10/29.
(1316)	79/10/29.
(1325)	79/06/21.
(1361)	79/08/29.
(1369)	79/09/24.
(1363)	79/08/30.

TABLES FROM FILE RMCCSA2

93237.55C	29142	NJOY
-----------	-------	------

TOTAL NU

(1337) 04/04/85

TABLES FROM FILE ENDL852

WARNING. NUBAR OF 96245.35C MAY BE EITHER PROMPT OR TOTAL.
 96245.35C 15310 ZA=96245 ENDL-85 85/04/24 T=0K

(93) 86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T 10193 HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN

1001 0 010/22/85

TOTAL 1087508

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
 1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL 63084
 TALLIES 0
 BANK 12403
 CROSS SECTIONS 1087508

TOTAL 1162995

 DUMP NO. 1 ON FILE RUNTPF NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

16 WARNING MESSAGES SO FAR.
 1 STARTING MCRUN. FIELD LENGTH = 0 CPO = .03 PRINT TABLE 110

DHLWG4-- DWPF GLASS W/ NO ABSORBERS INFINITE ARRAY FLOODED

NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	-2.798E+01	-5.256E+00	5.727E+01	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	9.980E-01	6.976E+00
2	-2.922E+01	3.019E-02	6.434E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	9.980E-01	3.535E+00
3	-6.841E+00	3.877E+00	7.237E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	9.980E-01	1.224E+00
4	-1.212E+01	5.036E+00	5.961E+01	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	9.980E-01	2.855E+00
5	-1.190E+01	-2.159E+01	1.094E+02	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	9.980E-01	1.218E+00
6	8.907E+00	-9.255E+00	1.097E+02	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	9.980E-01	3.424E+00
7	1.941E+01	-1.772E+01	1.073E+02	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	9.980E-01	6.471E-01
8	-3.594E+00	-5.711E+00	1.193E+02	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	9.980E-01	2.294E+00
9	1.749E+01	-7.422E+00	1.347E+02	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	9.980E-01	8.083E-01
10	2.281E+01	-4.160E+00	1.365E+02	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	9.980E-01	2.650E+00
11	-2.318E+01	-1.701E+01	1.298E+02	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	9.980E-01	5.998E-01
12	-2.207E+01	-2.595E+00	1.021E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	9.980E-01	2.063E+00
13	2.319E+01	5.465E+00	1.197E+02	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	9.980E-01	1.488E+00
14	2.933E+01	6.324E-01	1.186E+02	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	9.980E-01	2.575E+00
15	2.122E+01	-1.387E+01	1.128E+02	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	9.980E-01	7.327E-01
16	-3.872E+00	2.618E+01	1.112E+02	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	9.980E-01	5.739E+00
17	-6.634E+00	2.418E+01	1.131E+02	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	9.980E-01	1.838E+00
18	1.674E+01	-1.786E+01	8.545E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	9.980E-01	2.500E+00
19	1.751E+01	-1.385E+01	1.293E+02	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	9.980E-01	1.153E+00
20	9.947E-01	2.231E+01	9.560E+01	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	9.980E-01	1.995E+00
21	4.729E+00	1.943E+01	8.977E+01	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	9.980E-01	1.355E+00
22	5.561E+00	2.061E+01	9.068E+01	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	9.980E-01	9.638E-01
23	2.739E+00	3.029E+00	4.436E+00	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	9.980E-01	2.434E+00

24	2.050E+00	2.991E+00	4.376E+00	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	9.980E-01	2.986E+00
25	5.443E+00	2.889E+01	2.480E+00	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	9.980E-01	1.322E+00
26	-1.391E+01	1.614E+01	3.100E+01	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	9.980E-01	3.261E+00
27	1.477E+01	2.175E+01	4.277E+01	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	9.980E-01	2.851E+00
28	1.988E+01	1.867E+01	3.368E+01	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	9.980E-01	2.495E+00
29	1.528E+01	1.135E+01	6.599E+00	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	9.980E-01	5.244E+00
30	6.174E+00	1.028E+01	5.074E+01	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	9.980E-01	2.771E+00
31	8.899E+00	1.415E+01	4.767E+01	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	9.980E-01	4.328E-01
32	5.854E+00	-6.142E+00	4.231E+01	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	9.980E-01	1.301E+00
33	6.382E+00	-6.124E+00	4.308E+01	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	9.980E-01	4.511E-01
34	7.463E+00	-4.374E+00	4.313E+01	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	9.980E-01	1.139E+00
35	4.186E+00	-6.667E+00	4.356E+01	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	9.980E-01	3.151E-01
36	3.135E-01	-6.019E+00	3.994E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	9.980E-01	9.859E-01
37	-6.714E+00	-1.082E+01	3.781E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	9.980E-01	6.717E+00
38	3.209E+00	7.801E+00	3.357E+01	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	9.980E-01	1.519E+00
39	2.928E+00	8.448E+00	3.470E+01	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	9.980E-01	9.901E-01
40	4.759E+00	1.088E+01	3.978E+01	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	9.980E-01	1.192E+00
41	6.214E+00	1.527E+01	4.169E+01	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	9.980E-01	3.105E+00
42	1.018E+01	1.471E+01	4.051E+01	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	9.980E-01	2.483E+00
43	-3.684E+00	6.815E+00	5.637E+01	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	9.980E-01	1.161E+00
44	1.811E+01	8.354E+00	2.193E+01	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	9.980E-01	1.786E+00
45	2.770E+01	8.669E+00	1.341E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	9.980E-01	2.822E-01
46	6.597E+00	4.881E+00	5.436E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	9.980E-01	4.031E-01
47	1.146E+01	-9.487E+00	3.176E+01	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	9.980E-01	1.159E+00
48	2.333E+01	-2.218E+00	1.342E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	9.980E-01	2.950E+00
49	-6.568E+00	2.609E+01	1.983E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	9.980E-01	1.986E+00
50	-2.657E+00	1.766E+01	2.783E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	9.980E-01	2.751E+00

CYCLE 1 K(COLLISION) .075782 REMOVAL LIFETIME(ABS) 1.5715E+04 SOURCE POINTS GENERATED 1209

CYCLE 2 K(COLLISION) .073708 REMOVAL LIFETIME(ABS) 1.4859E+04 SOURCE POINTS GENERATED 490

CYCLE 3 K(COLLISION) .079834 REMOVAL LIFETIME(ABS) 1.8001E+04 SOURCE POINTS GENERATED 593

CYCLE 4 K(COLLISION) .070448 REMOVAL LIFETIME(ABS) 1.4288E+04 SOURCE POINTS GENERATED 408

CYCLE 5 K(COLLISION) .082040 REMOVAL LIFETIME(ABS) 1.6549E+04 SOURCE POINTS GENERATED 551

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .068939 REMOVAL LIFETIME(ABS) 1.5633E+04 SOURCE POINTS GENERATED 444

ESTIMATOR	CYCLE	7	AVE OF	2 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.081291		.075115	.0822	.000000	.0000	.0000
K(ABSORPTION)		.056842		.064844	.1234	.000000	.0000	.0000
K(TRK LENGTH)		.080840		.075206	.0749	.000000	.0000	.0000
REM LIFE(COL)		1.9172E+04		1.7257E+04	.1110			
REM LIFE(ABS)		1.8251E+04		1.6942E+04	.0773			
SOURCE POINTS GENERATED		580				.0000E+00	.0000	.0000

ESTIMATOR	CYCLE	8	AVE OF	3 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.072858		.074363	.0490	.073496	.0484	-.6769
K(ABSORPTION)		.088198		.072629	.1246	.073732	.0511	-.6044
K(TRK LENGTH)		.074095		.074836	.0437	.074599	.0463	.9955
REM LIFE(COL)		1.6819E+04		1.7111E+04	.0652			
REM LIFE(ABS)		1.7085E+04		1.6990E+04	.0446			
SOURCE POINTS GENERATED		425				1.7050E+04	.0547	1.6796E+04 .0346 .9812

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 8

ESTIMATOR	CYCLE	9	AVE OF	4	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR		
K(COLLISION)		.078057		.075286	.0364	K(COL/ABS)	.076379	.0501	.075650	.0368	-.3045
K(ABSORPTION)		.092004		.077473	.1036	K(ABS/TK LN)	.076596	.0511	.075957	.0349	-.2349
K(TRK LENGTH)		.078373		.075720	.0327	K(TK LN/COL)	.075503	.0345	.077880	.0293	.9959
REM LIFE(COL)	1.7289E+04		1.7156E+04		.0460	K(COL/ABS/TK LN)	.076160	.0363	.078604	.0565	
REM LIFE(ABS)	1.7542E+04		1.7128E+04		.0323	LIFE(COL/ABS)	1.7142E+04	.0388	1.7092E+04	.0284	.9627
SOURCE POINTS	GENERATED		.489								

ESTIMATOR	CYCLE	10	AVE OF	5	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR		
K(COLLISION)		.078836		.075996	.0294	K(COL/ABS)	.077801	.0422	.076505	.0302	-.1701
K(ABSORPTION)		.088136		.079605	.0826	K(ABS/TK LN)	.078127	.0435	.076970	.0300	-.0587
K(TRK LENGTH)		.080363		.076649	.0278	K(TK LN/COL)	.076323	.0285	.077534	.0336	.9883
REM LIFE(COL)	1.6731E+04		1.7071E+04		.0362	K(COL/ABS/TK LN)	.077417	.0321	.076614	.0571	
REM LIFE(ABS)	1.6801E+04		1.7062E+04		.0254	LIFE(COL/ABS)	1.7067E+04	.0305	1.7051E+04	.0210	.9634
SOURCE POINTS GENERATED			547								

ESTIMATOR	CYCLE	11	AVE OF	6 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.068566	.074758	.0295	K(COL/ABS)	.075961 .0428	.074987 .0318	.1043
K(ABSORPTION)		.064956	.077164	.0764	K(ABS/TK LN)	.076158 .0447	.075281 .0337	.2295
K(TRK LENGTH)		.067656	.075152	.0306	K(TK LN/COL)	.074955 .0299	.074415 .0333	.9862
REM LIFE(COL)	1.6250E+04		1.6934E+04	.0309	K(COL/ABS/TK LN)	.075691 .0352	.073928 .0364	
REM LIFE(ABS)	1.6174E+04		1.6914E+04	.0227	LIFE(COL/ABS)	1.6924E+04 .0265	1.6890E+04 .0199	.9588
SOURCE POINTS	GENERATED	423						

CYCLE = 11

ESTIMATOR	CYCLE	12	AVE OF	7 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.070680	.074175	.0263	K(COL/ABS)	.072781 .0578	.074202 .0289	.2908
K(ABSORPTION)		.036726	.071387	.1069	K(ABS/TK LN)	.072937 .0592	.074601 .0299	.3872
K(TRK LENGTH)		.070497	.074487	.0275	K(TK LN/COL)	.074331 .0269	.073788 .0286	.9871
REM LIFE(COL)	1.8167E+04		1.7110E+04	.0278	K(COL/ABS/TK LN)	.073350 .0443	.073452 .0376	
REM LIFE(ABS)	1.7658E+04		1.7021E+04	.0200	LIFE(COL/ABS)	1.7065E+04 .0237	1.6904E+04 .0166	.9616
SOURCE POINTS GENERATED		526						

ESTIMATOR	CYCLE	13	AVE OF	8 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR	
K(COLLISION)	.081400		.075078	.0255	K(COL/ABS)	.072383	.0506	.074852	.0275
K(ABSORPTION)	.057794		.069688	.0979	K(ABS/TK LN)	.072546	.0518	.075274	.0288
K(TRK LENGTH)	.081822		.075404	.0265	K(TK LN/COL)	.075241	.0260	.074627	.0274
REM LIFE(COL)	1.7997E+04		1.7221E+04	.0248	K(COL/ABS/TK LN)	.073390	.0383	.073500	.0361
REM LIFE(ABS)	1.7504E+04		1.7081E+04	.0177	LIFE(COL/ABS)	1.7151E+04	.0210	1.6901E+04	.0142
SOURCE POINTS GENERATED	577								

ESTIMATOR	CYCLE	14	AVE OF	9	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.076709		.075260		.0226	K(COL/ABS)	.073132	.0453	.15021
K(ABSORPTION)	.081542		.071005		.0867	K(ABS/TK LN)	.073309	.0464	.2377
K(TRK LENGTH)	.077286		.075613		.0235	K(TK LN/COL)	.075436	.0230	.9899
REM LIFE(COL)	1.6953E+04		1.7191E+04		.0219	K(COL/ABS/TK LN)	.073959	.0344	.0340
REM LIFE(ABS)	1.6683E+04		1.7037E+04		.0158	LIFE(COL/ABS)	1.7114E+04	.0187	.9588
SOURCE POINTS	GENERATED	469							

CYCLE = 14

ESTIMATOR	CYCLE	15	AVE OF	10	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.076831		.075417	.0203	K(COL/ABS)	.073802 .0412	.075324 .0215	.1677
K(ABSORPTION)		.082837		.072188	.0781	K(ABS/TK LN)	.073839 .0418	.075425 .0224	.2155
K(TRK LENGTH)		.074387		.075490	.0211	K(TK LN/COL)	.075453 .0206	.075398 .0215	.9738
REM LIFE(COL)	1.4207E+04		1.6893E+04		.0267	K(COL/ABS/TK LN)	.074365 .0311	.075279 .0234	
REM LIFE(ABS)	1.4333E+04		1.6766E+04		.0216	LIFE(COL/ABS)	1.6830E+04 .0240	1.6560E+04 .0189	.9725
SOURCE POINTS	GENERATED	513							

ESTIMATOR	CYCLE	16	AVE OF	11	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.084475		.076240	.0211	K(COL/ABS)	.074563 .0383	.076131 .0222	.2122
K(ABSORPTION)		.079870		.072886	.0706	K(ABS/TK LN)	.074547 .0387	.076140 .0223	.2517
K(TRK LENGTH)		.083388		.076208	.0211	K(TK LN/COL)	.076224 .0210	.076224 .0221	.9771
REM LIFE(COL)		1.6570E+04		1.6863E+04	.0242	K(COL/ABS/TK LN)	.075112 .0296	.076138 .0239	
REM LIFE(ABS)		1.6380E+04		1.6731E+04	.0197	LIFE(COL/ABS)	1.6797E+04 .0218	1.6517E+04 .0173	.9721
SOURCE POINTS GENERATED 530									

ESTIMATOR	CYCLE	17	AVE OF	12	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.075390		.076169	.0193	K(COL/ABS)	.074273 .0353	.076052 .0202	.2159
K(ABSORPTION)		.066760		.072376	.0653	K(ABS/TK LN)	.074276 .0356	.076102 .0203	.2525
K(TRK LENGTH)		.075820		.076176	.0193	K(TK LN/COL)	.076173 .0192	.076173 .0201	.9768
REM LIFE(COL)		1.4781E+04		1.6690E+04	.0246	K(COL/ABS/TK LN)	.074907 .0272	.076079 .0219	
REM LIFE(ABS)		1.5183E+04		1.6602E+04	.0197	LIFE(COL/ABS)	1.6646E+04 .0221	1.6444E+04 .0161	.9763
SOURCE POINTS GENERATED 435									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 17

ESTIMATOR	CYCLE	18	AVE OF	13	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.074749		.076060	.0179	K(COL/ABS)	.074847 .0331	.075974 .0186	.1843
K(ABSORPTION)		.088728		.073634	.0614	K(ABS/TK LN)	.074803 .0333	.075897 .0187	.1984
K(TRK LENGTH)		.073529		.075972	.0180	K(TK LN/COL)	.076016 .0178	.076028 .0186	.9747
REM LIFE(COL)		1.6198E+04		1.6652E+04	.0228	K(COL/ABS/TK LN)	.075222 .0253	.075951 .0197	
REM LIFE(ABS)		1.5906E+04		1.6549E+04	.0185	LIFE(COL/ABS)	1.6600E+04 .0205	1.6374E+04 .0157	.9739
SOURCE POINTS GENERATED 493									

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.073971		.075911	.0167	K(COL/ABS)	.075225 .0309	.075853 .0172	.1540
K(ABSORPTION)		.086318		.074540	.0575	K(ABS/TK LN)	.075102 .0309	.075609 .0177	.1387
K(TRK LENGTH)		.071674		.075665	.0172	K(TK LN/COL)	.075788 .0168	.075898 .0174	.9684
REM LIFE(COL)		1.6034E+04		1.6608E+04	.0214	K(COL/ABS/TK LN)	.075372 .0234	.075834 .0184	
REM LIFE(ABS)		1.5830E+04		1.6497E+04	.0174	LIFE(COL/ABS)	1.6553E+04 .0193	1.6315E+04 .0151	.9730
SOURCE POINTS GENERATED 550									

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.075059		.075854	.0156	K(COL/ABS)	.075157 .0288	.075796 .0160	.1547
K(ABSORPTION)		.073351		.074461	.0536	K(ABS/TK LN)	.075051 .0288	.075583 .0164	.1390
K(TRK LENGTH)		.075316		.075642	.0160	K(TK LN/COL)	.075748 .0157	.075838 .0162	.9681
REM LIFE(COL)		1.6816E+04		1.6622E+04	.0199	K(COL/ABS/TK LN)	.075319 .0218	.075775 .0170	
REM LIFE(ABS)		1.6565E+04		1.6502E+04	.0162	LIFE(COL/ABS)	1.6562E+04 .0179	1.6305E+04 .0140	.9727
SOURCE POINTS GENERATED 487									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 20

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.076124		.075871	.0145	K(COL/ABS)	.074644 .0280	.075773 .0149	.1449
K(ABSORPTION)		.057780		.073418	.0528	K(ABS/TK LN)	.074539 .0280	.075554 .0153	.1296
K(TRK LENGTH)		.075925		.075660	.0150	K(TK LN/COL)	.075765 .0147	.075855 .0151	.9681
REM LIFE(COL)		1.7225E+04		1.6659E+04	.0187	K(COL/ABS/TK LN)	.074983 .0210	.075752 .0160	
REM LIFE(ABS)		1.7008E+04		1.6534E+04	.0153	LIFE(COL/ABS)	1.6597E+04 .0169	1.6325E+04 .0132	.9731
SOURCE POINTS GENERATED 541									

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.069021		.075468	.0147	K(COL/ABS)	.074163 .0273	.075376 .0152	.1886
K(ABSORPTION)		.063883		.072857	.0505	K(ABS/TK LN)	.074049 .0273	.075139 .0156	.1749
K(TRK LENGTH)		.068545		.075241	.0152	K(TK LN/COL)	.075355 .0149	.075471 .0152	.9723
REM LIFE(COL)		1.7257E+04		1.6695E+04	.0177	K(COL/ABS/TK LN)	.074522 .0208	.075376 .0163	
REM LIFE(ABS)		1.6783E+04		1.6548E+04	.0144	LIFE(COL/ABS)	1.6621E+04 .0159	1.6314E+04 .0124	.9717
SOURCE POINTS GENERATED 413									

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.081208		.075787	.0145	K(COL/ABS)	.074248	.0257	.075643 .0148 .1679
K(ABSORPTION)		.070186		.072709	.0478	K(ABS/TK LN)	.074119	.0257	.075381 .0151 .1579
K(TRK LENGTH)		.080418		.075529	.0148	K(TK LN/COL)	.075658	.0145	.075751 .0149 .9738
REM LIFE(COL)		1.7670E+04		1.6749E+04	.0169	K(COL/ABS/TK LN)	.074675	.0197	.075602 .0161
REM LIFE(ABS)		1.7367E+04		1.6594E+04	.0138	LIFE(COL/ABS)	1.6671E+04	.0152	1.6339E+04 .0118 .9727
SOURCE POINTS GENERATED		610							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 23

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.078905		.075951	.0138	K(COL/ABS)	.074950	.0258	.075896 .0142 .2104
K(ABSORPTION)		.096280		.073949	.0475	K(ABS/TK LN)	.074828	.0259	.075650 .0145 .2041
K(TRK LENGTH)		.078895		.075706	.0142	K(TK LN/COL)	.075828	.0139	.075926 .0142 .9744
REM LIFE(COL)		1.5962E+04		1.6707E+04	.0162	K(COL/ABS/TK LN)	.075202	.0198	.075871 .0152
REM LIFE(ABS)		1.6031E+04		1.6564E+04	.0132	LIFE(COL/ABS)	1.6636E+04	.0146	1.6325E+04 .0112 .9731
SOURCE POINTS GENERATED		438							

ESTIMATOR	CYCLE	25	AVE OF	20	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.077403		.076024	.0131	K(COL/ABS)	.074770	.0247	.075948 .0135 .1987
K(ABSORPTION)		.065284		.073516	.0457	K(ABS/TK LN)	.074645	.0248	.075697 .0138 .1932
K(TRK LENGTH)		.077076		.075774	.0134	K(TK LN/COL)	.075899	.0132	.075997 .0135 .9745
REM LIFE(COL)		1.7646E+04		1.6754E+04	.0156	K(COL/ABS/TK LN)	.075105	.0188	.075921 .0145
REM LIFE(ABS)		1.7137E+04		1.6593E+04	.0126	LIFE(COL/ABS)	1.6674E+04	.0140	1.6325E+04 .0106 .9729
SOURCE POINTS GENERATED		496							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 25

1 PROBLEM SUMMARY

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

+ DHLWG4-- DWPf GLASS W/ NO ABSORBERS INFINITE ARRAY FLOODED

PROBID = 12/01/95 15:48:55
12/01/95 15:39:10

NEUTRON CREATION				NEUTRON LOSS			
TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY		TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY	
SOURCE	13242	9.4397E-01	2.0645E+00	ESCAPE	33	1.8253E-03	1.8297E-03
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	1.9908E-01	1.5341E-04	WEIGHT CUTOFF	13210	1.9872E-01	3.0115E-04
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	5.5335E-07	DOWNSCATTERING	0	0.	1.9791E+00
(N,XN)	2	1.2859E-04	4.3351E-05	CAPTURE	0	9.1697E-01	7.7208E-02
FISSION	0	0.	0.	LOSS TO (N,XN)	1	6.4296E-05	4.9683E-04
TOTAL	13244	1.1432E+00	2.0647E+00	LOSS TO FISSION	0	2.5590E-02	5.7092E-03
				TOTAL	13244	1.1432E+00	2.0647E+00

NUMBER OF NEUTRONS BANKED 1
 NEUTRON TRACKS PER SOURCE PARTICLE 1.0002E+00
 NEUTRON COLLISIONS PER SOURCE PARTICLE 2.0750E+02
 TOTAL NEUTRON COLLISIONS 2747752
 NET MULTIPLICATION 1.0001E+00 .0019

AVERAGE LIFETIME, SHAKES

ESCAPE 5.6706E+03
 CAPTURE 1.6464E+04
 CAPTURE OR ESCAPE 1.6443E+04
 ANY TERMINATION 1.9429E+04

CUTOFFS

TCO 1.0000E+34
 ECO .0000E+00
 WC1 -5.0000E-01
 WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 9.62 MINUTES
 COMPUTER TIME IN MCRUN 9.58 MINUTES

MAXIMUM NUMBER EVER IN BANK 1
 BANK OVERFLOWS TO BACKUP FILE 0

SOURCE PARTICLES PER MINUTE 1.3818E+03 FIELD LENGTH 0
 RANDOM NUMBERS GENERATED 24455969 MOST RANDOM NUMBERS USED WAS 10821 IN HISTORY 8383

RANGE OF SAMPLED SOURCE WEIGHTS = 4.1356E-01 TO 1.2255E+00
 1 NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

CELL	TRACKS ENTERING	POPULATION	COLLISIONS	COLLISIONS * WEIGHT (PER HISTORY)	NUMBER WEIGHTED ENERGY	FLUX WEIGHTED ENERGY	AVERAGE TRACK WEIGHT (RELATIVE)	AVERAGE TRACK MFP (CM)
1	2	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	36689	13243	642332	3.8554E+01	5.9595E-04	7.9728E-01	4.0143E+00
5	6	58878	12740	85994	4.2666E+00	2.3349E-04	7.1622E-01	1.9628E+00
6	7	1334	519	3041	1.5432E-01	2.6995E-04	7.2766E-01	1.9520E+00
7	8	51575	12466	1948224	7.9021E+01	3.5565E-05	5.9380E-01	6.9515E-01
8	9	883	442	68161	2.6904E+00	1.3729E-01	5.7530E-01	6.5585E-01

TOTAL 149359 39410 2747752 1.2469E+02
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-1.8253E-03	-1.8253E-03
3	4	.0000E+00	.0000E+00	.0000E+00	-9.7204E-01	-9.7204E-01
4	5	1.2202E+00	9.4397E-01	.0000E+00	-1.9533E+00	2.1081E-01
5	6	3.2055E+00	.0000E+00	.0000E+00	-2.8985E+00	3.0699E-01
6	7	7.3366E-02	.0000E+00	.0000E+00	-6.4514E-02	8.8528E-03
7	8	2.6771E+00	.0000E+00	.0000E+00	-1.3086E+00	1.3685E+00
8	9	4.7700E-02	.0000E+00	.0000E+00	-2.6811E-02	2.0889E-02

TOTAL 7.2238E+00 9.4397E-01 .0000E+00 .0000E+00 -7.2256E+00 9.4214E-01
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	3.1430E-04	.0000E+00	.0000E+00	.0000E+00	3.1430E-04
5	6	.0000E+00	.0000E+00	6.7816E-05	.0000E+00	.0000E+00	.0000E+00	6.7816E-05
6	7	.0000E+00	.0000E+00	2.3334E-04	.0000E+00	.0000E+00	.0000E+00	2.3334E-04
7	8	.0000E+00	.0000E+00	4.2193E-04	.0000E+00	.0000E+00	.0000E+00	4.2193E-04
8	9	.0000E+00	.0000E+00	-6.7840E-04	.0000E+00	.0000E+00	.0000E+00	-6.7840E-04

TOTAL .0000E+00 .0000E+00 3.5898E-04 .0000E+00 .0000E+00 .0000E+00 .0000E+00 3.5898E-04
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	1.2859E-04	.0000E+00	-1.8560E-01	-6.4296E-05	-2.5590E-02
5	6	.0000E+00	.0000E+00	-3.0706E-01	.0000E+00	-3.0706E-01
6	7	.0000E+00	.0000E+00	-9.0861E-03	.0000E+00	-9.0861E-03
7	8	.0000E+00	.0000E+00	-4.0115E-01	.0000E+00	-4.0115E-01
8	9	.0000E+00	.0000E+00	-1.4078E-02	.0000E+00	-1.4078E-02

TOTAL	1.2859E-04	.0000E+00	-9.1697E-01	-6.4296E-05	-2.5590E-02	-9.4250E-01
1NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE						

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOSS TO FISSION	WEIGHT GAIN BY (N,XN)	
1	2	1001.50C 8016.50C	6.6667E-01 3.3333E-01	0 0	.0000E+00 .0000E+00	.0000E+00 .0000E+00	.0000E+00 .0000E+00	
3	4	1001.50C 8016.50C	6.6667E-01 3.3333E-01	0 0	.0000E+00 .0000E+00	.0000E+00 .0000E+00	.0000E+00 .0000E+00	
4	5	8016.50C 14000.50C 92233.50C 92234.50C 92236.50C 93237.55C 92235.50C 92238.50C 94238.50C 94239.55C 94240.50C 94241.50C 94242.50C 95241.50C 95242.50C 95243.50C 96245.35C	6.6460E-01 3.3216E-01 8.6523E-12 2.8883E-07 9.0980E-07 6.5664E-07 1.5293E-05 3.1993E-03 4.4872E-06 1.0700E-05 1.9559E-06 8.2819E-07 1.6322E-07 1.6407E-07 7.5762E-11 1.4711E-09 1.9666E-12	471099 160544 0 6 4 5 388 9548 111 508 79 37 0 3 0 0 0	2.8087E+01 9.8517E+00 .0000E+00 3.0120E-04 1.7551E-04 2.3428E-04 2.4224E-02 5.7379E-01 4.3230E-03 3.2675E-02 4.2301E-03 2.5457E-03 5.3817E-07 1.7258E-04 3.1907E-08 1.0694E-08 .0000E+00	7.3802E-03 7.1813E-02 .0000E+00 2.6385E-04 3.7404E-05 1.4513E-04 2.1656E-03 9.0408E-02 3.0813E-03 6.1147E-03 3.7339E-03 2.8860E-04 .0000E+00 1.6631E-04 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 5.5974E-07 5.1069E-07 9.8389E-08 1.0308E-02 1.9414E-03 1.7129E-04 1.2307E-02 2.3711E-06 8.5834E-04 .0000E+00 7.7597E-07 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 6.4296E-05 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
5	6	6000.50C 7014.50C 14000.50C 15031.50C 16032.50C 24000.50C 25055.50C 26000.55C 28000.50C	1.3653E-03 3.9036E-03 1.4597E-02 7.9416E-04 5.1291E-04 1.9975E-01 1.9900E-02 6.6604E-01 9.3142E-02	50 308 320 28 10 11065 3485 56860 13868	2.6698E-03 1.4942E-02 1.8174E-02 1.6005E-03 5.3062E-04 5.8094E-01 2.0698E-01 2.7533E+00 6.8750E-01	3.7181E-07 8.2125E-04 2.4966E-04 1.1067E-05 5.3050E-05 6.1702E-02 2.7434E-02 1.7346E-01 4.3332E-02	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
6	7	6000.50C 7014.50C 14000.50C 15031.50C 16032.50C 24000.50C 25055.50C 26000.55C 28000.50C	1.3653E-03 3.9036E-03 1.4597E-02 7.9416E-04 5.1291E-04 1.9975E-01 1.9900E-02 6.6604E-01 9.3142E-02	0 13 15 1 2 379 167 1990 474	.0000E+00 7.8406E-04 8.1705E-04 7.5257E-05 1.3195E-04 2.0675E-02 1.0184E-02 9.7397E-02 2.4255E-02	.0000E+00 1.3097E-05 9.5182E-06 1.6121E-07 1.0335E-05 1.6223E-03 1.0829E-03 5.1227E-03 1.2252E-03	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
7	8	1001.50C 8016.50C	6.6667E-01 3.3333E-01	1860202 88022	7.5113E+01 3.9077E+00	4.0059E-01 5.5785E-04	.0000E+00 .0000E+00	.0000E+00 .0000E+00
8	9	1001.50C 8016.50C	6.6667E-01 3.3333E-01	65151 3010	2.5633E+00 1.2703E-01	1.4064E-02 1.3885E-05	.0000E+00 .0000E+00	.0000E+00 .0000E+00
TOTAL				2747752	1.2471E+02	9.1697E-01	2.5590E-02	6.4296E-05
TOTAL OVER ALL CELLS FOR EACH NUCLIDE				TOTAL	COLLISIONS	WEIGHT LOST	WEIGHT GAIN	WEIGHT GAIN

	COLLISIONS	* WEIGHT	TO CAPTURE	BY FISSION	BY (N,XN)
1001.50C	1925353	7.7677E+01	4.1466E-01	.0000E+00	.0000E+00
6000.50C	50	2.6698E-03	3.7181E-07	.0000E+00	.0000E+00
7014.50C	321	1.5726E-02	8.3435E-04	.0000E+00	.0000E+00
8016.50C	562131	3.2121E+01	7.9520E-03	.0000E+00	.0000E+00
14000.50C	160879	9.8707E+00	7.2073E-02	.0000E+00	.0000E+00
15031.50C	29	1.6757E-03	1.1228E-05	.0000E+00	.0000E+00
16032.50C	12	6.6257E-04	6.3385E-05	.0000E+00	.0000E+00
24000.50C	11444	6.0162E-01	6.3325E-02	.0000E+00	.0000E+00
25055.50C	3652	2.1717E-01	2.8517E-02	.0000E+00	.0000E+00
26000.55C	58850	2.8507E+00	1.7858E-01	.0000E+00	.0000E+00
28000.50C	14342	7.1176E-01	4.4557E-02	.0000E+00	.0000E+00
92233.50C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C	6	3.0120E-04	2.6385E-04	5.5974E-07	.0000E+00
92235.50C	388	2.4224E-02	2.1656E-03	1.0308E-02	.0000E+00
92236.50C	4	1.7551E-04	3.7404E-05	5.1069E-07	.0000E+00
92238.50C	9548	5.7379E-01	9.0408E-02	1.9414E-03	6.4296E-05
93237.55C	5	2.3428E-04	1.4513E-04	9.8389E-08	.0000E+00
94238.50C	111	4.3230E-03	3.0813E-03	1.7129E-04	.0000E+00
94239.55C	508	3.2675E-02	6.1147E-03	1.2307E-02	.0000E+00
94240.50C	79	4.2301E-03	3.7339E-03	2.3711E-06	.0000E+00
94241.50C	37	2.5457E-03	2.8860E-04	8.5834E-04	.0000E+00
94242.50C	0	5.3817E-07	.0000E+00	.0000E+00	.0000E+00
95241.50C	3	1.7258E-04	1.6631E-04	7.7597E-07	.0000E+00
95242.50C	0	3.1907E-08	.0000E+00	.0000E+00	.0000E+00
95243.50C	0	1.0694E-08	.0000E+00	.0000E+00	.0000E+00
96245.35C	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE RUNTPF NPS = 13242 CTM = 9.58

16 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

COMPUTER TIME = 9.62 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 15:48:55

PROBID = 12/01/95 15:39:10

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 16:22:05

 INP=DHLWG5 OUTP=DHLWG5.0

PROBID = 12/01/95 16:22:05

```

1-   DHLWG5-- DWPF GLASS W/ NO ABSORBERS INFINITE ARRAY DRY
2-   C      1      2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   2      2 -1.-4 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   3      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   4      2 -1.-4 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   5      1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   6      3 -7.9 -1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  7      3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  8      2 -1.-4 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  9      2 -1.-4 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10      4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11      4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12      2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13      5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14      5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15      2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16      2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17      0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15*   PX -100.74
38-  C      16*   PX 100.74
39-  C      17*   PY -100.74
40-  C      18*   PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      C      M5      25055.50C -0.10 26000.55C -0.70      28000.50C -31.000
60-      C      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      C      M4      6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
63-      C      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      C      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      C      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3      6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2      1001.50C 2.0 8016.50C 1.0
71-      MT2     LWTR.01T
72-      C      DHLW GLASS WITH NONACTINIDE ABSORBERS REMOVED IE. ACTINIDES + S102
73-      M1      8016.50C -5.1282+1 14000.50C -4.5004+1 92233.50C -9.727-9
74-      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
75-      92235.50C -1.734-2 92238.50C -3.674 94238.50C -5.153-3
76-      94239.55C -1.234-2 94240.50C -2.265-3 94241.50C -9.631-4
77-      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
78-      95243.50C -1.725-6 96245.35C -2.325-9
79-      PRINT
80-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS      488
POINTS NOT IN ANY CELL        0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS          0
POINTS IN AMBIGUOUS CELLS      0
TOTAL POINTS REJECTED          0
POINTS REMAINING               488
POINTS AFTER EXPANSION OR CONTRACTION 498
NOMINAL SOURCE SIZE            500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02

THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00

THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 1.000006E+02

MATERIAL
NUMBER COMPONENT NUCLIDE, ATOM FRACTION

```

3      6000, .00137      7014, .00390      14000, .01460      15031, .00079
      16032, .00051      24000, .19975      25055, .01990      26000, .66604
      28000, .09314
2      1001, .66667      8016, .33333
ASSOCIATED THERMAL S(A,B) DATA SETS: LWTR.01T
1      8016, .66460      14000, .33216      92233, .00000      92234, .00000
      92236, .00000      93237, .00000      92235, .00002      92238, .00320
      94238, .00000      94239, .00001      94240, .00000      94241, .00000

```

94242,	.00000	95241,	.00000	95242,	.00000	95243,	.00000
96245,	.00000						

MATERIAL NUMBER	COMPONENT NUCLIDE, MASS FRACTION							
3	6000,	.00030	7014,	.00100	14000,	.00750	15031,	.00045
	16032,	.00030	24000,	.19000	25055,	.02000	26000,	.68045
	28000,	.10000						
2	1001,	.11191	8016,	.88809				
1	8016,	.51282	14000,	.45004	92233,	.00000	92234,	.00000
	92236,	.00001	93237,	.00001	92235,	.00017	92238,	.03674
	94238,	.00005	94239,	.00012	94240,	.00002	94241,	.00001
	94242,	.00000	95241,	.00000	95242,	.00000	95243,	.00000
	96245,	.00000						

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1 2	1.00309E-05	1.00000E-04	.00000E+00	2.51903E+06	2.51903E+02	0	
2 3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3 4	1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4 5	8.27954E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5 6	8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6 7	8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7 8	1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8 9	1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
1 1	.00000E+00	.00000E+00	INFINITE
2 2	.00000E+00	1.63839E+04	
3 3	.00000E+00	2.91864E+03	
4 4	.00000E+00	.00000E+00	INFINITE
5 5	.00000E+00	.00000E+00	INFINITE
6 6	.00000E+00	.00000E+00	INFINITE
7 7	.00000E+00	.00000E+00	INFINITE
8 8	.00000E+00	.00000E+00	INFINITE
9 9	.00000E+00	1.96800E+04	
10 10	.00000E+00	1.96800E+04	
11 11	.00000E+00	1.96800E+04	
12 12	.00000E+00	1.96800E+04	
13 13	.00000E+00	.00000E+00	NOT A BOUNDARY
14 14	.00000E+00	.00000E+00	INFINITE
15 19	.00000E+00	.00000E+00	NOT A BOUNDARY
16 20	.00000E+00	1.63839E+04	
17 21	.00000E+00	.00000E+00	NOT A BOUNDARY
18 22	.00000E+00	.00000E+00	NOT A BOUNDARY
19 23	.00000E+00	.00000E+00	NOT A BOUNDARY
20 24	.00000E+00	.00000E+00	NOT A BOUNDARY
21 25	.00000E+00	.00000E+00	NOT A BOUNDARY

1CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-05	1.00000E-04	2.51903E+06	2.51903E+02	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.27954E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-05	1.00000E-04	.00000E+00	.00000E+00	0	1.0000E+00

TOTAL 2.52367E+06 3.68552E+04
1SURFACES

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2 REFL.	PZ	.0000000E+00
3	3	PZ	1.3713000E+02
4	4	PZ	1.3871750E+02
5	5	PX	-3.2000000E+01
6	6	PX	3.2000000E+01
7	7	PY	-3.2000000E+01
8	8	PY	3.2000000E+01
9	9 REFL.	PX	-6.3999900E+01
10	10 REFL.	PX	6.3999900E+01
11	11 REFL.	PY	-6.3999900E+01
12	12 REFL.	PY	6.3999900E+01
13	13	CZ	7.8450000E+01
14	14	CZ	3.0480000E+01
15	19	CZ	8.0450000E+01
16	20	PZ	1.5375000E+02
17	21	PZ	1.5625000E+02
18	22	CZ	8.5450000E+01
19	23	PZ	1.6250000E+02
20	24	PZ	1.7100000E+02
21	25	PZ	2.0148000E+02

WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.

WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL TMP 1
2 2.5300E-08

4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

8 WARNING MESSAGES SO FAR.

1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE LENGTH

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY	(1301)	79/07/31.
6000.50C	16126	NJOY	(1306)	79/07/31.
7014.50C	22772	NJOY	(1275)	79/09/08.
8016.50C	23669	NJOY	(1276)	05/14/81
24000.50C	89104	NJOY	(1324)	79/06/21.
26000.55C	84136	NJOY	(260)	10/21/82
28000.50C	82267	NJOY	(1328)	79/06/21.
92233.50C	14205	NJOY	(1393)	79/09/12.
92235.50C	44188	NJOY	(1395)	79/09/12.
92238.50C	66440	NJOY	(1398)	79/09/13.
94239.55C	67551	NJOY	(1399)	02/21/85
94240.50C	42744	NJOY	(1380)	79/09/13.
TOTAL NU				
TOTAL NU				
TOTAL NU				
TOTAL NU				

TABLES FROM FILE ENDF5P2

14000.50C	48275	NJOY	(1314)	79/06/21.
WARNING. NUBAR OF	92234.50C	MAY BE EITHER PROMPT OR TOTAL.		
92234.50C	76999	NJOY	(1394)	79/10/17.
WARNING. NUBAR OF	92236.50C	MAY BE EITHER PROMPT OR TOTAL.		
92236.50C	119238	NJOY	(1396)	79/08/30.
WARNING. NUBAR OF	94238.50C	MAY BE EITHER PROMPT OR TOTAL.		
94238.50C	16458	NJOY	(1338)	79/09/12.
94241.50C	22523	NJOY	(1381)	79/08/30.
94242.50C	43433	NJOY	(1342)	79/09/06.
TOTAL NU				
TOTAL NU				

TABLES FROM FILE ENDF5U2

15031.50C	2779	NJOY	(1315)	79/10/29.
16032.50C	2684	NJOY	(1316)	79/10/29.
25055.50C	60097	NJOY	(1325)	79/06/21.
WARNING. NUBAR OF	95241.50C	MAY BE EITHER PROMPT OR TOTAL.		
95241.50C	29300	NJOY	(1361)	79/08/29.
WARNING. NUBAR OF	95242.50C	MAY BE EITHER PROMPT OR TOTAL.		
95242.50C	5248	NJOY	(1369)	79/09/24.
WARNING. NUBAR OF	95243.50C	MAY BE EITHER PROMPT OR TOTAL.		
95243.50C	51474	NJOY	(1363)	79/08/30.

TABLES FROM FILE RMCCSA2

93237.55C	29142	NJOY	(1337)	04/04/85
TOTAL NU				

TABLES FROM FILE ENDL852

WARNING. NUBAR OF 96245.35C MAY BE EITHER PROMPT OR TOTAL.
 96245.35C 15310 ZA=96245 ENDL-85 85/04/24 T=OK

(93) 86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T 10193 HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN

1001 0 010/22/85

TOTAL 1087508

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
 1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL 63076
 TALLIES 0
 BANK 12403
 CROSS SECTIONS 1087508

TOTAL 1162987

 DUMP NO. 1 ON FILE RUNTP1 NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

16 WARNING MESSAGES SO FAR.
 1 STARTING MCRUN. FIELD LENGTH = 0 CPO = .03

PRINT TABLE 110

DHLWG5-- DWPF GLASS W/ NO ABSORBERS INFINITE ARRAY DRY

NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	1.604E+01	7.069E+00	8.153E+01	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	1.004E+00	5.427E-01
2	-1.404E+01	-8.154E+00	6.211E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	1.004E+00	2.103E+00
3	-1.655E+01	-9.819E-01	5.826E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	1.004E+00	7.596E+00
4	-1.778E+01	-6.853E-02	5.863E+01	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	1.004E+00	4.841E-01
5	-2.263E+01	-6.651E+00	4.696E+01	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	1.004E+00	1.283E+01
6	5.661E+00	3.938E+00	4.293E+01	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	1.004E+00	1.272E+00
7	-1.456E+01	1.435E+01	8.077E+01	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	1.004E+00	8.540E-01
8	1.338E+01	-2.357E+00	7.302E+01	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	1.004E+00	2.474E+00
9	-1.328E+01	1.964E+00	1.174E+02	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	1.004E+00	3.382E-01
10	-1.980E+01	5.048E+00	1.166E+02	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	1.004E+00	7.245E-01
11	-1.403E+01	8.862E+00	1.325E+02	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	1.004E+00	1.448E+00
12	-2.636E+01	1.152E+01	5.523E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	1.004E+00	8.178E-01
13	-1.963E+01	1.450E+01	5.798E+01	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	1.004E+00	2.433E+00
14	-1.125E+01	2.534E+01	9.999E+01	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	1.004E+00	1.272E+00
15	-1.301E+01	9.996E+00	3.985E+00	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	1.004E+00	7.279E-01
16	-1.590E+01	-6.480E+00	3.834E+00	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	1.004E+00	1.289E+00
17	-2.781E+01	-1.345E+00	6.887E+00	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	1.004E+00	1.889E+00
18	1.673E+01	-1.133E+00	2.278E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	1.004E+00	1.471E+00
19	1.880E+00	-1.860E+01	4.437E+01	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	1.004E+00	2.587E+00
20	-1.679E+01	-7.874E+00	6.024E+00	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	1.004E+00	8.904E-01
21	8.284E+00	-1.220E+01	5.377E+01	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	1.004E+00	1.268E+00
22	3.316E+00	-3.008E+00	6.969E+01	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	1.004E+00	8.271E-01
23	-4.020E+00	1.853E+01	3.383E+01	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	1.004E+00	4.994E-01

24	-1.349E+00	-1.066E+01	9.331E+00	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	1.004E+00	2.981E+00
25	-7.675E+00	-2.432E+01	7.900E+01	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	1.004E+00	1.920E+00
26	3.672E-01	-1.629E+01	8.039E+01	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	1.004E+00	1.620E+00
27	6.980E-01	-2.660E+01	7.162E+01	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	1.004E+00	5.124E+00
28	1.429E+01	1.768E+01	6.169E+01	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	1.004E+00	8.025E-01
29	1.425E+01	1.985E+01	6.938E+01	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	1.004E+00	4.400E+00
30	1.860E+01	-2.264E+00	6.782E+01	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	1.004E+00	2.986E+00
31	4.635E+00	1.245E+00	5.751E+01	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	1.004E+00	3.598E+00
32	-1.302E+00	-4.053E+00	5.742E+01	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	1.004E+00	3.202E-01
33	-1.209E+01	-3.040E+00	5.687E+01	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	1.004E+00	2.405E+00
34	-1.658E+01	-1.213E+00	6.978E+01	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	1.004E+00	1.705E+00
35	-1.946E+01	-5.008E-01	7.699E+01	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	1.004E+00	2.876E+00
36	-1.850E+01	-7.956E+00	7.825E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	1.004E+00	1.206E+00
37	2.874E+01	-6.390E+00	6.578E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	1.004E+00	1.718E+00
38	-3.818E+00	-6.804E+00	4.957E+01	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	1.004E+00	2.359E+00
39	-9.933E+00	4.181E+00	6.604E+01	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	1.004E+00	3.830E-01
40	-3.568E+00	1.013E+01	6.501E+01	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	1.004E+00	7.904E-01
41	-5.028E+00	9.074E+00	6.840E+01	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	1.004E+00	5.390E+00
42	2.745E+01	-1.997E+00	3.511E+00	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	1.004E+00	2.418E+00
43	2.241E+01	-8.853E+00	3.652E+01	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	1.004E+00	2.620E+00
44	7.053E+00	-2.440E+00	4.083E+01	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	1.004E+00	1.618E+00
45	-8.744E+00	1.862E+01	5.393E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	1.004E+00	2.388E+00
46	-9.649E+00	1.978E+01	5.180E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	1.004E+00	3.319E-01
47	-1.188E+01	2.298E+01	5.805E+01	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	1.004E+00	2.063E+00
48	-1.180E+01	2.058E+01	5.335E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	1.004E+00	1.597E+00
49	-1.139E+01	-1.500E+01	9.337E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	1.004E+00	2.961E+00
50	1.599E+01	2.459E+01	5.713E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	1.004E+00	1.817E+00

CYCLE 1 K(COLLISION) .117542 REMOVAL LIFETIME(ABS) 1.0973E+04 SOURCE POINTS GENERATED 2010
WARNING. WEIGHT OF SOURCE PARTICLE IS BELOW CUTOFF.
NPS = 499 IJK = 25859221408705 WGT = 2.48756E-01

CYCLE 2 K(COLLISION) .114594 REMOVAL LIFETIME(ABS) 1.1177E+04 SOURCE POINTS GENERATED 479

CYCLE 3 K(COLLISION) .130086 REMOVAL LIFETIME(ABS) 1.1826E+04 SOURCE POINTS GENERATED 554

CYCLE 4 K(COLLISION) .123662 REMOVAL LIFETIME(ABS) 1.1289E+04 SOURCE POINTS GENERATED 446

CYCLE 5 K(COLLISION) .118571 REMOVAL LIFETIME(ABS) 1.2602E+04 SOURCE POINTS GENERATED 502

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .121817 REMOVAL LIFETIME(ABS) 1.1426E+04 SOURCE POINTS GENERATED 504

ESTIMATOR	CYCLE	7	AVE OF	2	CYCLES	COMBINATION	SIMPLE AVERAGE		COMBINED AVERAGE		CORR
K(COLLISION)	.120799		.121308	.0042		K(COL/ABS)	.000000	.0000	.000000	.0000	.0000
K(ABSORPTION)	.143253		.138364	.0353		K(ABS/TK LN)	.000000	.0000	.000000	.0000	.0000
K(TRK LENGTH)	.122783		.122551	.0019		K(TK LN/COL)	.000000	.0000	.000000	.0000	.0000
REM LIFE(COL)	1.2128E+04		1.1796E+04	.0281							
REM LIFE(ABS)	1.1836E+04		1.1631E+04	.0176		LIFE(COL/ABS)	.0000E+00	.0000	.0000E+00	.0000	.0000
SOURCE POINTS GENERATED			474								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 7

ESTIMATOR	CYCLE	8	AVE OF	3	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.133822		.125479	.0333	K(COL/ABS)	.125231 .0381	.125363 .0050	-.9905
K(ABSORPTION)		.098221		.124983	.1094	K(ABS/TK LN)	.125773 .0391	.126209 .0084	-.9710
K(TRK LENGTH)		.134589		.126563	.0317	K(TK LN/COL)	.126021 .0325	.129578 .0579	.9946
REM LIFE(COL)		1.3991E+04		1.2528E+04	.0604				
REM LIFE(ABS)		1.3144E+04		1.2135E+04	.0427	LIFE(COL/ABS)	1.2332E+04 .0517	1.1288E+04 .0063	.9997

SOURCE POINTS GENERATED 517

ESTIMATOR	CYCLE	9	AVE OF	4	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.123302		.124935	.0241	K(COL/ABS)	.125938 .0274	.125402 .0031	-.9907
K(ABSORPTION)		.132814		.126941	.0777	K(ABS/TK LN)	.126486 .0280	.126235 .0051	-.9720
K(TRK LENGTH)		.124436		.126032	.0229	K(TK LN/COL)	.125483 .0235	.129147 .0364	.9948
REM LIFE(COL)		1.1418E+04		1.2250E+04	.0492	K(COL/ABS/TK LN)	.125969 .0112	.124220 .0020	
REM LIFE(ABS)		1.1832E+04		1.2059E+04	.0310	LIFE(COL/ABS)	1.2155E+04 .0398	1.1847E+04 .0246	.9624
SOURCE POINTS GENERATED									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 9

ESTIMATOR	CYCLE	10	AVE OF	5	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.123229		.124594	.0189	K(COL/ABS)	.123803 .0276	.124285 .0105	-.8056
K(ABSORPTION)		.107302		.123013	.0699	K(ABS/TK LN)	.124254 .0285	.125040 .0119	-.7339
K(TRK LENGTH)		.123347		.125495	.0183	K(TK LN/COL)	.125044 .0186	.126144 .0248	.9909
REM LIFE(COL)		1.0002E+04		1.1801E+04	.0549	K(COL/ABS/TK LN)	.124367 .0156	.121390 .0191	
REM LIFE(ABS)		1.0141E+04		1.1676E+04	.0412	LIFE(COL/ABS)	1.1738E+04 .0477	1.1481E+04 .0351	.9713
SOURCE POINTS GENERATED									

ESTIMATOR	CYCLE	11	AVE OF	6	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.110636		.122267	.0247	K(COL/ABS)	.121346 .0307	.121923 .0234	-.2144
K(ABSORPTION)		.107479		.120424	.0621	K(ABS/TK LN)	.121602 .0323	.122338 .0264	-.1072
K(TRK LENGTH)		.109208		.122780	.0269	K(TK LN/COL)	.122524 .0257	.120414 .0237	.9931
REM LIFE(COL)		9.2737E+03		1.1380E+04	.0594	K(COL/ABS/TK LN)	.121824 .0246	.118920 .0108	
REM LIFE(ABS)		9.5221E+03		1.1317E+04	.0470	LIFE(COL/ABS)	1.1348E+04 .0530	1.1189E+04 .0375	.9811
SOURCE POINTS GENERATED									

ESTIMATOR	CYCLE	12	AVE OF	7	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.119821		.121918	.0211	K(COL/ABS)	.121491 .0259	.121756 .0194	-.2250
K(ABSORPTION)		.124910		.121065	.0525	K(ABS/TK LN)	.121834 .0273	.122314 .0219	-.1128
K(TRK LENGTH)		.121547		.122604	.0228	K(TK LN/COL)	.122261 .0219	.120063 .0216	.9905
REM LIFE(COL)		1.1489E+04		1.1395E+04	.0502	K(COL/ABS/TK LN)	.121862 .0208	.118568 .0150	
REM LIFE(ABS)		1.1446E+04		1.1335E+04	.0397	LIFE(COL/ABS)	1.1365E+04 .0447	1.1214E+04 .0311	.9810
SOURCE POINTS GENERATED									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 12

ESTIMATOR	CYCLE	13	AVE OF	8	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.119098		.121565	.0186	K(COL/ABS)	.121894 .0226	.121691 .0166	-.2497
K(ABSORPTION)		.130323		.122222	.0460	K(ABS/TK LN)	.122171 .0237	.122139 .0188	-.1486
K(TRK LENGTH)		.118727		.122119	.0202	K(TK LN/COL)	.121842 .0193	.120070 .0182	.9900
REM LIFE(COL)		1.0663E+04		1.1304E+04	.0445	K(COL/ABS/TK LN)	.121969 .0180	.119627 .0133	
REM LIFE(ABS)		1.1048E+04		1.1299E+04	.0346	LIFE(COL/ABS)	1.1302E+04 .0394	1.1292E+04 .0272	.9773
SOURCE POINTS GENERATED									

ESTIMATOR	CYCLE	14	AVE OF	9	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.119785		.121368	.0165	K(COL/ABS)	.122909 .0214	.121908 .0147	-.2672
K(ABSORPTION)		.142282		.124451	.0437	K(ABS/TK LN)	.123147 .0222	.122316 .0165	-.1861
K(TRK LENGTH)		.119632		.121843	.0180	K(TK LN/COL)	.121605 .0172	.120088 .0158	.9897
REM LIFE(COL)		1.0824E+04		1.1250E+04	.0398	K(COL/ABS/TK LN)	.122554 .0165	.120458 .0130	
REM LIFE(ABS)		1.1247E+04		1.1294E+04	.0306	LIFE(COL/ABS)	1.1272E+04 .0349	1.1364E+04 .0247	.9722
SOURCE POINTS GENERATED									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 14

ESTIMATOR	CYCLE	15	AVE OF	10	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.111897		.120421	.0168	K(COL/ABS)	.122359 .0198	.121178 .0149	-.2212
K(ABSORPTION)		.122911		.124297	.0391	K(ABS/TK LN)	.122561 .0205	.121536 .0165	-.1506
K(TRK LENGTH)		.111666		.120825	.0183	K(TK LN/COL)	.120623 .0175	.119130 .0156	.9919

REM LIFE(COL)	1.0421E+04	1.1167E+04	.0366	K(COL/ABS/TK LN)	.121848	.0159	.119803	.0126	
REM LIFE(ABS)	1.0800E+04	1.1244E+04	.0278	LIFE(COL/ABS)	1.1206E+04	.0320	1.1368E+04	.0219	.9721
SOURCE POINTS GENERATED	436								

ESTIMATOR	CYCLE	16	AVE OF	11	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.119220		.120311	.0152	K(COL/ABS)	.121333	.0199	.120652 .0139 -.1780
K(ABSORPTION)		.102932		.122355	.0393	K(ABS/TK LN)	.121552	.0205	.121032 .0153 -.1224
K(TRK LENGTH)		.119996		.120750	.0166	K(TK LN/COL)	.120531	.0159	.118949 .0142 .9917
REM LIFE(COL)	1.1143E+04		1.1165E+04		.0331	K(COL/ABS/TK LN)	.121139	.0156	.119214 .0129
REM LIFE(ABS)	1.1088E+04		1.1230E+04		.0252	LIFE(COL/ABS)	1.1198E+04	.0289	1.1333E+04 .0200 .9712
SOURCE POINTS GENERATED	569								

ESTIMATOR	CYCLE	17	AVE OF	12	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.114281		.119809	.0146	K(COL/ABS)	.120841	.0187	.120153 .0134 -.1381
K(ABSORPTION)		.116574		.121873	.0362	K(ABS/TK LN)	.121044	.0192	.120508 .0147 -.0861
K(TRK LENGTH)		.114321		.120214	.0158	K(TK LN/COL)	.120012	.0152	.118478 .0134 .9923
REM LIFE(COL)	1.0530E+04		1.1112E+04		.0307	K(COL/ABS/TK LN)	.120632	.0149	.118759 .0123
REM LIFE(ABS)	1.0525E+04		1.1171E+04		.0237	LIFE(COL/ABS)	1.1142E+04	.0270	1.1263E+04 .0193 .9699
SOURCE POINTS GENERATED	471								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 17

ESTIMATOR	CYCLE	18	AVE OF	13	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.114071		.119367	.0140	K(COL/ABS)	.120222	.0180	.119638 .0131 -.0798
K(ABSORPTION)		.111522		.121077	.0342	K(ABS/TK LN)	.120327	.0188	.119835 .0147 -.0137
K(TRK LENGTH)		.111931		.119577	.0156	K(TK LN/COL)	.119472	.0147	.118761 .0122 .9898
REM LIFE(COL)	9.4524E+03		1.0985E+04		.0309	K(COL/ABS/TK LN)	.120007	.0148	.119014 .0105
REM LIFE(ABS)	9.5123E+03		1.1044E+04		.0249	LIFE(COL/ABS)	1.1014E+04	.0277	1.1135E+04 .0215 .9707
SOURCE POINTS GENERATED	503								

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.116558		.119167	.0131	K(COL/ABS)	.120857	.0174	.119685 .0121 -.1200
K(ABSORPTION)		.141671		.122548	.0335	K(ABS/TK LN)	.120925	.0180	.119853 .0136 -.0691
K(TRK LENGTH)		.115718		.119301	.0146	K(TK LN/COL)	.119234	.0138	.118779 .0113 .9896
REM LIFE(COL)	9.3850E+03		1.0870E+04		.0307	K(COL/ABS/TK LN)	.120339	.0139	.119298 .0101
REM LIFE(ABS)	9.7373E+03		1.0950E+04		.0248	LIFE(COL/ABS)	1.0910E+04	.0276	1.1086E+04 .0207 .9741
SOURCE POINTS GENERATED	482								

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.113092		.118762	.0127	K(COL/ABS)	.119740	.0188	.118975 .0124 .0120
K(ABSORPTION)		.095093		.120717	.0351	K(ABS/TK LN)	.119820	.0192	.119148 .0137 .0370
K(TRK LENGTH)		.113633		.118923	.0140	K(TK LN/COL)	.118843	.0133	.118322 .0113 .9892
REM LIFE(COL)	1.1224E+04		1.0894E+04		.0286	K(COL/ABS/TK LN)	.119468	.0149	.118533 .0112
REM LIFE(ABS)	1.0990E+04		1.0953E+04		.0231	LIFE(COL/ABS)	1.0923E+04	.0257	1.1048E+04 .0195 .9721
SOURCE POINTS GENERATED	510								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 20

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.103893		.117832	.0143	K(COL/ABS)	.119075	.0186	.118167 .0139 .0654
K(ABSORPTION)		.114304		.120317	.0331	K(ABS/TK LN)	.119144	.0190	.118328 .0150 .0838
K(TRK LENGTH)		.103694		.117972	.0155	K(TK LN/COL)	.117902	.0149	.117416 .0131 .9917
REM LIFE(COL)	8.1866E+03		1.0725E+04		.0314	K(COL/ABS/TK LN)	.118707	.0155	.117744 .0129
REM LIFE(ABS)	8.5545E+03		1.0803E+04		.0259	LIFE(COL/ABS)	1.0764E+04	.0285	1.0954E+04 .0214 .9788
SOURCE POINTS GENERATED	445								

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.114536		.117639	.0136	K(COL/ABS)	.118750	.0177	.117930 .0132 .0791
K(ABSORPTION)		.112565		.119861	.0315	K(ABS/TK LN)	.118846	.0180	.118132 .0142 .0928
K(TRK LENGTH)		.115577		.117831	.0146	K(TK LN/COL)	.117735	.0141	.117118 .0127 .9910

REM LIFE(COL)	1.0996E+04	1.0741E+04	.0295	K(COL/ABS/TK LN)	.118443	.0147	.117408	.0126	
REM LIFE(ABS)	1.0961E+04	1.0812E+04	.0243	LIFE(COL/ABS)	1.0776E+04	.0268	1.0950E+04	.0201	.9787
SOURCE POINTS GENERATED 568									

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.115428		.117516	.0128	K(COL/ABS)	.118571	.0168	.117790 .0125 .0840
K(ABSORPTION)		.115648		.119627	.0298	K(ABS/TK LN)	.118719	.0171	.118079 .0133 .0934
K(TRK LENGTH)		.117480		.117811	.0138	K(TK LN/COL)	.117663	.0133	.116892 .0124 .9886
REM LIFE(COL)	1.1095E+04		1.0760E+04		.0279	K(COL/ABS/TK LN)	.118318	.0139	.117178 .0126 .9745
REM LIFE(ABS)	1.1539E+04		1.0853E+04		.0231	LIFE(COL/ABS)	1.0807E+04	.0253	1.1006E+04 .0202 .9745
SOURCE POINTS GENERATED 511									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 23

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.121924		.117748	.0123	K(COL/ABS)	.118498	.0159	.117954 .0119 .0645
K(ABSORPTION)		.112440		.119248	.0284	K(ABS/TK LN)	.118641	.0162	.118221 .0126 .0758
K(TRK LENGTH)		.122056		.118035	.0132	K(TK LN/COL)	.117891	.0127	.117152 .0119 .9887
REM LIFE(COL)	1.1215E+04		1.0784E+04		.0264	K(COL/ABS/TK LN)	.118344	.0132	.117375 .0119 .9746
REM LIFE(ABS)	1.1303E+04		1.0876E+04		.0220	LIFE(COL/ABS)	1.0830E+04	.0240	1.1029E+04 .0191 .9746
SOURCE POINTS GENERATED 536									

ESTIMATOR	CYCLE	25	AVE OF	20	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.110102		.117366	.0121	K(COL/ABS)	.118362	.0152	.117665 .0116 .0530
K(ABSORPTION)		.121438		.119358	.0270	K(ABS/TK LN)	.118521	.0154	.117960 .0122 .0658
K(TRK LENGTH)		.111039		.117685	.0129	K(TK LN/COL)	.117525	.0125	.116784 .0120 .9887
REM LIFE(COL)	1.0340E+04		1.0762E+04		.0252	K(COL/ABS/TK LN)	.118136	.0126	.117097 .0120 .9748
REM LIFE(ABS)	1.0474E+04		1.0856E+04		.0210	LIFE(COL/ABS)	1.0809E+04	.0229	1.1013E+04 .0182 .9748
SOURCE POINTS GENERATED 440									

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP
1PROBLEM SUMMARY

CYCLE = 25

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

+ DHLWG5-- DWPf GLASS W/ NO ABSORBERS INFINITE ARRAY DRY

12/01/95 16:34:51
PROBID = 12/01/95 16:22:05

NEUTRON CREATION	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY	NEUTRON LOSS	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY
SOURCE	13968	8.9490E-01	2.1050E+00	ESCAPE	2991	1.6939E-01	5.1653E-02
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	1.1077E-01	4.0833E-02	WEIGHT CUTOFF	10978	1.1490E-01	4.3788E-02
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	5.9030E-08	DOWNSCATTERING	0	0.	1.9474E+00
				CAPTURE	0	6.8235E-01	9.5254E-02
(N,XN)	2	1.1716E-04	7.2589E-05	LOSS TO (N,XN)	1	5.8580E-05	4.9871E-04
FISSION	0	0.	0.	LOSS TO FISSION	0	3.9086E-02	7.2974E-03
TOTAL	13970	1.0058E+00	2.1459E+00	TOTAL	13970	1.0058E+00	2.1459E+00

NUMBER OF NEUTRONS BANKED 1
 NEUTRON TRACKS PER SOURCE PARTICLE 1.0001E+00
 NEUTRON COLLISIONS PER SOURCE PARTICLE 1.2833E+02
 TOTAL NEUTRON COLLISIONS 1792536

AVERAGE LIFETIME, SHAKES
 ESCAPE 2.9310E+03
 CAPTURE 1.2956E+04
 CAPTURE OR ESCAPE 1.1050E+04

CUTOFFS
 TCO 1.0000E+34
 ECO .0000E+00
 WC1 -5.0000E-01

NET MULTIPLICATION 1.0001E+00 .0026 ANY TERMINATION 1.3225E+04 WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 12.70 MINUTES MAXIMUM NUMBER EVER IN BANK 1
 COMPUTER TIME IN MCRUN 12.67 MINUTES BANK OVERFLOWS TO BACKUP FILE 0
 SOURCE PARTICLES PER MINUTE 1.1027E+03 FIELD LENGTH 0
 RANDOM NUMBERS GENERATED 21137273 MOST RANDOM NUMBERS USED WAS 7074 IN HISTORY 5011

RANGE OF SAMPLED SOURCE WEIGHTS = 2.4876E-01 TO 1.1468E+00

2010 SOURCE PARTICLES HAD WEIGHT BELOW CUTOFF.
 1 NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

CELL	TRACKS ENTERING	POPULATION	COLLISIONS	COLLISIONS * WEIGHT (PER HISTORY)	NUMBER WEIGHTED ENERGY	FLUX WEIGHTED ENERGY	AVERAGE TRACK WEIGHT (RELATIVE)	AVERAGE TRACK MFP (CM)
1	2	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	99705	13969	8.7346E+01	7.3500E-04	2.3015E-01	7.9768E-01	3.9003E+00
5	6	175770	12412	1.3856E+01	1.1045E-03	2.1278E-01	7.9143E-01	1.9766E+00
6	7	2232	1536	2.7776E-01	1.0067E-03	2.3345E-01	7.8167E-01	1.9088E+00
7	8	145884	12061	1.6267E-02	1.1322E-03	2.1908E-01	7.8992E-01	1.0684E+04
8	9	3604	2993	5.8618E-04	1.3097E-03	2.8242E-01	7.9142E-01	1.1827E+04

TOTAL 427195 42971 1792536 1.0150E+02
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-1.6939E-01	-1.6939E-01
3	4	.0000E+00	.0000E+00	.0000E+00	-3.3268E+00	-3.3268E+00
4	5	4.8526E+00	8.9490E-01	.0000E+00	-5.2294E+00	5.1811E-01
5	6	9.9805E+00	.0000E+00	.0000E+00	-9.7775E+00	2.0300E-01
6	7	1.2591E-01	.0000E+00	.0000E+00	-1.2152E-01	4.3918E-03
7	8	8.2632E+00	.0000E+00	.0000E+00	-4.9709E+00	3.2923E+00
8	9	2.0405E-01	.0000E+00	.0000E+00	-1.5728E-04	2.0390E-01

TOTAL 2.3426E+01 8.9490E-01 .0000E+00 .0000E+00 -2.3596E+01 7.2551E-01
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	-1.9465E-03	.0000E+00	.0000E+00	.0000E+00	-1.9465E-03
5	6	.0000E+00	.0000E+00	-2.0352E-03	.0000E+00	.0000E+00	.0000E+00	-2.0352E-03
6	7	.0000E+00	.0000E+00	-1.4938E-04	.0000E+00	.0000E+00	.0000E+00	-1.4938E-04
7	8	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
8	9	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00

TOTAL .0000E+00 .0000E+00 -4.1310E-03 .0000E+00 .0000E+00 .0000E+00 .0000E+00 -4.1310E-03
 1 NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00

4	5	1.1716E-04	.0000E+00	-4.7714E-01	-5.8580E-05	-3.9086E-02	-5.1616E-01
5	6	.0000E+00	.0000E+00	-2.0096E-01	.0000E+00	.0000E+00	-2.0096E-01
6	7	.0000E+00	.0000E+00	-4.2425E-03	.0000E+00	.0000E+00	-4.2425E-03
7	8	.0000E+00	.0000E+00	-9.4399E-06	.0000E+00	.0000E+00	-9.4399E-06
8	9	.0000E+00	.0000E+00	-4.2532E-07	.0000E+00	.0000E+00	-4.2532E-07

TOTAL 1.1716E-04 .0000E+00 -6.8235E-01 -5.8580E-05 -3.9086E-02 -7.2138E-01
 1 NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOSS TO FISSION	WEIGHT GAIN BY (N,XN)	
1	2	1001.50C 8016.50C	6.6667E-01 3.3333E-01	0 0	.0000E+00 .0000E+00	.0000E+00 .0000E+00	.0000E+00 .0000E+00	
3	4	1001.50C 8016.50C	6.6667E-01 3.3333E-01	0 0	.0000E+00 .0000E+00	.0000E+00 .0000E+00	.0000E+00 .0000E+00	
4	5	8016.50C 14000.50C 92233.50C 92234.50C 92236.50C 93237.55C 92235.50C 92238.50C 94238.50C 94239.55C 94240.50C 94241.50C 94242.50C 95241.50C 95242.50C 95243.50C 96245.35C	6.6460E-01 3.3216E-01 8.6523E-12 2.8883E-07 9.0980E-07 6.5664E-07 1.5293E-05 3.1993E-03 4.4872E-06 1.0700E-05 1.9559E-06 8.2819E-07 1.6322E-07 1.6407E-07 7.5762E-11 1.4711E-09 1.9666E-12	1141923 358495 0 5 15 26 556 29098 141 955 299 75 3 9 0 0 0	6.4892E+01 2.0764E+01 .0000E+00 2.7060E-04 8.2566E-04 1.1445E-03 3.4573E-02 1.6106E+00 6.1538E-03 5.7491E-02 1.2804E-02 4.7180E-03 1.4245E-04 3.7837E-04 9.2268E-07 3.5912E-09 8.0508E-09	8.9611E-03 9.0952E-02 .0000E+00 5.2434E-05 3.1273E-04 8.8461E-04 4.2155E-03 3.4369E-01 3.5478E-03 1.2242E-02 1.1186E-02 6.7210E-04 5.5361E-05 3.6731E-04 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 1.4540E-07 1.2373E-05 8.9944E-06 1.3869E-02 2.4535E-03 2.9033E-04 2.0594E-02 4.9068E-06 1.8511E-03 5.0150E-07 1.9269E-06 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 5.8580E-05 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
5	6	6000.50C 7014.50C 14000.50C 15031.50C 16032.50C 24000.50C 25055.50C 26000.55C 28000.50C	1.3653E-03 3.9036E-03 1.4597E-02 7.9416E-04 5.1291E-04 1.9975E-01 1.9900E-02 6.6604E-01 9.3142E-02	182 858 995 86 22 36139 16393 158113 42692	1.0296E-02 4.5210E-02 5.7112E-02 4.7108E-03 1.1964E-03 2.0870E+00 9.8775E-01 8.3290E+00 2.3336E+00	2.4632E-07 4.8334E-04 1.7301E-04 1.6985E-05 4.6348E-05 4.1189E-02 2.5049E-02 1.0724E-01 2.6764E-02	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
6	7	6000.50C 7014.50C 14000.50C 15031.50C 16032.50C 24000.50C 25055.50C 26000.55C 28000.50C	1.3653E-03 3.9036E-03 1.4597E-02 7.9416E-04 5.1291E-04 1.9975E-01 1.9900E-02 6.6604E-01 9.3142E-02	3 13 24 0 1 719 325 3175 883	2.0897E-04 6.1983E-04 1.3228E-03 .0000E+00 7.4098E-05 4.1398E-02 2.0012E-02 1.6607E-01 4.8048E-02	3.6740E-10 4.4176E-06 5.1633E-06 .0000E+00 5.8419E-07 8.6766E-04 6.0418E-04 2.2149E-03 5.4559E-04	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00	.0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00 .0000E+00
7	8	1001.50C 8016.50C	6.6667E-01 3.3333E-01	277 24	1.4861E-02 1.4064E-03	9.4384E-06 1.5454E-09	.0000E+00 .0000E+00	.0000E+00 .0000E+00
8	9	1001.50C	6.6667E-01	12	5.8618E-04	4.2532E-07	.0000E+00	.0000E+00

8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
TOTAL		1792536	1.0154E+02	6.8235E-01	3.9086E-02	5.8580E-05
TOTAL OVER ALL CELLS FOR EACH NUCLIDE						
		TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT GAIN BY FISSION	WEIGHT GAIN BY (N,XN)
1001.50C		289	1.5447E-02	9.8637E-06	.0000E+00	.0000E+00
6000.50C		185	1.0505E-02	2.4668E-07	.0000E+00	.0000E+00
7014.50C		871	4.5829E-02	4.8776E-04	.0000E+00	.0000E+00
8016.50C		1141947	6.4893E+01	8.9611E-03	.0000E+00	.0000E+00
14000.50C		359514	2.0823E+01	9.1130E-02	.0000E+00	.0000E+00
15031.50C		86	4.7108E-03	1.6985E-05	.0000E+00	.0000E+00
16032.50C		23	1.2705E-03	4.6932E-05	.0000E+00	.0000E+00
24000.50C		36858	2.1284E+00	4.2057E-02	.0000E+00	.0000E+00
25055.50C		16718	1.0078E+00	2.5653E-02	.0000E+00	.0000E+00
26000.55C		161288	8.4951E+00	1.0945E-01	.0000E+00	.0000E+00
28000.50C		43575	2.3817E+00	2.7310E-02	.0000E+00	.0000E+00
92233.50C		0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C		5	2.7060E-04	5.2434E-05	1.4540E-07	.0000E+00
92235.50C		556	3.4573E-02	4.2155E-03	1.3869E-02	.0000E+00
92236.50C		15	8.2566E-04	3.1273E-04	1.2373E-05	.0000E+00
92238.50C		29098	1.6106E+00	3.4369E-01	2.4535E-03	5.8580E-05
93237.55C		26	1.1445E-03	8.8461E-04	8.9944E-06	.0000E+00
94238.50C		141	6.1538E-03	3.5478E-03	2.9033E-04	.0000E+00
94239.55C		955	5.7491E-02	1.2242E-02	2.0594E-02	.0000E+00
94240.50C		299	1.2804E-02	1.1186E-02	4.9068E-06	.0000E+00
94241.50C		75	4.7180E-03	6.7210E-04	1.8511E-03	.0000E+00
94242.50C		3	1.4245E-04	5.5361E-05	5.0150E-07	.0000E+00
95241.50C		9	3.7837E-04	3.6731E-04	1.9269E-06	.0000E+00
95242.50C		0	9.2268E-07	.0000E+00	.0000E+00	.0000E+00
95243.50C		0	3.5912E-09	.0000E+00	.0000E+00	.0000E+00
96245.35C		0	8.0508E-09	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE RUNTPI NPS = 13968 CTM = 12.67

17 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

COMPUTER TIME = 12.70 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 16:34:51

PROBID = 12/01/95 16:22:05

1MCNP VERSION 4A-B LD=10/04/91 12/01/95 15:50:08

 INP=DHLWG6 OUTP=DHLWG6.O

PROBID = 12/01/95 15:50:08

```

1-   DHLWG6-- DWPF GLASS INFINITE ARRAY Flooded - FISSILE X 100
2-   C      1      2 -1.00 -13 2 -20 IMP:N=1 FILL=3
3-   C      LATTICE OF CANISTERS
4-   2      -1.00 -10 9 -12 11 2 -20 FILL=2 (32.0 32.0 0.) IMP:N=1
5-   3      0      10:-9:12:-11:-2:20 IMP:N=0
6-   C      CANISTER
7-   4      2 -1.00 -6 5 -8 7 LAT=1 U=2 FILL=1 IMP:N=1
8-   5      1 -2.85 -1 -3 IMP:N=1 U=1 $ 5 WT% PU GLASS
9-   6      3 -7.9 -1 -14 -3 IMP:N=1 U=1 $ SS304L CANISTER WALL
10-  7      3 -7.9 -14 3 -4 IMP:N=1 U=1 $ SS304L CANISTER WALL
11-  8      2 -1.00 14 -4 IMP:N=1 U=1 $ WATER AROUND CANISTER
12-  9      2 -1.00 4 IMP:N=1 U=1 $ WATER ABOVE CANISTER / REFLECTED ON CENTERL
13-  C
14-  C      10      4 -8.140 13 -19 2 -20 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER
15-  C      11      4 -8.140 -19 20 -21 IMP:N=1 $ A 516 CARBON STEEL INNER BARRIER L
16-  C      12      2 -1.00 -19 21 -23 IMP:N=1 $ GAP BETWEEN INNER AND OUTER BARRIE
17-  C      13      5 -8.9375 19 -22 2 -23 IMP:N=1 $ C71500 ALLOY INNER BARRIER
18-  C      14      5 -8.9375 -22 23 -24 IMP:N=1 $ C71500 ALLOY INNER BARRIER LI
19-  C      15      2 -1.00 22 2 -24 -16 15 -18 17 IMP:N=1 $ 6" OF WATER REFLECTED AR
20-  C      16      2 -1.00 24 -25 -16 15 -18 17 IMP:N=1 $ 12" OF WATER ABOVE CONTA
21-  C      17      0 -2:25:-15:16:-17:18 IMP:N=0 $ ZERO-IMPORTANCE OUTSI
22-
23-  1      CZ 29.528
24-  2*     PZ 0.0
25-  3      PZ 137.13
26-  4      PZ 138.7175
27-  5      PX -32.0
28-  6      PX 32.0
29-  7      PY -32.0
30-  8      PY 32.0
31-  9*     PX -63.9999
32-  10*    PX 63.9999
33-  11*    PY -63.9999
34-  12*    PY 63.9999
35-  13     CZ 78.45
36-  14     CZ 30.48
37-  C      15*   PX -100.74
38-  C      16*   PX 100.74
39-  C      17*   PY -100.74
40-  C      18*   PY 100.74
41-  19     CZ 80.45
42-  20     PZ 153.75
43-  21     PZ 156.25
44-  22     CZ 85.45
45-  23     PZ 162.50
46-  24     PZ 171.0
47-  25     PZ 201.48
48-
49-  KCODE 500 0.03 5 25
50-  C      KSRC 22.78 25.28 16 30.28 22.78 30 22.78 40.28 40 35.28 22.78 100
51-  C      22.78 22.28 150 28.28 22.78 200 22.78 30.28 150 38.28 22.78 250.
52-  C      22.78 -25.28 16 30.28 -22.78 30 22.78 -40.28 40 35.28 -22.78 100
53-  C      22.78 -22.28 150 28.28 -22.78 200 22.78 -30.28 150 38.28 -22.78 250.
54-  C      -22.78 25.28 16 -30.28 22.78 30 -22.78 40.28 40 -35.28 22.78 100
55-  C      -22.78 22.28 150 -28.28 22.78 200 -22.78 30.28 150 -38.28 22.78 250.
56-  C      -22.78 -25.28 16 -30.28 -22.78 30 -22.78 -40.28 40 -35.28 -22.78 100

```

```

57-      C      -22.78 -22.28 150 -28.28 -22.78 200 -22.78 -30.28 150 -38.28 -22.78 250.
58-      C      C71500 D=8.9375 G/CC
59-      M5 25055.50C -0.10 26000.55C -0.70 28000.50C -31.000
WARNING. MATERIAL 5 IS NOT USED IN THE PROBLEM.
60-      C      29000.50C -67.150 82000.50C -0.050
61-      C      ALLOY 825 D=8.140 G/CC
62-      M4 6000.50C -0.05 13027.50C -0.20 14000.50C -0.50
WARNING. MATERIAL 4 IS NOT USED IN THE PROBLEM.
63-      C      16032.50C -0.03 22000.50C -0.90 24000.50C -21.50
64-      C      25055.50C -1.00 26000.55C -28.57 28000.50C -42.00
65-      C      29000.50C -2.25 42000.50C -3.00
66-      C      SS304L D=7.9 G/CC
67-      M3 6000.50C -0.030 7014.50C -0.100 14000.50C -0.75
68-      C      15031.50C -0.045 16032.50C -0.030 24000.50C -19.000
69-      C      25055.50C -2.000 26000.55C -68.045 28000.50C -10.000
70-      M2 1001.50C 2.0 8016.50C 1.0
71-      MT2 LWTR.01T
72-      M1 3006.50C -1.080-1 3007.55C -1.332 5010.50C -6.234-1 $ DHLW GLASS
73-      C      5011.56C -2.509 8016.50C -4.4102+1 9019.50C -3.108-2
74-      C      11023.50C -8.233 12000.50C -8.046-1 13027.50C -2.057
75-      C      14000.50C -2.1967+1 16032.50C -1.263-1 19000.50C -2.916
76-      C      20000.50C -6.458-1 22000.50C -5.823-1 25055.50C -1.520
77-      C      26000.55C -7.211 28000.50C -7.170-1 15031.50C -1.372-2
78-      C      24000.50C -8.055-2 29000.50C -1.489-1 47109.50C -4.906-2
79-      C      56138.50C -8.083-2 82000.50C -5.948-2 17000.50C -1.131-1
80-      C      90232.50C -1.811-1 62149.50C -4.411-4 92233.50C -9.727-9
81-      C      92234.50C -3.261-4 92236.50C -1.036-3 93237.55C -7.509-4
82-      C      92235.50C -1.734 92238.50C -3.674 94238.50C -5.153-3
83-      C      94239.55C -1.234 94240.50C -2.265-3 94241.50C -9.631-4
84-      C      94242.50C -1.906-4 95241.50C -1.908-4 95242.50C -8.847-8
85-      C      95243.50C -1.725-6 96245.35C -2.325-9
86-      PRINT
87-      PRDMP

```

1 INITIAL SOURCE FROM FILE SRCTP

```

ORIGINAL NUMBER OF POINTS 496
POINTS NOT IN ANY CELL 0
POINTS IN CELLS OF ZERO IMPORTANCE 0
POINTS IN VOID CELLS 0
POINTS IN AMBIGUOUS CELLS 0
TOTAL POINTS REJECTED 0
POINTS REMAINING 496
POINTS AFTER EXPANSION OR CONTRACTION 499
NOMINAL SOURCE SIZE 500

```

INITIAL GUESS FOR K(EFF.) .030000

CYCLES TO SKIP BEFORE TALLYING 5

TOTAL FISSION NUBAR DATA ARE BEING USED.
1 MATERIAL COMPOSITION

PRINT TABLE 40

THE SUM OF THE FRACTIONS OF MATERIAL 3 WAS 1.000000E+02

THE SUM OF THE FRACTIONS OF MATERIAL 2 WAS 3.000000E+00

THE SUM OF THE FRACTIONS OF MATERIAL 1 WAS 1.028655E+02

MATERIAL
NUMBER COMPONENT NUCLIDE, ATOM FRACTION

3 6000, .00137 7014, .00390 14000, .01460 15031, .00079
 16032, .00051 24000, .19975 25055, .01990 26000, .66604
 28000, .09314
 2 1001, .66667 8016, .33333
 ASSOCIATED THERMAL S(A,B) DATA SETS: LWTR.01T
 1 3006, .00373 3007, .03939 5010, .01292 5011, .04728
 8016, .57205 9019, .00034 11023, .07430 12000, .00687
 13027, .01582 14000, .16227 16032, .00082 19000, .01547
 20000, .00334 22000, .00252 25055, .00574 26000, .02679
 28000, .00253 15031, .00009 24000, .00032 29000, .00049
 47109, .00009 56138, .00012 82000, .00006 17000, .00066
 90232, .00016 62149, .00000 92233, .00000 92234, .00000
 92236, .00000 93237, .00000 92235, .00153 92238, .00320
 94238, .00000 94239, .00107 94240, .00000 94241, .00000
 94242, .00000 95241, .00000 95242, .00000 95243, .00000
 96245, .00000

MATERIAL
NUMBER COMPONENT NUCLIDE, MASS FRACTION

3 6000, .00030 7014, .00100 14000, .00750 15031, .00045
 16032, .00030 24000, .19000 25055, .02000 26000, .68045
 28000, .10000
 2 1001, .11191 8016, .88809
 1 3006, .00105 3007, .01295 5010, .00606 5011, .02439
 8016, .42873 9019, .00030 11023, .08004 12000, .00782
 13027, .02000 14000, .21355 16032, .00123 19000, .02835
 20000, .00628 22000, .00566 25055, .01478 26000, .07010
 28000, .00697 15031, .00013 24000, .00078 29000, .00145
 47109, .00048 56138, .00079 82000, .00058 17000, .00110
 90232, .00176 62149, .00000 92233, .00000 92234, .00000
 92236, .00001 93237, .00001 92235, .01686 92238, .03572
 94238, .00005 94239, .01200 94240, .00002 94241, .00001
 94242, .00000 95241, .00000 95242, .00000 95243, .00000
 96245, .00000

WARNING. 3 OF THE MATERIALS HAD UNNORMALIZED FRACTIONS.
 1CELL VOLUMES AND MASSES

PRINT TABLE 50

CELL	ATOM DENSITY	GRAM DENSITY	INPUT VOLUME	CALCULATED VOLUME	MASS	PIECES	REASON VOLUME NOT CALCULATED
1 2	1.00309E-01	1.00000E+00	.00000E+00	2.51903E+06	2.51903E+06	0	
2 3	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
3 4	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
4 5	8.04191E-02	2.85000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
5 6	8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
6 7	8.70320E-02	7.90000E+00	.00000E+00	4.63333E+03	3.66033E+04	1	
7 8	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE
8 9	1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	.00000E+00	0	INFINITE

1SURFACE AREAS

PRINT TABLE 50

SURFACE	INPUT AREA	CALCULATED AREA	REASON AREA NOT CALCULATED
---------	---------------	--------------------	-------------------------------

1	1	.00000E+00	.00000E+00	INFINITE
2	2	.00000E+00	1.63839E+04	
3	3	.00000E+00	2.91864E+03	
4	4	.00000E+00	.00000E+00	INFINITE
5	5	.00000E+00	.00000E+00	INFINITE
6	6	.00000E+00	.00000E+00	INFINITE
7	7	.00000E+00	.00000E+00	INFINITE
8	8	.00000E+00	.00000E+00	INFINITE
9	9	.00000E+00	1.96800E+04	
10	10	.00000E+00	1.96800E+04	
11	11	.00000E+00	1.96800E+04	
12	12	.00000E+00	1.96800E+04	
13	13	.00000E+00	.00000E+00	NOT A BOUNDARY
14	14	.00000E+00	.00000E+00	INFINITE
15	19	.00000E+00	.00000E+00	NOT A BOUNDARY
16	20	.00000E+00	1.63839E+04	
17	21	.00000E+00	.00000E+00	NOT A BOUNDARY
18	22	.00000E+00	.00000E+00	NOT A BOUNDARY
19	23	.00000E+00	.00000E+00	NOT A BOUNDARY
20	24	.00000E+00	.00000E+00	NOT A BOUNDARY
21	25	.00000E+00	.00000E+00	NOT A BOUNDARY

1 CELLS

PRINT TABLE 60

CELL	MAT	ATOM DENSITY	GRAM DENSITY	VOLUME	MASS	PIECES	NEUTRON IMPORTANCE
1	2	2S 1.00309E-01	1.00000E+00	2.51903E+06	2.51903E+06	0	1.0000E+00
2	3	0 .00000E+00	.00000E+00	.00000E+00	.00000E+00	0	.0000E+00
3	4	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
4	5	1 8.04191E-02	2.85000E+00	.00000E+00	.00000E+00	0	1.0000E+00
5	6	3 8.70320E-02	7.90000E+00	.00000E+00	.00000E+00	0	1.0000E+00
6	7	3 8.70320E-02	7.90000E+00	4.63333E+03	3.66033E+04	1	1.0000E+00
7	8	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
8	9	2S 1.00309E-01	1.00000E+00	.00000E+00	.00000E+00	0	1.0000E+00
TOTAL				2.52367E+06	2.55564E+06		
1 SURFACES							

PRINT TABLE 70

SURFACE	TRANS	TYPE	SURFACE COEFFICIENTS
1	1	CZ	2.9528000E+01
2	2 REFL.	PZ	.0000000E+00
3	3	PZ	1.3713000E+02
4	4	PZ	1.3871750E+02
5	5	PX	-3.2000000E+01
6	6	PX	3.2000000E+01
7	7	PY	-3.2000000E+01
8	8	PY	3.2000000E+01
9	9 REFL.	PX	-6.3999900E+01
10	10 REFL.	PX	6.3999900E+01
11	11 REFL.	PY	-6.3999900E+01
12	12 REFL.	PY	6.3999900E+01
13	13	CZ	7.8450000E+01
14	14	CZ	3.0480000E+01
15	19	CZ	8.0450000E+01
16	20	PZ	1.5375000E+02
17	21	PZ	1.5625000E+02
18	22	CZ	8.5450000E+01
19	23	PZ	1.6250000E+02
20	24	PZ	1.7100000E+02

21 25 PZ 2.0148000E+02

WARNING. SURFACE 13 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 19 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 21 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 22 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 23 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 24 IS NOT USED FOR ANYTHING.
 WARNING. SURFACE 25 IS NOT USED FOR ANYTHING.
 1 TEMPERATURES OF THE CELLS.

PRINT TABLE 72

TIME: .0000E+00

CELL	TMP 1
2	2.5300E-08
4	2.5300E-08
5	2.5300E-08
6	2.5300E-08
7	2.5300E-08
8	2.5300E-08
9	2.5300E-08

10 WARNING MESSAGES SO FAR.
 1CROSS-SECTION TABLES

PRINT TABLE 100

TABLE LENGTH

TABLES FROM FILE RMCCS2

1001.50C	1153	NJOY
3006.50C	6551	NJOY
3007.55C	11053	NJOY
5010.50C	9587	NJOY
6000.50C	16126	NJOY
7014.50C	22772	NJOY
8016.50C	23669	NJOY
13027.50C	22891	NJOY
24000.50C	89104	NJOY
26000.55C	84136	NJOY
28000.50C	82267	NJOY
29000.50C	22473	NJOY
56138.50C	2479	NJOY
82000.50C	28695	NJOY
92233.50C	14205	NJOY
92235.50C	44188	NJOY
92238.50C	66440	NJOY
94239.55C	67551	NJOY
94240.50C	42744	NJOY

TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU
 TOTAL NU

(1301)	79/07/31.
(1303)	79/08/01.
(3007)	07/29/82
(1305)	79/09/10.
(1306)	79/07/31.
(1275)	79/09/08.
(1276)	05/14/81
(1313)	79/09/08.
(1324)	79/06/21.
(260)	10/21/82
(1328)	79/06/21.
(1329)	02/05/80
(1353)	79/06/21.
(1382)	03/10/82
(1393)	79/09/12.
(1395)	79/09/12.
(1398)	79/09/13.
(1399)	02/21/85
(1380)	79/09/13.

TABLES FROM FILE NEWXS2

5011.56C 28379

06/28/88

TABLES FROM FILE ENDF5P2

9019.50C 20657 NJOY
 11023.50C 36270 NJOY
 14000.50C 48275 NJOY
 17000.50C 12269 NJOY

(1309) 79/06/22.
 (1311) 79/06/21.
 (1314) 79/06/21.
 (1149) 79/10/29.

WARNING. NUBAR OF 92234.50C MAY BE EITHER PROMPT OR TOTAL.
 92234.50C 76999 NJOY

(1394) 79/10/17.

WARNING. NUBAR OF 92236.50C MAY BE EITHER PROMPT OR TOTAL.
 92236.50C 119238 NJOY

(1396) 79/08/30.

WARNING. NUBAR OF 94238.50C MAY BE EITHER PROMPT OR TOTAL.
 94238.50C 16458 NJOY
 94241.50C 22523 NJOY
 94242.50C 43433 NJOY

TOTAL NU
 TOTAL NU

(1338) 79/09/12.
 (1381) 79/08/30.
 (1342) 79/09/06.

TABLES FROM FILE ENDF5U2

12000.50C 39283 NJOY
 15031.50C 2779 NJOY
 16032.50C 2684 NJOY
 19000.50C 9766 NJOY
 20000.50C 26104 NJOY
 22000.50C 25231 NJOY
 25055.50C 60097 NJOY
 62149.50C 11116 NJOY
 90232.50C 95614 NJOY

TOTAL NU

(1312) 79/08/30.
 (1315) 79/10/29.
 (1316) 79/10/29.
 (1150) 79/10/29.
 (1320) 79/06/22.
 (1322) 79/06/21.
 (1325) 79/06/21.
 (1319) 02/12/85
 (1390) 07/10/80

WARNING. NUBAR OF 95241.50C MAY BE EITHER PROMPT OR TOTAL.
 95241.50C 29300 NJOY

(1361) 79/08/29.

WARNING. NUBAR OF 95242.50C MAY BE EITHER PROMPT OR TOTAL.
 95242.50C 5248 NJOY

(1369) 79/09/24.

WARNING. NUBAR OF 95243.50C MAY BE EITHER PROMPT OR TOTAL.
 95243.50C 51474 NJOY

(1363) 79/08/30.

TABLES FROM FILE RMCCSA2

47109.50C 10147 NJOY
 93237.55C 29142 NJOY

TOTAL NU

(1373) 11/01/85
 (1337) 04/04/85

TABLES FROM FILE ENDL852

WARNING. NUBAR OF 96245.35C MAY BE EITHER PROMPT OR TOTAL.
 96245.35C 15310 ZA=96245 ENDL-85 85/04/24 T=0K

(93) 86/04/23

TABLES FROM FILE TMCCS2

LWTR.01T 10193 HYDROGEN IN LIGHT WATER AT 300 DEGREES KELVIN

1001 0 010/22/85

TOTAL 1506073

WARNING. NEUTRON ENERGY CUTOFF IS BELOW SOME CROSS-SECTION TABLES.
 1DECIMAL WORDS OF DYNAMICALLY ALLOCATED STORAGE

GENERAL
 TALLIES

66802
 0

BANK 12403
 CROSS SECTIONS 1506073
 TOTAL 1585278

 DUMP NO. 1 ON FILE RUNTPG NPS = 0 CTM = .00

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 0

18 WARNING MESSAGES SO FAR.
 1 STARTING MCRUN. FIELD LENGTH = 0 CPO = .07 PRINT TABLE 110

DHLWG6-- DWPF GLASS INFINITE ARRAY Flooded - FISSILE X 100

	NPS	X	Y	Z	CELL	SURF	U	V	W	TIME	WEIGHT	ENERGY
1	5.327E+00	-2.874E+01	1.150E+02	5	0	5.085E-01	4.733E-01	7.193E-01	.000E+00	1.002E+00	2.566E-02	
2	2.695E+01	6.780E+00	8.574E+01	5	0	8.952E-01	-4.447E-01	-2.944E-02	.000E+00	1.002E+00	1.300E+00	
3	2.682E+01	6.480E+00	8.619E+01	5	0	-6.184E-01	-4.495E-01	6.446E-01	.000E+00	1.002E+00	9.777E-01	
4	2.790E+01	6.571E+00	8.585E+01	5	0	9.710E-01	-5.665E-02	-2.323E-01	.000E+00	1.002E+00	2.458E+00	
5	2.594E+01	8.495E+00	8.797E+01	5	0	5.861E-01	1.496E-01	-7.963E-01	.000E+00	1.002E+00	2.832E+00	
6	2.858E+01	2.653E+00	9.756E+01	5	0	-6.489E-02	-1.626E-01	9.845E-01	.000E+00	1.002E+00	2.780E+00	
7	2.222E+01	1.290E+01	1.301E+01	5	0	-7.068E-02	3.263E-02	-9.970E-01	.000E+00	1.002E+00	2.631E+00	
8	2.148E+01	8.242E+00	1.088E+01	5	0	-3.915E-01	4.664E-01	-7.932E-01	.000E+00	1.002E+00	2.905E-01	
9	1.561E+01	3.978E+00	1.130E+01	5	0	-2.368E-01	9.215E-01	-3.079E-01	.000E+00	1.002E+00	3.910E+00	
10	1.100E+01	2.755E+00	1.104E+01	5	0	1.946E-01	-3.204E-01	9.271E-01	.000E+00	1.002E+00	3.325E-01	
11	3.186E+00	2.081E+01	2.443E+01	5	0	-6.698E-01	-7.177E-01	-1.905E-01	.000E+00	1.002E+00	3.641E+00	
12	5.299E+00	2.109E+01	2.392E+01	5	0	-8.398E-01	-4.129E-01	3.524E-01	.000E+00	1.002E+00	1.220E-01	
13	6.064E+00	2.032E+01	1.746E+01	5	0	-1.714E-01	-8.572E-01	4.857E-01	.000E+00	1.002E+00	2.101E-01	
14	6.053E+00	2.022E+01	1.741E+01	5	0	-2.489E-01	-5.118E-01	-8.222E-01	.000E+00	1.002E+00	6.594E-01	
15	-1.501E+01	-1.354E+01	5.114E-01	5	0	-2.959E-01	2.119E-01	9.314E-01	.000E+00	1.002E+00	1.077E+00	
16	1.131E+00	2.288E+00	4.426E+00	5	0	1.395E-01	-9.829E-01	1.202E-01	.000E+00	1.002E+00	2.129E+00	
17	3.630E+00	-1.839E+01	1.977E+01	5	0	6.909E-01	-7.110E-01	1.307E-01	.000E+00	1.002E+00	1.955E+00	
18	3.958E+00	-2.677E+01	4.662E+01	5	0	-6.580E-01	5.320E-01	-5.329E-01	.000E+00	1.002E+00	2.858E+00	
19	-9.792E+00	1.391E+01	9.322E+01	5	0	-9.903E-01	-1.380E-01	1.353E-02	.000E+00	1.002E+00	5.479E+00	
20	-1.033E+01	1.536E+01	8.634E+01	5	0	7.462E-01	4.859E-01	-4.551E-01	.000E+00	1.002E+00	1.370E+00	
21	4.437E+00	2.248E+01	1.004E+02	5	0	-1.977E-01	9.797E-01	3.360E-02	.000E+00	1.002E+00	3.145E+00	
22	4.355E+00	2.248E+01	1.010E+02	5	0	-9.117E-01	-3.647E-01	-1.891E-01	.000E+00	1.002E+00	7.156E-01	
23	1.146E+01	1.853E+01	9.977E+01	5	0	-4.287E-01	8.361E-01	-3.423E-01	.000E+00	1.002E+00	4.486E+00	
24	1.211E+01	2.449E+01	9.178E+01	5	0	1.080E-01	3.412E-01	-9.338E-01	.000E+00	1.002E+00	7.887E-01	
25	1.512E+01	2.357E+01	5.072E+01	5	0	-9.111E-01	-9.012E-03	-4.122E-01	.000E+00	1.002E+00	3.773E+00	
26	2.252E+01	-1.684E+01	4.598E+01	5	0	-2.568E-01	-6.391E-01	-7.249E-01	.000E+00	1.002E+00	6.340E-01	
27	1.654E+01	-1.839E+01	5.248E+01	5	0	-2.912E-01	8.086E-01	5.113E-01	.000E+00	1.002E+00	1.613E+00	
28	5.320E+00	2.726E+01	6.466E+01	5	0	1.472E-01	-9.514E-01	2.705E-01	.000E+00	1.002E+00	7.090E-01	
29	5.652E+00	2.561E+01	6.242E+01	5	0	-6.135E-01	-7.645E-01	-1.978E-01	.000E+00	1.002E+00	9.485E-01	
30	1.531E+01	-3.702E+00	1.301E+02	5	0	-5.702E-01	5.651E-01	-5.963E-01	.000E+00	1.002E+00	6.245E-01	
31	1.320E+01	1.777E+01	1.107E+02	5	0	-6.607E-01	5.373E-01	-5.242E-01	.000E+00	1.002E+00	1.483E+00	
32	1.278E+01	1.430E+01	1.162E+02	5	0	-9.742E-02	-3.639E-01	-9.263E-01	.000E+00	1.002E+00	4.946E-01	
33	9.212E+00	-1.428E+01	1.207E+02	5	0	-1.965E-01	-3.145E-01	-9.287E-01	.000E+00	1.002E+00	2.290E-01	
34	-2.640E+01	1.138E+01	4.135E+01	5	0	4.097E-01	8.465E-01	-3.399E-01	.000E+00	1.002E+00	7.226E-01	
35	-2.089E+01	1.244E+01	1.825E+01	5	0	-4.048E-02	8.831E-01	4.675E-01	.000E+00	1.002E+00	2.376E+00	
36	-9.898E+00	9.764E+00	2.030E+01	5	0	3.371E-01	-9.269E-01	-1.652E-01	.000E+00	1.002E+00	4.150E+00	
37	-6.622E+00	-4.241E+00	2.525E+01	5	0	-1.867E-01	9.756E-01	-1.155E-01	.000E+00	1.002E+00	3.258E+00	
38	-2.057E+00	-5.368E+00	2.716E+01	5	0	-2.616E-01	2.336E-01	-9.365E-01	.000E+00	1.002E+00	1.231E+00	
39	2.045E+01	-2.949E+00	2.149E+01	5	0	9.780E-01	-7.641E-02	-1.939E-01	.000E+00	1.002E+00	2.685E-01	
40	1.999E+01	-6.209E+00	2.240E+01	5	0	2.580E-01	-7.076E-01	6.578E-01	.000E+00	1.002E+00	2.452E+00	
41	2.217E+01	-5.915E+00	2.917E+01	5	0	-3.212E-01	-7.678E-01	-5.543E-01	.000E+00	1.002E+00	1.831E+00	

42	2.151E+01	2.355E+00	3.393E+01	5	0	5.039E-01	-1.460E-01	8.513E-01	.000E+00	1.002E+00	1.234E+00
43	2.367E+01	3.600E+00	3.933E+01	5	0	6.080E-01	5.487E-01	5.738E-01	.000E+00	1.002E+00	5.404E+00
44	2.135E+01	3.269E+00	3.841E+01	5	0	-2.932E-01	9.304E-01	-2.199E-01	.000E+00	1.002E+00	3.557E+00
45	6.618E+00	-2.172E+01	4.997E+01	5	0	-8.475E-01	-3.993E-01	-3.497E-01	.000E+00	1.002E+00	5.718E+00
46	5.920E+00	-2.479E+01	4.218E+01	5	0	1.200E-01	-9.195E-01	-3.743E-01	.000E+00	1.002E+00	1.841E+00
47	3.733E+00	-2.534E+01	4.294E+01	5	0	7.085E-01	5.879E-01	3.904E-01	.000E+00	1.002E+00	3.327E+00
48	3.855E+00	-2.865E+01	2.253E+01	5	0	4.261E-01	9.046E-01	9.254E-03	.000E+00	1.002E+00	4.014E-01
49	2.389E+01	3.497E+00	3.510E+01	5	0	5.431E-01	4.270E-01	-7.230E-01	.000E+00	1.002E+00	2.367E-01
50	1.996E+01	-3.688E+00	3.599E+01	5	0	-1.053E-01	-9.805E-01	1.658E-01	.000E+00	1.002E+00	2.889E+00

CYCLE 1 K(COLLISION) .121848 REMOVAL LIFETIME(ABS) 6.8711E+03 SOURCE POINTS GENERATED 2109
 WARNING. WEIGHT OF SOURCE PARTICLE IS BELOW CUTOFF.
 NPS = 500 IJK = 141599184048461 WGT = 2.37079E-01

CYCLE 2 K(COLLISION) .120429 REMOVAL LIFETIME(ABS) 7.0113E+03 SOURCE POINTS GENERATED 457

CYCLE 3 K(COLLISION) .126672 REMOVAL LIFETIME(ABS) 6.0199E+03 SOURCE POINTS GENERATED 516

CYCLE 4 K(COLLISION) .132820 REMOVAL LIFETIME(ABS) 5.7669E+03 SOURCE POINTS GENERATED 533

CYCLE 5 K(COLLISION) .125459 REMOVAL LIFETIME(ABS) 5.6543E+03 SOURCE POINTS GENERATED 449

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 5

CYCLE 6 K(COLLISION) .136123 REMOVAL LIFETIME(ABS) 5.8115E+03 SOURCE POINTS GENERATED 516

ESTIMATOR	CYCLE	AVE OF	2 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.128257	.132190	.0298	K(COL/ABS)	.000000 .0000	.000000 .0000	.0000
K(ABSORPTION)	.108855	.124862	.1282	K(ABS/TK LN)	.000000 .0000	.000000 .0000	.0000
K(TRK LENGTH)	.126105	.131429	.0405	K(TK LN/COL)	.000000 .0000	.000000 .0000	.0000
REM LIFE(COL)	5.3917E+03	5.5796E+03	.0337	LIFE(COL/ABS)	.0000E+00 .0000	.0000E+00 .0000	.0000
REM LIFE(ABS)	5.4139E+03	5.6127E+03	.0354				
SOURCE POINTS GENERATED	417						

ESTIMATOR	CYCLE	AVE OF	3 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.130090	.131490	.0181	K(COL/ABS)	.129507 .0451	.132382 .0176	.8368
K(ABSORPTION)	.132845	.127523	.0754	K(ABS/TK LN)	.128758 .0481	.130581 .0317	.7534
K(TRK LENGTH)	.127120	.129992	.0261	K(TK LN/COL)	.130741 .0220	.134440 .0123	.9905
REM LIFE(COL)	5.2434E+03	5.4675E+03	.0285	LIFE(COL/ABS)	5.4704E+03 .0307	5.4407E+03 .0210	.9968
REM LIFE(ABS)	5.1942E+03	5.4732E+03	.0330				
SOURCE POINTS GENERATED	479						

ESTIMATOR	CYCLE	AVE OF	4 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.130149	.131155	.0131	K(COL/ABS)	.130173 .0321	.131506 .0127	.7504
K(ABSORPTION)	.134193	.129190	.0542	K(ABS/TK LN)	.129299 .0341	.129443 .0217	.6546
K(TRK LENGTH)	.127654	.129408	.0191	K(TK LN/COL)	.130281 .0160	.134492 .0079	.9900
REM LIFE(COL)	5.4338E+03	5.4591E+03	.0203	K(COL/ABS/TK LN)	.129918 .0265	.134384 .0039	
REM LIFE(ABS)	5.4845E+03	5.4760E+03	.0233	LIFE(COL/ABS)	5.4676E+03 .0218	5.4014E+03 .0182	.9919
SOURCE POINTS GENERATED	466						

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 9

ESTIMATOR	CYCLE	AVE OF	5 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)	.124831	.129890	.0141	K(COL/ABS)	.129693 .0253	.129918 .0160	.5035
K(ABSORPTION)	.130719	.129496	.0419	K(ABS/TK LN)	.129101 .0265	.128613 .0177	.5942
K(TRK LENGTH)	.125901	.128706	.0158	K(TK LN/COL)	.129298 .0146	.129955 .0171	.9104
REM LIFE(COL)	6.1262E+03	5.5925E+03	.0284	K(COL/ABS/TK LN)	.129364 .0211	.129784 .0244	
REM LIFE(ABS)	6.1013E+03	5.6011E+03	.0285	LIFE(COL/ABS)	5.5968E+03 .0284	5.5936E+03 .0329	.9924
SOURCE POINTS GENERATED	492						

ESTIMATOR	CYCLE	11	AVE OF	6 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.130147		.129933 .0115	K(COL/ABS)	.130736 .0220	.129833 .0127	.4691
K(ABSORPTION)		.141754		.131539 .0371	K(ABS/TK LN)	.130283 .0233	.128700 .0141	.6093
K(TRK LENGTH)		.130634		.129028 .0131	K(TK LN/COL)	.129480 .0120	.129995 .0132	.8989
REM LIFE(COL)	5.0441E+03		5.5011E+03	.0288	K(COL/ABS/TK LN)	.130167 .0182	.129689 .0181	
REM LIFE(ABS)	5.0612E+03		5.5111E+03	.0287	LIFE(COL/ABS)	5.5061E+03 .0287	5.5073E+03 .0323	.9949
SOURCE POINTS GENERATED 515								

ESTIMATOR	CYCLE	12	AVE OF	7 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.122233		.128833 .0130	K(COL/ABS)	.130090 .0193	.128859 .0143	.3842
K(ABSORPTION)		.130196		.131347 .0315	K(ABS/TK LN)	.129556 .0206	.127711 .0166	.4872
K(TRK LENGTH)		.120188		.127765 .0149	K(TK LN/COL)	.128299 .0138	.129357 .0144	.9428
REM LIFE(COL)	5.1117E+03		5.4455E+03	.0266	K(COL/ABS/TK LN)	.129315 .0168	.129612 .0207	
REM LIFE(ABS)	5.1038E+03		5.4529E+03	.0268	LIFE(COL/ABS)	5.4492E+03 .0267	5.4444E+03 .0293	.9955
SOURCE POINTS GENERATED 480								

ESTIMATOR	CYCLE	13	AVE OF	8 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.122900		.128091 .0127	K(COL/ABS)	.129333 .0178	.128112 .0138	.4303
K(ABSORPTION)		.125175		.130576 .0280	K(ABS/TK LN)	.129196 .0181	.127788 .0141	.4695
K(TRK LENGTH)		.128173		.127816 .0129	K(TK LN/COL)	.127954 .0123	.127965 .0132	.8252
REM LIFE(COL)	6.0423E+03		5.5201E+03	.0265	K(COL/ABS/TK LN)	.128828 .0151	.127904 .0153	
REM LIFE(ABS)	6.0436E+03		5.5268E+03	.0265	LIFE(COL/ABS)	5.5234E+03 .0264	5.5218E+03 .0286	.9966
SOURCE POINTS GENERATED 495								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 13

ESTIMATOR	CYCLE	14	AVE OF	9 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.127403		.128015 .0112	K(COL/ABS)	.128082 .0186	.128014 .0120	.3754
K(ABSORPTION)		.108734		.128149 .0315	K(ABS/TK LN)	.127951 .0188	.127747 .0122	.4007
K(TRK LENGTH)		.127253		.127753 .0114	K(TK LN/COL)	.127884 .0108	.127894 .0116	.8255
REM LIFE(COL)	5.9264E+03		5.5653E+03	.0245	K(COL/ABS/TK LN)	.127972 .0150	.127886 .0126	
REM LIFE(ABS)	5.9014E+03		5.5684E+03	.0244	LIFE(COL/ABS)	5.5668E+03 .0244	5.5700E+03 .0260	.9967
SOURCE POINTS GENERATED 537								

ESTIMATOR	CYCLE	15	AVE OF	10 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.122808		.127494 .0109	K(COL/ABS)	.127705 .0170	.127496 .0116	.3714
K(ABSORPTION)		.125824		.127916 .0283	K(ABS/TK LN)	.127491 .0173	.127075 .0123	.3837
K(TRK LENGTH)		.120869		.127065 .0116	K(TK LN/COL)	.127280 .0108	.127366 .0114	.8518
REM LIFE(COL)	5.5450E+03		5.5632E+03	.0220	K(COL/ABS/TK LN)	.127492 .0140	.127364 .0124	
REM LIFE(ABS)	5.5486E+03		5.5664E+03	.0218	LIFE(COL/ABS)	5.5648E+03 .0219	5.5680E+03 .0231	.9967
SOURCE POINTS GENERATED 447								

ESTIMATOR	CYCLE	16	AVE OF	11 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.132926		.127988 .0105	K(COL/ABS)	.127009 .0164	.127827 .0108	.1170
K(ABSORPTION)		.107173		.126031 .0300	K(ABS/TK LN)	.126624 .0172	.127180 .0111	.2739
K(TRK LENGTH)		.128736		.127217 .0106	K(TK LN/COL)	.127602 .0101	.127592 .0107	.8291
REM LIFE(COL)	5.2508E+03		5.5348E+03	.0206	K(COL/ABS/TK LN)	.127078 .0131	.127563 .0117	
REM LIFE(ABS)	5.2874E+03		5.5410E+03	.0203	LIFE(COL/ABS)	5.5379E+03 .0204	5.5492E+03 .0213	.9966
SOURCE POINTS GENERATED 532								

ESTIMATOR	CYCLE	17	AVE OF	12 CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.142576		.129203 .0134	K(COL/ABS)	.128060 .0169	.128944 .0137	.2555
K(ABSORPTION)		.136673		.126917 .0281	K(ABS/TK LN)	.127734 .0178	.128414 .0146	.3629
K(TRK LENGTH)		.143210		.128550 .0141	K(TK LN/COL)	.128877 .0135	.129052 .0140	.9164
REM LIFE(COL)	5.1634E+03		5.5039E+03	.0197	K(COL/ABS/TK LN)	.128224 .0148	.128921 .0150	
REM LIFE(ABS)	5.1846E+03		5.5113E+03	.0194	LIFE(COL/ABS)	5.5076E+03 .0196	5.5245E+03 .0202	.9968
SOURCE POINTS GENERATED 540								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 17

ESTIMATOR	CYCLE	18	AVE OF	13	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.130617		.129312	.0123	K(COL/ABS)	.128491 .0159	.129143 .0126	.2637
K(ABSORPTION)		.136705		.127670	.0263	K(ABS/TK LN)	.128330 .0169	.128900 .0139	.3991
K(TRK LENGTH)		.134271		.128990	.0134	K(TK LN/COL)	.129151 .0125	.129273 .0129	.9014
REM LIFE(COL)	5.7819E+03		5.5253E+03		.0185	K(COL/ABS/TK LN)	.128657 .0140	.129155 .0134	
REM LIFE(ABS)	5.7360E+03		5.5286E+03		.0181	LIFE(COL/ABS)	5.5269E+03 .0183	5.5362E+03 .0185	.9962
SOURCE POINTS GENERATED		453							

ESTIMATOR	CYCLE	19	AVE OF	14	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.136854		.129851	.0121	K(COL/ABS)	.129686 .0172	.129843 .0126	.3881
K(ABSORPTION)		.153594		.129522	.0280	K(ABS/TK LN)	.129717 .0188	.129924 .0147	.5528
K(TRK LENGTH)		.141894		.129912	.0142	K(TK LN/COL)	.129881 .0128	.129837 .0125	.9046
REM LIFE(COL)	5.7208E+03		5.5392E+03		.0173	K(COL/ABS/TK LN)	.129761 .0154	.129805 .0130	
REM LIFE(ABS)	5.7133E+03		5.5418E+03		.0169	LIFE(COL/ABS)	5.5405E+03 .0170	5.5480E+03 .0171	.9963
SOURCE POINTS GENERATED		542							

ESTIMATOR	CYCLE	20	AVE OF	15	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.130616		.129902	.0113	K(COL/ABS)	.130176 .0164	.129912 .0117	.3832
K(ABSORPTION)		.143434		.130449	.0268	K(ABS/TK LN)	.130230 .0179	.129994 .0137	.5474
K(TRK LENGTH)		.131404		.130011	.0132	K(TK LN/COL)	.129956 .0120	.129876 .0116	.9046
REM LIFE(COL)	5.3773E+03		5.5284E+03		.0162	K(COL/ABS/TK LN)	.130121 .0146	.129894 .0120	
REM LIFE(ABS)	5.3790E+03		5.5310E+03		.0159	LIFE(COL/ABS)	5.5297E+03 .0160	5.5370E+03 .0161	.9963
SOURCE POINTS GENERATED		460							

ESTIMATOR	CYCLE	21	AVE OF	16	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.122255		.129424	.0112	K(COL/ABS)	.130423 .0155	.129576 .0114	.2530
K(ABSORPTION)		.146004		.131422	.0260	K(ABS/TK LN)	.130450 .0168	.129579 .0135	.4085
K(TRK LENGTH)		.121491		.129479	.0131	K(TK LN/COL)	.129451 .0119	.129408 .0115	.9143
REM LIFE(COL)	6.1115E+03		5.5649E+03		.0164	K(COL/ABS/TK LN)	.130108 .0136	.129639 .0116	
REM LIFE(ABS)	6.1055E+03		5.5669E+03		.0161	LIFE(COL/ABS)	5.5659E+03 .0162	5.5723E+03 .0162	.9969
SOURCE POINTS GENERATED		485							

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP

CYCLE = 21

ESTIMATOR	CYCLE	22	AVE OF	17	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.131561		.129550	.0106	K(COL/ABS)	.130391 .0145	.129683 .0107	.2461
K(ABSORPTION)		.128210		.131233	.0245	K(ABS/TK LN)	.130388 .0158	.129634 .0126	.4051
K(TRK LENGTH)		.130586		.129544	.0123	K(TK LN/COL)	.129547 .0112	.129551 .0108	.9135
REM LIFE(COL)	4.7539E+03		5.5172E+03		.0178	K(COL/ABS/TK LN)	.130109 .0128	.129763 .0109	
REM LIFE(ABS)	4.8531E+03		5.5249E+03		.0170	LIFE(COL/ABS)	5.5210E+03 .0174	5.5604E+03 .0157	.9966
SOURCE POINTS GENERATED		553							

ESTIMATOR	CYCLE	23	AVE OF	18	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.119866		.129012	.0108	K(COL/ABS)	.129943 .0142	.129179 .0110	.2708
K(ABSORPTION)		.124778		.130874	.0233	K(ABS/TK LN)	.129924 .0154	.129104 .0127	.4178
K(TRK LENGTH)		.119295		.128974	.0124	K(TK LN/COL)	.128993 .0114	.129024 .0111	.9248
REM LIFE(COL)	6.2684E+03		5.5589E+03		.0183	K(COL/ABS/TK LN)	.129620 .0127	.129298 .0111	
REM LIFE(ABS)	6.1846E+03		5.5615E+03		.0172	LIFE(COL/ABS)	5.5602E+03 .0177	5.5755E+03 .0149	.9967
SOURCE POINTS GENERATED		464							

ESTIMATOR	CYCLE	24	AVE OF	19	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.125327		.128818	.0104	K(COL/ABS)	.129021 .0153	.128835 .0106	.3046
K(ABSORPTION)		.099529		.129224	.0257	K(ABS/TK LN)	.128926 .0166	.128628 .0125	.4643
K(TRK LENGTH)		.122372		.128627	.0121	K(TK LN/COL)	.128722 .0110	.128890 .0105	.9243
REM LIFE(COL)	6.4850E+03		5.6076E+03		.0192	K(COL/ABS/TK LN)	.128890 .0133	.128978 .0106	
REM LIFE(ABS)	6.4995E+03		5.6109E+03		.0184	LIFE(COL/ABS)	5.6093E+03 .0188	5.6269E+03 .0169	.9970
SOURCE POINTS GENERATED		523							

ESTIMATOR	CYCLE	25	AVE OF	20	CYCLES	COMBINATION	SIMPLE AVERAGE	COMBINED AVERAGE	CORR
K(COLLISION)		.132015		.128978	.0099	K(COL/ABS)	.128917 .0145	.128971 .0101	.2857

K(ABSORPTION)	.121878	.128857	.0246	K(ABS/TK LN)	.128811	.0158	.128767	.0118	.4483
K(TRK LENGTH)	.131406	.128766	.0115	K(TK LN/COL)	.128872	.0105	.129055	.0100	.9247
REM LIFE(COL)	6.4309E+03	5.6488E+03	.0195	K(COL/ABS/TK LN)	.128867	.0127	.129100	.0101	
REM LIFE(ABS)	6.4759E+03	5.6541E+03	.0189	LIFE(COL/ABS)	5.6515E+03	.0192	5.6732E+03	.0185	.9969
SOURCE POINTS GENERATED	507								

SOURCE DISTRIBUTION WRITTEN TO FILE SRCTP CYCLE = 25
1PROBLEM SUMMARY

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

+ DHLWG6-- DWPf GLASS INFINITE ARRAY Flooded - FISSILE X 100

PROBID = 12/01/95 15:58:02
12/01/95 15:50:08

NEUTRON CREATION	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY	NEUTRON LOSS	TRACKS	WEIGHT (PER SOURCE PARTICLE)	ENERGY
SOURCE	13959	8.9548E-01	2.0858E+00	ESCAPE	23	8.7691E-04	5.2750E-04
				ENERGY CUTOFF	0	0.	0.
				TIME CUTOFF	0	0.	0.
WEIGHT WINDOW	0	0.	0.	WEIGHT WINDOW	0	0.	0.
CELL IMPORTANCE	0	0.	0.	CELL IMPORTANCE	0	0.	0.
WEIGHT CUTOFF	0	1.1189E-01	4.1821E-02	WEIGHT CUTOFF	13937	1.1576E-01	4.5710E-02
ENERGY IMPORTANCE	0	0.	0.	ENERGY IMPORTANCE	0	0.	0.
DXTRAN	0	0.	0.	DXTRAN	0	0.	0.
FORCED COLLISIONS	0	0.	0.	FORCED COLLISIONS	0	0.	0.
EXP. TRANSFORM	0	0.	0.	EXP. TRANSFORM	0	0.	0.
UPSCATTERING	0	0.	3.2389E-07	DOWNSCATTERING	0	0.	1.9545E+00
(N,XN)	2	1.2363E-04	9.6171E-05	CAPTURE	0	8.4820E-01	1.0326E-01
FISSION	0	0.	0.	LOSS TO (N,XN)	1	6.1817E-05	7.7828E-04
				LOSS TO FISSION	0	4.2593E-02	2.2951E-02
TOTAL	13961	1.0075E+00	2.1278E+00	TOTAL	13961	1.0075E+00	2.1278E+00

NUMBER OF NEUTRONS BANKED 1
NEUTRON TRACKS PER SOURCE PARTICLE 1.0001E+00
NEUTRON COLLISIONS PER SOURCE PARTICLE 1.2195E+02
TOTAL NEUTRON COLLISIONS 1702231
NET MULTIPLICATION 1.0001E+00 .0027

AVERAGE LIFETIME, SHAKES
ESCAPE 1.2250E+04
CAPTURE 5.7946E+03
CAPTURE OR ESCAPE 5.8009E+03
ANY TERMINATION 7.0027E+03

CUTOFFS
TCO 1.0000E+34
ECO .0000E+00
WC1 -5.0000E-01
WC2 -2.5000E-01

COMPUTER TIME SO FAR IN THIS RUN 7.77 MINUTES
COMPUTER TIME IN MCRUN 7.70 MINUTES
SOURCE PARTICLES PER MINUTE 1.8129E+03
RANDOM NUMBERS GENERATED 14153825

MAXIMUM NUMBER EVER IN BANK 1
BANK OVERFLOWS TO BACKUP FILE 0
FIELD LENGTH 0
MOST RANDOM NUMBERS USED WAS 9686 IN HISTORY 296

RANGE OF SAMPLED SOURCE WEIGHTS = 2.3708E-01 TO 1.1990E+00

2109 SOURCE PARTICLES HAD WEIGHT BELOW CUTOFF.
1NEUTRON ACTIVITY IN EACH CELL

PRINT TABLE 126

CELL	TRACKS ENTERING	POPULATION	COLLISIONS	COLLISIONS * WEIGHT (PER HISTORY)	NUMBER WEIGHTED ENERGY	FLUX WEIGHTED ENERGY	AVERAGE TRACK WEIGHT (RELATIVE)	AVERAGE TRACK MFP (CM)
1	2	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	0	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	26130	13960	382146	2.2358E+01	6.6041E-02	8.3459E-01	3.8231E+00
5	6	30726	10146	37870	1.9556E+00	7.5651E-04	5.6448E-01	2.5721E+00
6	7	698	325	1208	6.0423E-02	9.1385E-04	5.7676E-01	2.7360E+00
7	8	31165	9640	1231096	4.8138E+01	5.2696E-05	2.0931E-01	8.0459E-01
8	9	562	291	49911	1.8606E+00	3.7673E-05	1.7108E-01	7.1226E-01

TOTAL 89281 34362 1702231 7.4373E+01
1NEUTRON WEIGHT BALANCE IN EACH CELL -- EXTERNAL EVENTS

PRINT TABLE 130

CELL	ENTERING	SOURCE	ENERGY CUTOFF	TIME CUTOFF	EXITING	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	-8.7691E-04	-8.7691E-04
3	4	.0000E+00	.0000E+00	.0000E+00	-6.2446E-01	-6.2446E-01
4	5	6.6274E-01	8.9548E-01	.0000E+00	-1.0063E+00	5.5189E-01
5	6	1.7458E+00	.0000E+00	.0000E+00	-1.6548E+00	9.1042E-02
6	7	3.8328E-02	.0000E+00	.0000E+00	-3.5632E-02	2.6962E-03
7	8	1.6303E+00	.0000E+00	.0000E+00	-7.6894E-01	8.6138E-01
8	9	2.9206E-02	.0000E+00	.0000E+00	-1.6273E-02	1.2933E-02

TOTAL 4.1064E+00 8.9548E-01 .0000E+00 .0000E+00 -4.1073E+00 8.9460E-01
1NEUTRON WEIGHT BALANCE IN EACH CELL -- VARIANCE REDUCTION EVENTS

PRINT TABLE 130

CELL	WEIGHT WINDOW	CELL IMPORTANCE	WEIGHT CUTOFF	ENERGY IMPORTANCE	DXTRAN	FORCED COLLISION	EXPONENTIAL TRANSFORM	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	.0000E+00	.0000E+00	-1.1529E-03	.0000E+00	.0000E+00	.0000E+00	-1.1529E-03
5	6	.0000E+00	.0000E+00	-7.9753E-05	.0000E+00	.0000E+00	.0000E+00	-7.9753E-05
6	7	.0000E+00	.0000E+00	-2.8538E-05	.0000E+00	.0000E+00	.0000E+00	-2.8538E-05
7	8	.0000E+00	.0000E+00	-2.3536E-03	.0000E+00	.0000E+00	.0000E+00	-2.3536E-03
8	9	.0000E+00	.0000E+00	-2.5539E-04	.0000E+00	.0000E+00	.0000E+00	-2.5539E-04

TOTAL .0000E+00 .0000E+00 -3.8701E-03 .0000E+00 .0000E+00 .0000E+00 .0000E+00 -3.8701E-03
1NEUTRON WEIGHT BALANCE IN EACH CELL -- PHYSICAL EVENTS

PRINT TABLE 130

CELL	(N,XN)	FISSION	CAPTURE	LOSS TO (N,XN)	LOSS TO FISSION	TOTAL
1	2	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
3	4	.0000E+00	.0000E+00	.0000E+00	.0000E+00	.0000E+00
4	5	1.2363E-04	.0000E+00	-5.0821E-01	-6.1817E-05	-4.2593E-02
5	6	.0000E+00	.0000E+00	-9.0962E-02	.0000E+00	-9.0962E-02
6	7	.0000E+00	.0000E+00	-2.6676E-03	.0000E+00	-2.6676E-03
7	8	.0000E+00	.0000E+00	-2.3678E-01	.0000E+00	-2.3678E-01
8	9	.0000E+00	.0000E+00	-9.5827E-03	.0000E+00	-9.5827E-03

TOTAL 1.2363E-04 .0000E+00 -8.4820E-01 -6.1817E-05 -4.2593E-02 -8.9073E-01
1NEUTRON ACTIVITY OF EACH NUCLIDE IN EACH CELL, PER SOURCE PARTICLE

PRINT TABLE 140

CELL	NUCLIDES	ATOM FRACTION	TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT LOSS TO FISSION	WEIGHT GAIN BY (N,XN)
1	2	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
3	4	1001.50C	6.6667E-01	0	.0000E+00	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	0	.0000E+00	.0000E+00	.0000E+00
4	5	3006.50C	3.7251E-03	1257	6.9386E-02	3.7219E-02	.0000E+00
		3007.55C	3.9389E-02	5914	3.6295E-01	1.6417E-05	.0000E+00
		5010.50C	1.2917E-02	12277	6.1712E-01	4.2223E-01	.0000E+00
		5011.56C	4.7283E-02	18907	1.1015E+00	1.1384E-05	.0000E+00
		8016.50C	5.7205E-01	201320	1.1959E+01	5.5726E-03	.0000E+00
		9019.50C	3.3941E-04	168	1.0087E-02	7.7062E-06	.0000E+00

		11023.50C	7.4299E-02	42611	2.3813E+00	1.2346E-03	.0000E+00	.0000E+00
		12000.50C	6.8682E-03	3665	2.2088E-01	5.5963E-05	.0000E+00	.0000E+00
		13027.50C	1.5817E-02	5816	3.5764E-01	3.3868E-04	.0000E+00	.0000E+00
		14000.50C	1.6227E-01	45530	2.8007E+00	3.5784E-03	.0000E+00	.0000E+00
		16032.50C	8.1958E-04	194	1.2063E-02	8.7664E-05	.0000E+00	.0000E+00
		19000.50C	1.5474E-02	3890	2.3228E-01	3.4836E-03	.0000E+00	.0000E+00
		20000.50C	3.3431E-03	845	5.1123E-02	7.8484E-04	.0000E+00	.0000E+00
		22000.50C	2.5233E-03	3164	1.7206E-01	2.1775E-04	.0000E+00	.0000E+00
		25055.50C	5.7402E-03	10213	5.1813E-01	3.3501E-03	.0000E+00	.0000E+00
		26000.55C	2.6790E-02	14837	8.4114E-01	2.8907E-03	.0000E+00	.0000E+00
		28000.50C	2.5347E-03	2770	1.5266E-01	5.9763E-04	.0000E+00	.0000E+00
		15031.50C	9.1901E-05	22	1.4302E-03	3.1979E-06	.0000E+00	.0000E+00
		24000.50C	3.2141E-04	201	1.1759E-02	3.5936E-05	.0000E+00	.0000E+00
		29000.50C	4.8615E-04	411	2.2899E-02	2.0932E-04	.0000E+00	.0000E+00
		47109.50C	9.3463E-05	91	5.2338E-03	9.3038E-04	.0000E+00	.0000E+00
		56138.50C	1.2161E-04	92	5.5722E-03	4.7622E-06	.0000E+00	.0000E+00
		82000.50C	5.9553E-05	56	3.3104E-03	1.2347E-06	.0000E+00	.0000E+00
		17000.50C	6.6187E-04	184	1.1058E-02	1.9610E-04	.0000E+00	.0000E+00
		90232.50C	1.6193E-04	218	1.2281E-02	6.2182E-04	3.0306E-05	.0000E+00
		62149.50C	6.1454E-07	8	2.8670E-04	2.1820E-04	.0000E+00	.0000E+00
		92233.50C	8.6598E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		92234.50C	2.8908E-07	0	1.0881E-06	.0000E+00	.0000E+00	.0000E+00
		92236.50C	9.1059E-07	0	9.0258E-07	.0000E+00	.0000E+00	.0000E+00
		93237.55C	6.5721E-07	0	1.7115E-06	.0000E+00	.0000E+00	.0000E+00
		92235.50C	1.5306E-03	1962	1.3196E-01	7.4496E-03	2.3234E-02	.0000E+00
		92238.50C	3.2021E-03	4004	2.3120E-01	9.9656E-03	1.7311E-03	.0000E+00
		94238.50C	4.4911E-06	11	6.8126E-04	3.4566E-05	7.2639E-05	.0000E+00
		94239.55C	1.0710E-03	1506	1.0273E-01	6.8532E-03	1.7524E-02	.0000E+00
		94240.50C	1.9576E-06	2	1.3385E-04	5.5540E-06	7.9877E-07	.0000E+00
		94241.50C	8.2892E-07	0	1.8795E-05	.0000E+00	.0000E+00	.0000E+00
		94242.50C	1.6337E-07	0	4.4111E-07	.0000E+00	.0000E+00	.0000E+00
		95241.50C	1.6422E-07	0	1.3992E-06	.0000E+00	.0000E+00	.0000E+00
		95242.50C	7.5829E-11	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		95243.50C	1.4724E-09	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		96245.35C	1.9683E-12	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
5	6	6000.50C	1.3653E-03	22	1.2176E-03	1.1095E-07	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	114	6.0372E-03	2.2838E-04	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	187	1.0362E-02	7.7278E-05	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	13	7.9465E-04	3.8589E-06	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	4	2.7501E-04	2.3309E-05	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	5719	3.0947E-01	1.8204E-02	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	1684	9.1215E-02	8.7786E-03	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	24010	1.2226E+00	5.0935E-02	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	6117	3.1363E-01	1.2711E-02	.0000E+00	.0000E+00
6	7	6000.50C	1.3653E-03	3	1.2766E-04	1.2964E-08	.0000E+00	.0000E+00
		7014.50C	3.9036E-03	6	3.2562E-04	2.3186E-05	.0000E+00	.0000E+00
		14000.50C	1.4597E-02	8	3.7323E-04	3.1257E-06	.0000E+00	.0000E+00
		15031.50C	7.9416E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		16032.50C	5.1291E-04	0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
		24000.50C	1.9975E-01	170	8.9959E-03	5.4862E-04	.0000E+00	.0000E+00
		25055.50C	1.9900E-02	63	3.0819E-03	2.6151E-04	.0000E+00	.0000E+00
		26000.55C	6.6604E-01	760	3.7732E-02	1.4723E-03	.0000E+00	.0000E+00
		28000.50C	9.3142E-02	198	9.7866E-03	3.5886E-04	.0000E+00	.0000E+00
7	8	1001.50C	6.6667E-01	1172975	4.5622E+01	2.3632E-01	.0000E+00	.0000E+00
		8016.50C	3.3333E-01	58121	2.5160E+00	4.5991E-04	.0000E+00	.0000E+00
8	9	1001.50C	6.6667E-01	47712	1.7724E+00	9.5575E-03	.0000E+00	.0000E+00

	8016.50C	3.3333E-01	2199	8.8131E-02	2.5167E-05	.0000E+00	.0000E+00
TOTAL			1702231	7.4416E+01	8.4820E-01	4.2593E-02	6.1817E-05
TOTAL OVER ALL CELLS FOR EACH NUCLIDE			TOTAL COLLISIONS	COLLISIONS * WEIGHT	WEIGHT LOST TO CAPTURE	WEIGHT GAIN BY FISSION	WEIGHT GAIN BY (N,XN)
1001.50C			1220687	4.7395E+01	2.4588E-01	.0000E+00	.0000E+00
3006.50C			1257	6.9386E-02	3.7219E-02	.0000E+00	.0000E+00
3007.55C			5914	3.6295E-01	1.6417E-05	.0000E+00	6.1817E-05
5010.50C			12277	6.1712E-01	4.2223E-01	.0000E+00	.0000E+00
5011.56C			18907	1.1015E+00	1.1384E-05	.0000E+00	.0000E+00
6000.50C			25	1.3453E-03	1.2391E-07	.0000E+00	.0000E+00
7014.50C			120	6.3629E-03	2.5157E-04	.0000E+00	.0000E+00
8016.50C			261640	1.4564E+01	6.0576E-03	.0000E+00	.0000E+00
9019.50C			168	1.0087E-02	7.7062E-06	.0000E+00	.0000E+00
11023.50C			42611	2.3813E+00	1.2346E-03	.0000E+00	.0000E+00
12000.50C			3665	2.2088E-01	5.5963E-05	.0000E+00	.0000E+00
13027.50C			5816	3.5764E-01	3.3868E-04	.0000E+00	.0000E+00
14000.50C			45725	2.8115E+00	3.6588E-03	.0000E+00	.0000E+00
15031.50C			35	2.2248E-03	7.0568E-06	.0000E+00	.0000E+00
16032.50C			198	1.2338E-02	1.1097E-04	.0000E+00	.0000E+00
17000.50C			184	1.1058E-02	1.9610E-04	.0000E+00	.0000E+00
19000.50C			3890	2.3228E-01	3.4836E-03	.0000E+00	.0000E+00
20000.50C			845	5.1123E-02	7.8484E-04	.0000E+00	.0000E+00
22000.50C			3164	1.7206E-01	2.1775E-04	.0000E+00	.0000E+00
24000.50C			6090	3.3022E-01	1.8788E-02	.0000E+00	.0000E+00
25055.50C			11960	6.1243E-01	1.2390E-02	.0000E+00	.0000E+00
26000.55C			39607	2.1014E+00	5.5298E-02	.0000E+00	.0000E+00
28000.50C			9085	4.7607E-01	1.3668E-02	.0000E+00	.0000E+00
29000.50C			411	2.2899E-02	2.0932E-04	.0000E+00	.0000E+00
47109.50C			91	5.2338E-03	9.3038E-04	.0000E+00	.0000E+00
56138.50C			92	5.5722E-03	4.7622E-06	.0000E+00	.0000E+00
62149.50C			8	2.8670E-04	2.1820E-04	.0000E+00	.0000E+00
82000.50C			56	3.3104E-03	1.2347E-06	.0000E+00	.0000E+00
90232.50C			218	1.2281E-02	6.2182E-04	3.0306E-05	.0000E+00
92233.50C			0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
92234.50C			0	1.0881E-06	.0000E+00	.0000E+00	.0000E+00
92235.50C			1962	1.3196E-01	7.4496E-03	2.3234E-02	.0000E+00
92236.50C			0	9.0258E-07	.0000E+00	.0000E+00	.0000E+00
92238.50C			4004	2.3120E-01	9.9656E-03	1.7311E-03	.0000E+00
93237.55C			0	1.7115E-06	.0000E+00	.0000E+00	.0000E+00
94238.50C			11	6.8126E-04	3.4566E-05	7.2639E-05	.0000E+00
94239.55C			1506	1.0273E-01	6.8532E-03	1.7524E-02	.0000E+00
94240.50C			2	1.3385E-04	5.5540E-06	7.9877E-07	.0000E+00
94241.50C			0	1.8795E-05	.0000E+00	.0000E+00	.0000E+00
94242.50C			0	4.4111E-07	.0000E+00	.0000E+00	.0000E+00
95241.50C			0	1.3992E-06	.0000E+00	.0000E+00	.0000E+00
95242.50C			0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
95243.50C			0	.0000E+00	.0000E+00	.0000E+00	.0000E+00
96245.35C			0	.0000E+00	.0000E+00	.0000E+00	.0000E+00

DUMP NO. 2 ON FILE RUNTPG NPS = 13959 CTM = 7.70

19 WARNING MESSAGES SO FAR.

RUN TERMINATED WHEN 25 KCODE CYCLES WERE DONE.

COMPUTER TIME = 7.77 MINUTES

MCNP VERSION 4A-B 10/04/91

12/01/95 15:58:03

PROBID = 12/01/95 15:50:08