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July 30, 1982

CHAPTER 1.0

GENERAL INFORMATION

1.1 Introduction:

This document represents a consolidated application for renewal of Certificate of Compliance 5768, for the Model BB-250-2 shipping container, used for the shipment of fissile material.

1.2 Package Description:

1.2.1 Packaging

1.2.1.1 Model Number: BB-250-2

1.2.1.2 Description:

Inner container is 11-1/2" ID, 16-gauge steel cylinder, 63-1/2" long, with bolted and gasketed top flange closure and seal welded bottom plate. Inner container is centered and supported in a 22-1/2" ID by minimum 74" long 16-gauge steel drum by 1/4" diameter spring steel rods and vermiculite. Maximum weight of packaging and contents is approximately 650 pounds.

1.2.1.3 Drawings:

The BB-250-2 packaging is constructed in accordance with Babcock & Wilcox Drawing 10-F-771 Rev. 4 (included as Appendix A to this application). The outer cover is secure by either a 12-gauge closure ring or, six (6) 1/2" diameter bolts or studs with nut. Westinghouse Electric Corporation Drawing C7108D10 (dated 2/24/71) is included as Appendix B and U. S. Military Standard MS24347 Rev. D is included as Appendix C to this application.

1.2.2 Contents of Packaging:

Application is made for the following categories of contents:

1.2.2.1 Bulk uranium oxide (UO_2 or U_3O_8) powder with a maximum density of 2 g U/cc and enriched to a maximum 5 w/o in the U-235 isotope. The maximum H/U atomic ratio, considering all sources of hydrogenous material within the inner container shall not exceed 1.13. The inner container has dimensions of 9-3/4" diameter x 12".

Total contents not to exceed 315 pounds, with the U-235 content not to exceed 6.25 kilograms.

- 1.2.2.2 Uranium compounds which will not decompose at temperatures up to 750^oF. Uranium may be enriched to a maximum 5 w/o in the U-235 isotope. The maximum H/U atomic ratio, considering all sources of hydrogenous material within the inner container shall not exceed 1.5.

Total contents not to exceed 250 pounds, with the U-235 content not to exceed five (5) kilograms. Four (4) steel drums containing not more than 1.3 kilograms U-235 each shall be packaged in the shipping insert within the inner container as shown in Westinghouse Electric Corporation Sketch SKA-252-1 dated 4/4/68 (Appendix F to this application) and Drawing C7108D10. The steel drums shall be constructed in accordance with U. S. Military Standard MS 24347 with a maximum ID of 8-1/2" and a nominal height of 15.4".

- 1.2.2.3 Uranium oxide pellets, enriched to a maximum of 4.0 w/o in the U-235 isotope. The maximum H/U atomic ratio, considering all sources of hydrogenous material within the inner container, shall not exceed 3.0. The contents described herein shall be contained in metal inner containers having 9-3/4" diameter. Total contents not to exceed 250 pounds, with the U-235 content not to exceed 4.0 kilograms.

- 1.2.2.4 Uranium oxide enriched to a maximum 4 w/o in the U-235 isotope. Chemically-bound or physically-bound water in mixtures is permitted. Slips or slurries that exhibit a visually discernible liquid second phase are prohibited.

Total contents not to exceed 200 pounds, with the U-235 content not to exceed 2.95 kg. The contents shall be contained within two (2) 9.75 inch diameter by 12 inch high sealed metal cans. Empty metal cans will be used to make up the remaining space within the inner container.

CHAPTER 2.0

STRUCTURAL EVALUATION

2.1 Introduction

This Chapter provides the structural design and evaluation for the contents described in Sections 1.2.2.1, 1.2.2.2, 1.2.2.3, and 1.2.2.4 of this application.

2.1.1 Structural Design

This package utilizes design concepts which are similar to those used in the design of the NUMEC LA-36 and Pu-10-1 packages. The outer shell consists of two 16 gauge 22.5" diameter (nominal) steel drums welded end-to-end to form a package approximately 74" long. The inner container is an 11.5 diameter (maximum), 16 gauge (nominal) steel cylinder with a flanged closure consisting of a 1/2 inch thick (minimum) bolted flange and flange cover. A minimum of six 1/2"-13 NC bolts are used to seat a 1/8 inch thick Anchor Packing Company "Target" or ".125" gasket which is provided to assure a leak-tight closure. Vermiculite is used to provide thermal and mechanical insulation for the gasketed inner container which is positioned with a minimum of 12 steel spring spacers. The top insulation plug may be fabricated of Unibestos. At least 5 inches of vermiculite insulates the inner container from the drum, except at the bottom where its thickness may be 4 inches. (1) The maximum weight of the packaging and contents is approximately 650 pounds.

2.2 General Standards (2)

2.2.1 Positive Closure

The outer cover is secured by either a 12-gauge bolted closure ring or six (6) 1/2" diameter bolts or studs with nut.

2.2.2 Lifting Devices

No lifting devices are incorporated as a structural part of the package or its lid.

2.2.3 Tie Down Devices

No tie down devices are incorporated as a structural part of the package.

2.2.4 Structural Standards for Large Quantity Packaging

Not applicable.

2.3.6 Free Drop⁽³⁾

This test was not performed because the Pu-10-1 container does not depend on spacing for nuclear safety.

2.3.7 Corner Drop⁽³⁾

Because the package is fabricated from steel, this test does not apply.

2.3.8 Penetration

The drums are fabricated from 16 gauge steel, and are similar to those used for the NUMEC LA-36 containers.⁽³⁾

Two sample packages were subjected to a penetration test as specified in Appendix A of 10 CFR 71. The resulting dents did not exceed a depth of 3/16 inch.⁽²⁾

2.3.9 Compression⁽³⁾

A 2,000 pound load was placed on top of a sample package for a period of 24 hours with no measurable deflection of the drum.

Based on the above, we conclude that requirements set forth in 10 CFR 71.35(a) (1), (2), (3); (b) (1) and (4)(iii) are satisfied. 10 CFR 71.35(a) (4) and (5) do not apply as there are no coolants in this package. 10 CFR 71.35(b) 1 and 3 are discussed in VI.1.2.2 above, and 10 CFR 71.35(b) (4), (1) and (II) does not apply as the spacing provided by the package does not effect nuclear safety.

With regard to 10 CFR 71.35(c), the vent valve is closed prior to all shipments.

2.4 Hypothetical Accident Conditions

The inner container of the BB-250-2, when fully loaded, weighs 329.4# resulting in a vertical loading of 3.17 lbs/in² over a base area of 103.87 in². The inner container of the NUMEC Pu-10-1 container, when fully loaded, and including the neutron moderator weighs 279#, resulting in a vertical loading of 3.55 lbs/in² over a base area of 78.54 in². When placed in a horizontal position, the loadings are 0.456 lb/in² for the BB-250-2, and 0.442 lb/in² for the NUMEC Pu-10-1 container. Thus the tests performed on the latter container are valid for the BB-250-2 package.⁽¹⁾

Secondly, as previously stated, the BB-250-2 package utilizes design concepts which are similar to those of the LA-36 and Pu-10-1 packages.

The below presentation reiterates the accident test conditions for both the LA-36 and Pu-10-1 containers. The tests performed for these containers are valid for the BB-250-2 package.

A series of additional tests has been carried out wherein pairs of pails have been dropped together without benefit of the surrounding drum structure, exposed to temperatures typical of those recorded above, and immersed under three feet of water for 24 hours. The results confirm those reported above. Included in these tests were pails which were equipped with lids identical to the standard 17-H lids, except that the closure device is a lever-lock ring formed of .032 steel sheet, in place of the standard lid closure lugs. The lids are identical in all other respects.

Based on the above tests, we conclude that:

1. The individual package remains subcritical under all conditions by virtue of the mass limit.
2. The ability to exclude water from the material being shipped provides the basis for evaluating an array of packages on the basis of dryness of the material.

2.5 Additional Testing and Evaluations

In the course of renewing the Certificate of Compliance #5768, additional testing and evaluation of the BB-250 shipping container was performed by Babcock & Wilcox Pennsylvania Operations (PA Ops) in calendar year 1981. Inspections conducted throughout the preparation and testing of the container, including the observation of results following the tests, were documented by the PA Ops Quality Assurance Department. In all tests described in this section, the BB-250-2 was filled with five (5) aluminum powder cans filled with lead shot and sand to simulate a total gross weight of a minimum of 650 pounds (295 kg) for the shipping container plus contents. The loaded cans were placed in a steel "birdcage" insert assembly (shown in the Westinghouse Electric Corporation Sketch SKA-252-1, dated 4/4/68, given in Appendix F), and this loaded "birdcage" was placed in the BB-250-2 packaging (shown in Babcock & Wilcox Drawing No. 10-F-771, dated 8/12/80, given as Appendix A). The outer cover of the BB-250-2 packaging was secured with a 12-gauge closure ring. All tests described in this section were performed on the BB-250-2 packaging which was loaded and constructed in this above-described manner. This section provides a description of these tests, evaluations and results.

2.5.1 Normal Condition Tests and Evaluations

2.5.1.1 Water Spray Test

A container was water sprayed for a period of 60 minutes (1 hour). Upon completion of the testing, the drum was opened and inspected for leakage. The inside of the drum was dry and had no visible signs of moisture present.

2.5.1.2 Free Drop Test

Approximately 1 hour and 40 minutes after conclusion

of the water spray test, the container was inverted so as to hit on the ring, raised to a height of 48" and free dropped onto a concrete pad. Inspection of the container upon completion of testing revealed a $\frac{1}{2}$ " compression area on a small portion of the drum.

2.5.1.3 Corner Drop Test

The container was free dropped 8 times, 4 times on the top and bottom rims once on each quarter. Upon completion of testing, examination of the container revealed the top rim had no dents or distortion of the body while the bottom rim had slight dents at each of the four impact points but no distortion of the body and no visible seam damage.

2.5.1.4 Penetration Test

A steel cylinder $1\frac{1}{4}$ " diameter weighing 13 pounds was free dropped 40" onto the center of the lid on the container. Examination of the container upon completion of the test revealed a dent $1/16$ " deep but no penetration of the container lid occurred.

2.5.1.5 Compression Test

A total weight of 3500 pounds was placed on top of the container. After 24 hours with the weight in this position, there was no distortion or compression of the container due to this weight.

2.5.2 Accident Condition Tests and Evaluations

2.5.2.1 Free Drop Test

A container was raised by a crane to a height of thirty (30) feet at approximately a 45° angle. The height was determined by a measured, weighted cord hanging from the container. A quick release mechanism was used to drop the container, which fell at approximately a 45° angle, landing on the corner of the container directly striking the closure ring bolt.

Areas at the point of impact were without fracture. The outer container was deformed at the point of impact, but there was no opening around the closure ring or ring bolt. Post-test inspection showed all container components intact. Two (2) of the five (5) aluminum cans were deformed, but there was no damage to the sealing features of the inner container or the cans.

(Photographs 1-4 of Appendix H show the outer container; Photographs 5-9 show the inner container).

2.5.2.2 Puncture Test

Following the 30 foot free drop, the container was free-dropped upside-down through a distance of 40 inches, striking the top end of a 6" \varnothing x 10" long vertical steel bar mounted on a steel plate. The top horizontal edge of the bar was rounded to a radius of not more than one quarter inch.

Following this drop, the lid of the outer container was indented about 1 3/8", but there was no puncture.

2.5.2.3 Thermal Evaluation

An Engineering evaluation was performed on the BB-250-2 to determine the effect of the thermal test procedure outlined in 10 CFR 71, Appendix B. These thermal test calculations demonstrate the integrity of the inner container will be maintained under the specified hypothetical accident test conditions. This detailed evaluation is provided as Appendix G to this application.

2.5.2.4 Water Immersion

Following the puncture test, the container was placed in a tank under 3 feet of water for eight hours. Prior to the loading of the BB-250-2 with the weighted aluminum cans, the inner container had been coated with a light talc-like powder to detect any penetration of moisture. Inspection of the inner container following the immersion showed the inner container was completely dry.

2.5.2.5 Additional Accident Condition Testing

In addition to hypothetical accident tests previously described in this section, Babcock & Wilcox also performed further such tests as described below. The container configuration and arrangement of contents of the BB-250-2 packaging in these tests were exactly as that previously described in the first paragraph of this Section 2.5.

2.5.2.5.1 Additional Free Drop Test

Another BB-250-2 container was raised by a crane to a height of thirty (30) feet at approximately a 45° angle. The height was determined by a measured, weighted cord hanging from the container. A quick release mechanism was used to drop the container, which fell at approximately a 45° angle, landing on the corner of the container directly striking the closure ring bolt.

Damage to the side of the outer container, upon completion of the drop, was a tapered dent, 12 inches in width running the length of the container. (Refer to Appendix H, Photographs 1-4). As in the previous free-drop test, a post-test inspection showed all container components intact and no damage to the sealing features of the inner container.

2.5.2.5.2 Additional Puncture Tests

In addition to performing the puncture test on the lid of BB-250-2 as described in Section 2.5.2.2, the puncture test was performed three more times.

The BB-250-2 container free-dropped in Section 2.5.2.5.1 was then dropped 40 inches, with the closure ring bolt striking directly on the spike. The spike made an indentation of $\frac{1}{2}$ inch in depth at the point of impact. No other visible damage occurred.

A BB-250-2 container was dropped 40 inches onto the 6 inch diameter steel spike, directly on the welded seam on the center side of the container. An indentation approximately 16 inches wide by 18 inches long with a maximum depth of $2\frac{1}{2}$ inches was formed. There was no indication of weld breaking or metal tearing and all container components remained intact.

Finally, a BB-250-2 container was dropped 40 inches onto the steel spike, directly on the bottom center of the outer container. An indentation with a depth of 1 inch was formed. No other damage occurred.

3.5 Fissile Class II

The maximum number of shipping containers that could be transported due to weight limitations imposed by governmental transportation regulations would be less than 100. Five times that number, or 500 units, is less than the smallest undamaged array allowed. Two times that number, or 200 units is less than the smallest damaged array allowed.

$$\text{Thus: } \frac{50}{100} = 0.5$$

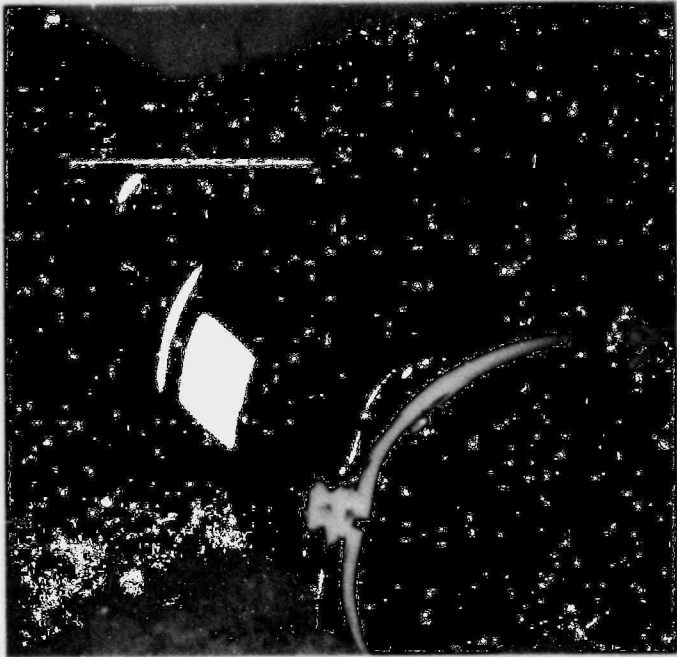
Therefore, any package described in this application except for 3.4.C.1 and 3.4.C.2 would be assigned a transport index of 0.5.

For 3.4.C.1 and 3.4.C.2, one-fifth the undamaged array, 14 is smaller than one-half the damaged array, 20 hence $\frac{50}{14} = 3.57$ or 3.6 transport units would be assigned.

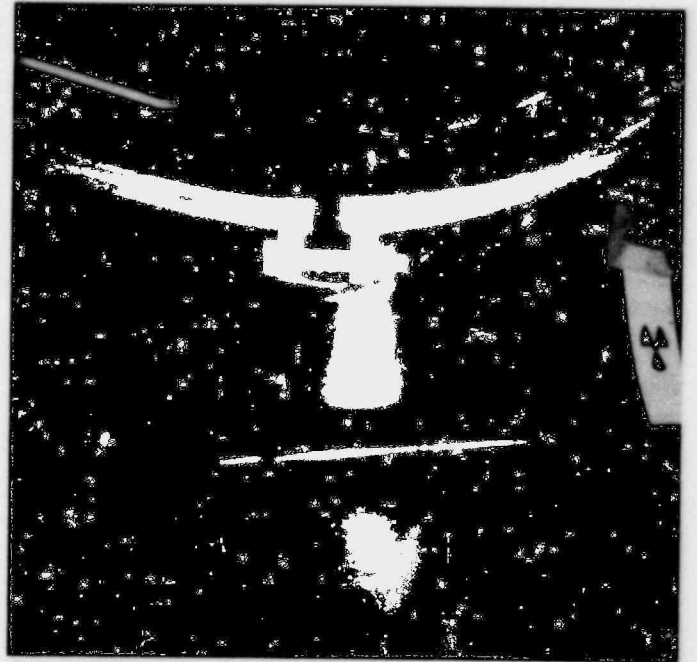
3.6 KENO IV Computer Sheets

Copies of the data input and K_{eff} output sheets from the KENO IV computer runs made for all the cases listed in this Chapter 3.0 are provided in Appendix I to this application.

APPENDIX H
PHOTOGRAPHS



1



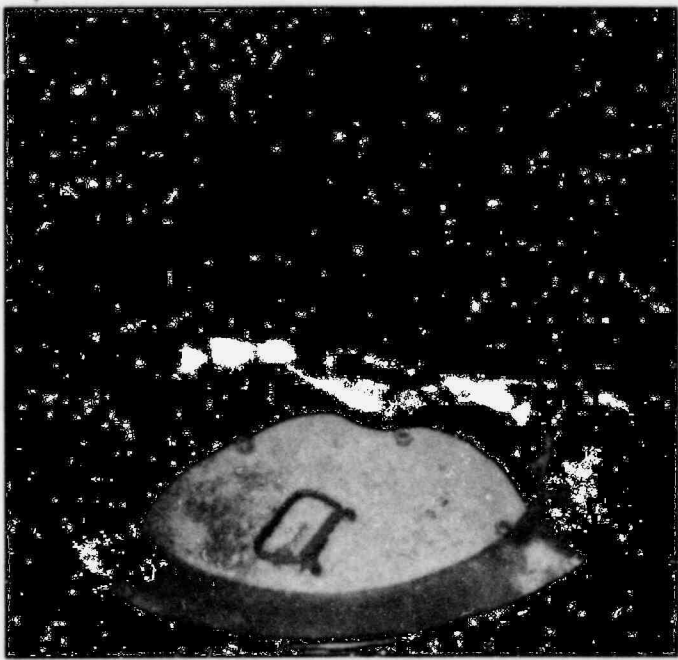
2



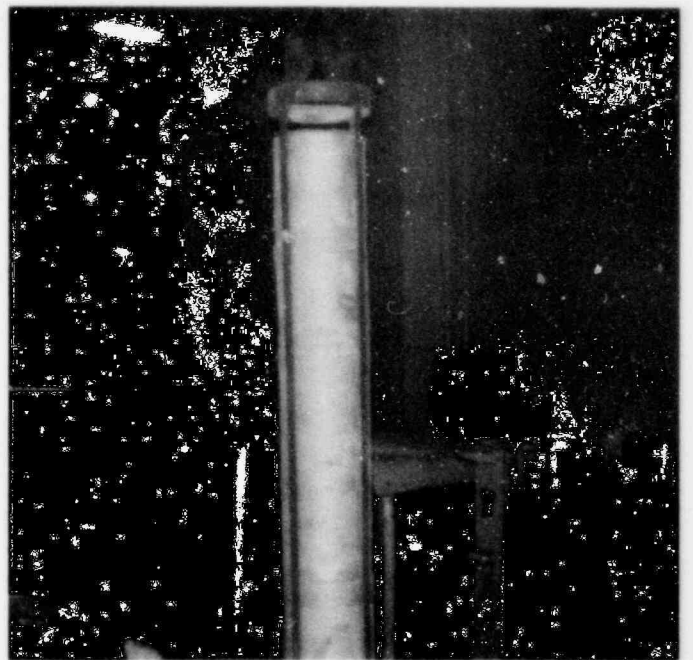
3



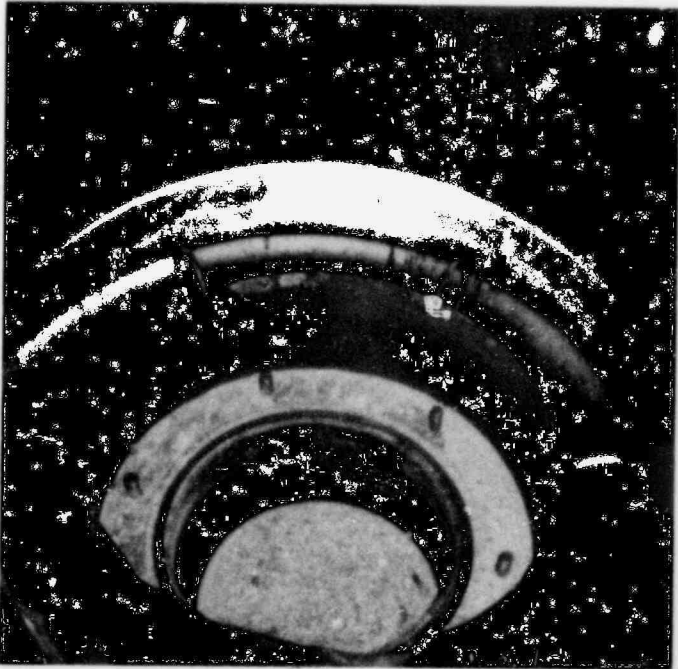
4



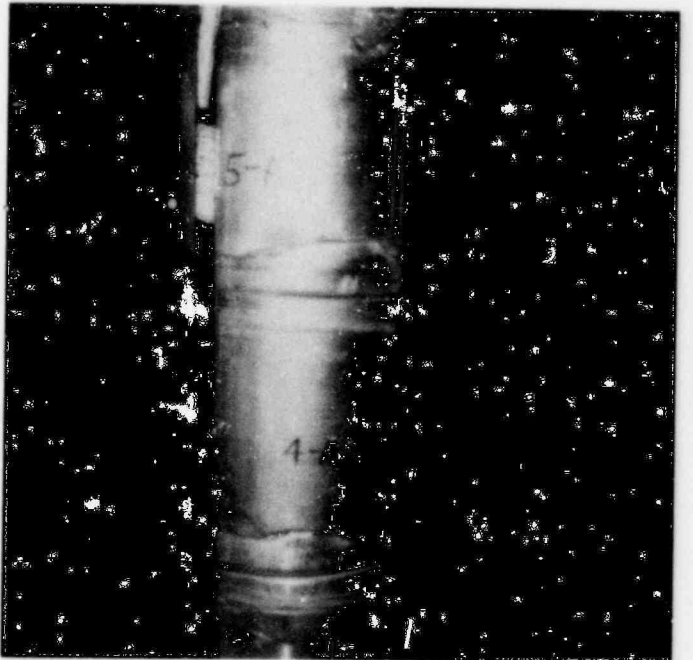
5



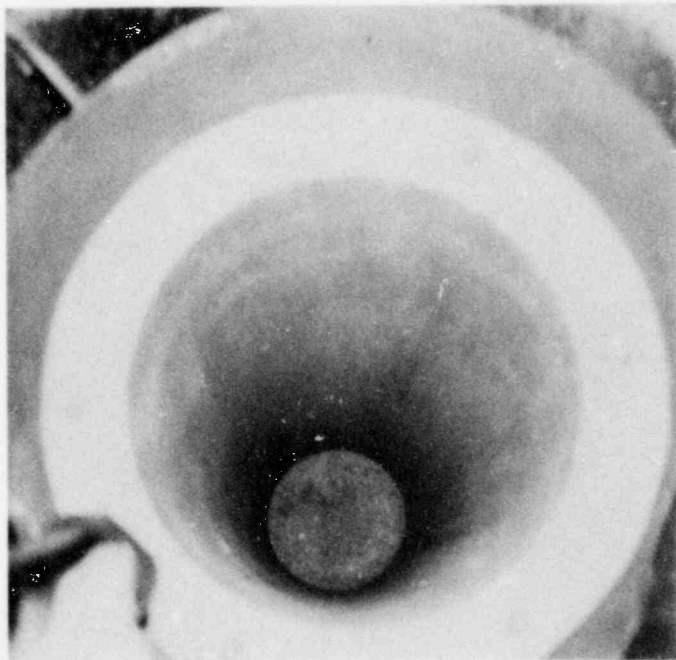
6



7

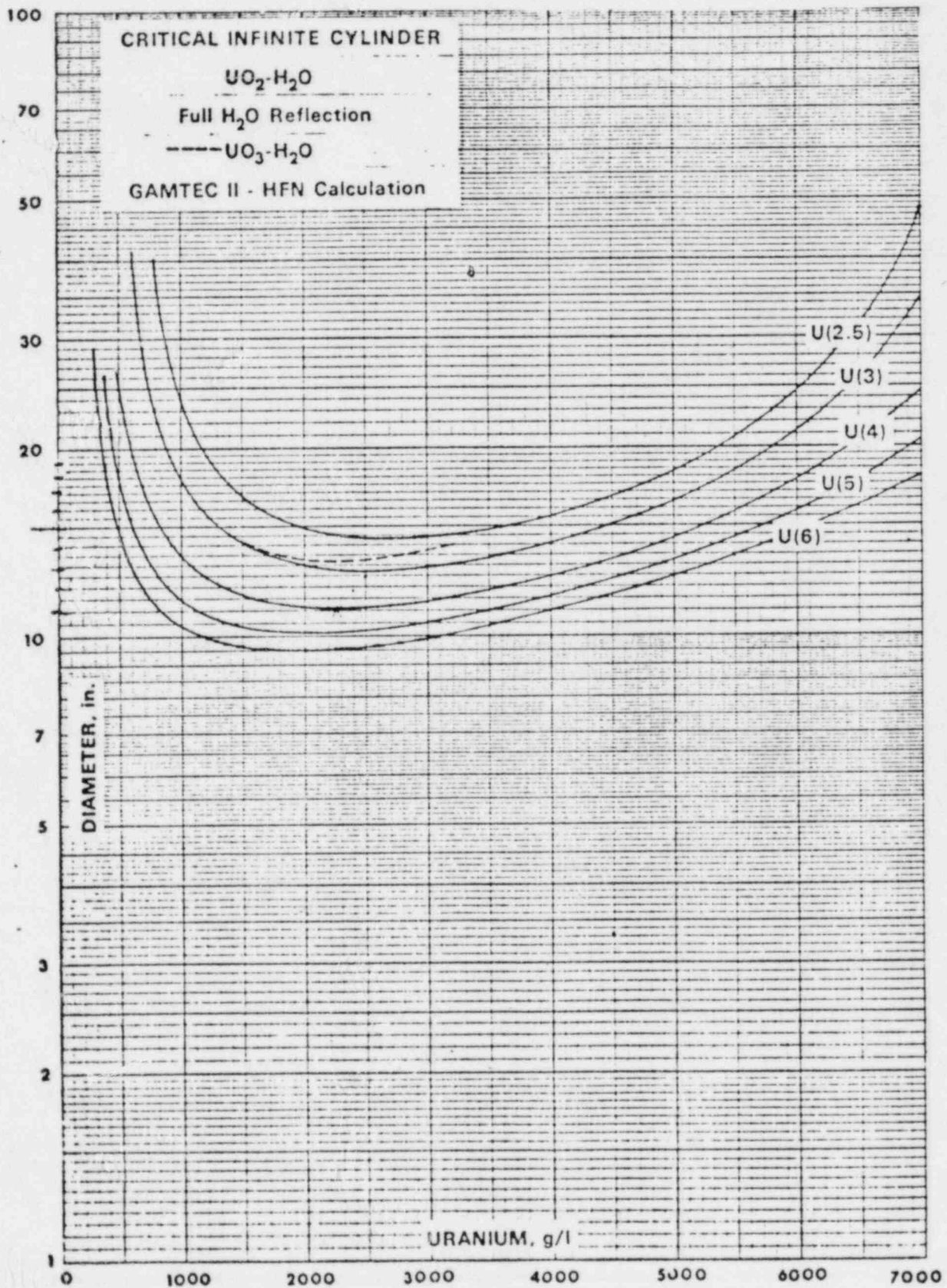


8



9

APPENDIX I
KENO IV COMPUTER
INPUT AND OUTPUT
 K_{eff} SHEETS



FOR THE EVALUATION DESCRIBED IN SECTION 3.1.b

KENO4LCM VERS.2.1 (10/30/79) 07/14/81 10.0'

FOLLOWING IS A CARD IMAGE LISTING OF THE INPUT D

CARD
NUMBER

C O L U M N N U M B E R

111111111122222222223333333333444444444455555555556666666666777777
12345678901234567890123456789012345678901234567890123456789012345

1	TITLE(BB 250/INF ARRAY-22 IN CENTERS/2 HI/1% WATER/MACEDA)
2	4.9 130 247 3 16 6 15 7 20 7 1 1 1 5 15 1 0 2000 10Z
3	SR-1 0
4	1 1101 4.63677-3 1 8100 1.75077-2 1 -92508 3.84345-4
5	1 92806 7.21031-3
6	2 401 1.
7	3 501 0.1-1
8	4 200 1.
9	5 100 1.
10	6 1101 6.69223-2 6 6100 2.8681-2 6 7100 9.56033-3
11	6 8100 1.91207-2
12	7 13100 2.3-4 7 26100 9.-5 7 1101 8.1-4 7 19100 1.2-4
13	7 12100 4.2-4 7 8100 2.42-3 7 14100 5.2-4 7 501 0.1-1
14	BOX TYPE 1
15	CYLINDER 1 12.01675 30.19425 .28575 16Z
16	CYLINDER 2 12.2555 30.353 .127 16Z
17	CYLINDER 4 12.3825 30.48 0. 16Z
18	CYLINDER 7 27.94 30.48 0. 16Z
19	CUBOID 3 27.94 -27.94 27.94 -27.94 30.48 0. 16Z
20	CORE BDY 0 27.94 -27.94 27.94 -27.94 152.4 0. 16Z
21	CUBOID 3 27.94 -27.94 27.94 -27.94 152.4 -30.48 16Z

***** END OF INPUT LISTING *****

30 250 IN- ARRAY-22 IN CENTERS/2 HI/1X WATER/MACED*)

ITERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	8.21287E-01	2.50000E-02	1.00000E+00	0.	0.
WARNING - ONLY 242 INDEPENDENT FISSION POINTS WERE GEN					
2	8.16078E-01	5.03333E-02	1.00000E+00	0.	0.
3	9.34111E-01	7.48233E-02	9.34111E-01	0.	0.
4	9.54278E-01	1.00667E-01	9.44194E-01	1.00833E-02	0.
WARNING - ONLY 245 INDEPENDENT FISSION POINTS WERE GEN					
5	8.23897E-01	1.25167E-01	9.04095E-01	4.05196E-02	0.
6	9.00429E-01	1.51000E-01	9.03179E-01	2.86663E-02	0.
7	9.05106E-01	1.72833E-01	9.03564E-01	2.22082E-02	0.
8	8.19116E-01	2.05500E-01	8.89489E-01	2.29542E-02	0.
9	8.93015E-01	2.32500E-01	8.89993E-01	1.94064E-02	0.
10	7.90244E-01	2.57500E-01	8.77524E-01	2.09266E-02	0.
11	9.54079E-01	2.84500E-01	8.86030E-01	2.03214E-02	0.
WARNING - ONLY 239 INDEPENDENT FISSION POINTS WERE GEN					
12	7.85275E-01	3.09833E-01	8.75955E-01	2.07818E-02	0.
13	8.65112E-01	3.36667E-01	8.74969E-01	1.88237E-02	0.
14	8.87315E-01	3.62000E-01	8.75998E-01	1.72144E-02	0.
15	8.56552E-01	3.89000E-01	8.74502E-01	1.59054E-02	0.
16	8.81415E-01	4.13833E-01	8.74996E-01	1.47338E-02	0.
17	9.05587E-01	4.40167E-01	8.77035E-01	1.38673E-02	0.
WARNING - ONLY 242 INDEPENDENT FISSION POINTS WERE GEN					
18	8.21205E-01	4.65167E-01	8.73546E-01	1.34328E-02	0.
19	8.79590E-01	4.92167E-01	8.73901E-01	1.26229E-02	0.
20	9.02290E-01	5.17667E-01	8.75479E-01	1.20050E-02	0.
21	8.42503E-01	5.43000E-01	8.73743E-01	1.14875E-02	0.
22	8.88418E-01	5.69667E-01	8.74477E-01	1.09226E-02	0.
23	8.78794E-01	5.96333E-01	8.74682E-01	1.03915E-02	0.
24	8.52529E-01	6.22333E-01	8.73675E-01	9.95898E-03	0.
25	8.26230E-01	6.46667E-01	8.71613E-01	9.73715E-03	0.
26	8.41020E-01	6.72667E-01	8.70388E-01	9.40935E-03	0.
27	8.57308E-01	6.98833E-01	8.69817E-01	9.04017E-03	0.
28	8.06332E-01	7.23500E-01	8.67375E-01	9.02220E-03	0.
29	9.33106E-01	7.50667E-01	8.69809E-01	9.01650E-03	0.
30	8.66518E-01	7.76333E-01	8.69692E-01	8.68931E-03	0.
31	9.21320E-01	8.05000E-01	8.71472E-01	8.57125E-03	0.
32	8.62221E-01	8.31333E-01	8.71164E-01	8.28635E-03	0.
33	7.83324E-01	8.56000E-01	8.68310E-01	8.50075E-03	0.
34	8.84043E-01	8.83500E-01	8.68821E-01	8.24545E-03	0.
35	7.85130E-01	9.08333E-01	8.66285E-01	8.38443E-03	0.
36	8.92040E-01	9.34500E-01	8.67043E-01	8.16929E-03	0.
WARNING - ONLY 235 INDEPENDENT FISSION POINTS WERE GEN					
37	7.41800E-01	9.58667E-01	8.63464E-01	8.70221E-03	0.
38	8.73341E-01	9.84667E-01	8.63739E-01	8.46149E-03	0.
39	7.77675E-01	1.00867E+00	8.61413E-01	8.55202E-03	0.
40	8.23715E-01	1.03417E+00	8.60421E-01	8.38283E-03	0.
41	8.98527E-01	1.06133E+00	8.61398E-01	8.22331E-03	0.
42	8.44971E-01	1.08800E+00	8.60787E-01	8.02511E-03	0.
43	8.42644E-01	1.11367E+00	8.60540E-01	7.84019E-03	0.
44	8.06196E-01	1.13883E+00	8.59195E-01	7.76796E-03	0.
45	8.80825E-01	1.16633E+00	8.59701E-01	7.60191E-03	0.
46	9.20074E-01	1.19183E+00	8.61073E-01	7.55271E-03	0.
47	8.38901E-01	1.21683E+00	8.60580E-01	7.39939E-03	0.
48	9.31115E-01	1.24250E+00	8.62114E-01	7.39741E-03	0.
49	8.94606E-01	1.26933E+00	8.62805E-01	7.27125E-03	0.
WARNING - ONLY 241 INDEPENDENT FISSION POINTS WERE GEN					

50	8.11415E-01	1.29450E+00	8.61632E-01	7.21416E-03	0.
51	8.11415E-01	1.31867E+00	8.61705E-01	7.07067E-03	0.
52	8.11415E-01	1.34283E+00	8.62136E-01	6.93564E-03	0.
53	8.11415E-01	1.36700E+00	8.63043E-01	6.84584E-03	0.
54	8.11415E-01	1.39116E+00	8.62740E-01	6.74386E-03	0.
WARNING - ONLY 245 INDEPENDENT FISSION POINTS WERE GEN					
55	8.11415E-01	1.41533E+00	8.62950E-01	6.64188E-03	0.
56	8.11415E-01	1.43950E+00	8.63160E-01	6.53990E-03	0.

50	8.06500E-01	1.29450E+00	8.61632E-01	7.21416E-03	0.
51	8.75006E-01	1.31867E+00	8.61905E-01	7.07067E-03	0.
52	8.78434E-01	1.34633E+00	8.62236E-01	6.93549E-03	0.
53	9.03296E-01	1.37083E+00	8.63041E-01	6.84584E-03	0.
54	8.29467E-01	1.39750E+00	8.62395E-01	6.74388E-03	0.
WARNING - ONLY 245 INDEPENDENT FISSION POINTS WERE GEN					
55	7.80127E-01	1.42233E+00	8.60843E-01	6.79508E-03	0.
56	8.30987E-01	1.44700E+00	8.60290E-01	6.69094E-03	0.
57	8.72049E-01	1.47367E+00	8.60504E-01	6.57164E-03	0.
58	8.32553E-01	1.50050E+00	8.60005E-01	6.47249E-03	0.
59	8.49433E-01	1.52600E+00	8.59819E-01	6.36063E-03	0.
60	8.59594E-01	1.55250E+00	8.59815E-01	6.25000E-03	0.
61	8.62552E-01	1.57850E+00	8.59862E-01	6.14333E-03	0.
62	7.86813E-01	1.60217E+00	8.58644E-01	6.16156E-03	0.
63	8.07168E-01	1.62800E+00	8.57800E-01	6.11818E-03	0.
64	8.17469E-01	1.65417E+00	8.57150E-01	6.05375E-03	0.
65	8.30285E-01	1.68100E+00	8.56723E-01	5.97212E-03	0.
66	8.94443E-01	1.70833E+00	8.57313E-01	5.90754E-03	0.
67	8.24356E-01	1.73383E+00	8.56806E-01	5.83801E-03	0.
68	7.54881E-01	1.75783E+00	8.55261E-01	5.95268E-03	0.
69	8.49545E-01	1.78517E+00	8.55176E-01	5.86378E-03	0.
70	8.69042E-01	1.81167E+00	8.55380E-01	5.78051E-03	0.
71	8.12247E-01	1.83767E+00	8.54755E-01	5.73031E-03	0.
72	7.47148E-01	1.86150E+00	8.53218E-01	5.85333E-03	0.
73	8.16547E-01	1.88750E+00	8.52701E-01	5.79536E-03	0.
74	8.70181E-01	1.91367E+00	8.52944E-01	5.71749E-03	0.
75	7.70548E-01	1.94050E+00	8.51815E-01	5.75049E-03	0.
76	8.89288E-01	1.96600E+00	8.52328E-01	5.69480E-03	0.
77	9.20649E-01	1.99200E+00	8.53233E-01	5.69174E-03	0.
78	8.74536E-01	2.01650E+00	8.53513E-01	5.62334E-03	0.
79	9.11277E-01	2.04283E+00	8.54263E-01	5.60031E-03	0.
80	9.05960E-01	2.06850E+00	8.54926E-01	5.56763E-03	0.
81	7.86836E-01	2.09383E+00	8.54064E-01	5.56386E-03	0.
82	8.97837E-01	2.12100E+00	8.54611E-01	5.52106E-03	0.
83	8.55919E-01	2.14683E+00	8.54627E-01	5.45249E-03	0.
84	8.40891E-01	2.17267E+00	8.54460E-01	5.38819E-03	0.
85	8.07225E-01	2.19817E+00	8.53891E-01	5.35322E-03	0.
86	8.64751E-01	2.22450E+00	8.54020E-01	5.29068E-03	0.
87	8.19960E-01	2.24917E+00	8.53619E-01	5.26340E-03	0.
88	7.65922E-01	2.27517E+00	8.52600E-01	5.28145E-03	0.
89	8.53551E-01	2.30317E+00	8.52610E-01	5.22041E-03	0.
90	8.52486E-01	2.32817E+00	8.52609E-01	5.16074E-03	0.
91	8.79129E-01	2.35350E+00	8.52907E-01	5.1112E-03	0.
92	7.55376E-01	2.37800E+00	8.51823E-01	5.16889E-03	0.
93	8.35628E-01	2.40383E+00	8.51623E-01	5.11568E-03	0.
94	8.29289E-01	2.42817E+00	8.51581E-01	5.06572E-03	0.
95	8.43193E-01	2.45400E+00	8.51293E-01	5.01160E-03	0.
96	9.28169E-01	2.47967E+00	8.52110E-01	5.02500E-03	0.
97	8.72560E-01	2.50500E+00	8.52326E-01	4.97648E-03	0.
98	8.28698E-01	2.53017E+00	8.52680E-01	4.93051E-03	0.
99	8.69679E-01	2.55717E+00	8.52261E-01	4.88279E-03	0.
100	8.71480E-01	2.58483E+00	8.52457E-01	4.83669E-03	0.
101	8.44573E-01	2.60967E+00	8.52377E-01	4.78824E-03	0.
102	8.87470E-01	2.63600E+00	8.52728E-01	4.75309E-03	0.
103	8.08353E-01	2.66333E+00	8.52289E-01	4.72626E-03	0.
104	7.89793E-01	2.68733E+00	8.51676E-01	4.71964E-03	0.
105	8.87861E-01	2.71283E+00	8.52028E-01	4.68678E-03	0.
106	8.38734E-01	2.73933E+00	8.51900E-01	4.64325E-03	0.

107	8.76383E-01	2.76583E+00	8.52235E-01	4.60040E-03	0.
108	8.78883E-01	2.79283E+00	8.52249E-01	4.56347E-03	0.
109	8.76383E-01	2.81983E+00	8.52263E-01	4.52654E-03	0.
110	8.76383E-01	2.84683E+00	8.52277E-01	4.48961E-03	0.
111	8.76383E-01	2.87383E+00	8.52291E-01	4.45268E-03	0.
112	8.76383E-01	2.90083E+00	8.52305E-01	4.41575E-03	0.
113	8.76383E-01	2.92783E+00	8.52319E-01	4.37882E-03	0.
114	8.76383E-01	2.95483E+00	8.52333E-01	4.34189E-03	0.
115	8.76383E-01	2.98183E+00	8.52347E-01	4.30496E-03	0.
116	8.76383E-01	3.00883E+00	8.52361E-01	4.26803E-03	0.

107	8.66076E-01	2.76383E+00	8.52035E-01	4.60080E-03	0.
108	9.03933E-01	2.78883E+00	8.52524E-01	4.58341E-03	0.
109	8.97282E-01	2.81450E+00	8.52943E-01	4.55960E-03	0.
110	8.11338E-01	2.83867E+00	8.52558E-01	4.53358E-03	0.
111	8.67243E-01	2.86417E+00	8.52325E-01	4.49780E-03	0.
112	8.73848E-01	2.88967E+00	8.52521E-01	4.46102E-03	0.
113	8.86074E-01	2.91483E+00	8.52823E-01	4.43097E-03	0.
114	8.65581E-01	2.94133E+00	8.52937E-01	4.39270E-03	0.
115	8.42780E-01	2.96750E+00	8.52847E-01	4.35458E-03	0.
116	8.83160E-01	2.99400E+00	8.53113E-01	4.32440E-03	0.
117	5.21910E-01	3.01883E+00	8.53711E-01	4.32817E-03	0.
118	8.97885E-01	3.04483E+00	8.54092E-01	4.30757E-03	0.
119	7.87408E-01	3.06917E+00	8.53522E-01	4.30845E-03	0.
120	8.75624E-01	3.09433E+00	8.53710E-01	4.27589E-03	0.
121	8.59208E-01	3.12067E+00	8.53756E-01	4.24006E-03	0.
122	9.51694E-01	3.14800E+00	8.54572E-01	4.28306E-03	0.
123	7.72446E-01	3.17237E+00	8.53893E-01	4.30140E-03	0.
124	7.36683E-01	3.19567E+00	8.52932E-01	4.37284E-03	0.
125	8.51975E-01	3.22117E+00	8.52925E-01	4.33715E-03	0.
126	8.85131E-01	3.24717E+00	8.53184E-01	4.30986E-03	0.
127	8.62164E-01	3.27317E+00	8.53256E-01	4.27585E-03	0.
128	7.47594E-01	3.29833E+00	8.52418E-01	4.32387E-03	0.
129	7.93171E-01	3.32233E+00	8.51951E-01	4.31498E-03	0.
130	7.48437E-01	3.34700E+00	8.51142E-01	4.35685E-03	0.

WARNING - ONLY 251 INDEPENDENT FISSION POINTS WERE GEN.

MATRIX λ -EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 ARE NBXMAX , NBXMAX , NBZMAX UNITS IN AN ARRAY.

ARRAY-22 IN CENTERS/2 HI/12 WATER/MACED)

1.48399E-04 + OR - 1.78872E-06

GENERATION TIME = 1.67374E-04 + OR - 2.26932E-06

INITIAL IONS /G	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL	NUMBER HISTOGRAM
.85049	+ OR - .00434	.84615 TO .85483	.84181 TO .85917	.83746 TO .86351	3136	
.84967	+ OR - .00430	.84537 TO .85396	.84107 TO .85826	.83678 TO .86256	3112	
.84987	+ OR - .00433	.84555 TO .85420	.84122 TO .85852	.83689 TO .86285	3087	
.84946	+ OR - .00434	.84512 TO .85381	.84078 TO .85815	.83644 TO .86245	3062	
.84901	+ OR - .00435	.84466 TO .85337	.84030 TO .85772	.83595 TO .86207	3038	
.84926	+ OR - .00438	.84487 TO .85364	.84049 TO .85802	.83611 TO .86240	3013	
.84889	+ OR - .00440	.84449 TO .85330	.84009 TO .85770	.83568 TO .86211	2988	
.84938	+ OR - .00441	.84497 TO .85380	.84056 TO .85821	.83614 TO .86262	2964	
.84850	+ OR - .00436	.84414 TO .85286	.83978 TO .85723	.83542 TO .86159	2939	
.84904	+ OR - .00436	.84467 TO .85340	.84031 TO .85777	.83595 TO .86213	2914	
.84771	+ OR - .00450	.84320 TO .85221	.83876 TO .85671	.83419 TO .86122	2791	
.84682	+ OR - .00465	.84217 TO .85148	.83751 TO .85613	.83286 TO .86078	2667	
.84661	+ OR - .00487	.84174 TO .85148	.83688 TO .85634	.83201 TO .86121	2544	
.84501	+ OR - .00495	.84006 TO .84997	.83511 TO .85492	.83016 TO .85987	2420	
.84651	+ OR - .00497	.84154 TO .85147	.83657 TO .85644	.83160 TO .86141	2297	
.84667	+ OR - .00514	.84153 TO .85181	.83638 TO .85695	.83174 TO .86209	2174	
.84605	+ OR - .00534	.84069 TO .85136	.83535 TO .85670	.83001 TO .86204	2051	
.84605	+ OR - .00548	.83855 TO .84912	.83306 TO .85500	.82757 TO .86048	1928	
.84609	+ OR - .00572	.83817 TO .84981	.83265 TO .85553	.82693 TO .86124	1805	
.84452	+ OR - .00607	.83845 TO .85059	.83238 TO .85666	.82637 TO .86273	1679	
.84530	+ OR - .00645	.83885 TO .85175	.83240 TO .85820	.82595 TO .86465	1556	
.84654	+ OR - .00656	.84207 TO .85520	.83551 TO .86177	.82695 TO .86453	1433	
.84815	+ OR - .00681	.84337 TO .85500	.83456 TO .86181	.82774 TO .86563	1309	
.84831	+ OR - .00709	.84327 TO .85245	.83178 TO .85954	.82410 TO .86463	1186	
.84825	+ OR - .00783	.83842 TO .85438	.83019 TO .86191	.82276 TO .86474	1063	

1.48399E-04 + OR - 1.78872E-06

.84133 TO .85772

.83174 TO .85992

.82496 TO .86474

LE(BB 250/INF ARRAY-22 IN CENTERS/2 HI/1% WATER/MACE-4)

OF INITIAL GENERATIONS SKIPPED	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL	NUMB HIC
97	.84774	+ OR - .00507	.83866 TO .85681	.82959 TO .86588	.82052 TO .87495	
102	.84548	+ OR - .01057	.83495 TO .85600	.82443 TO .86653	.81390 TO .87706	
107	.84707	+ OR - .01233	.83474 TO .85940	.82240 TO .87173	.81007 TO .88407	
112	.84272	+ OR - .01496	.82776 TO .85768	.81280 TO .87264	.79784 TO .88760	
117	.82842	+ OR - .01886	.80955 TO .84728	.79069 TO .86614	.77183 TO .89001	
122	.79970	+ OR - .02072	.77898 TO .82042	.75827 TO .84113	.73755 TO .86185	
127	.76307	+ OR - .01505	.74801 TO .77812	.73296 TO .79317	.71791 TO .80823	

FOR THE EVALUATION DESCRIBED IN SECTION 3.1.c

KFN04LCM VERS.2.1 (10/30/79) 07/15/81 11.08.49 PAGE

THIS IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R

111111111122222222223333333333444444444455555555556666666666777777777788
1234567890123456789012345678901234567890123456789012345678901234567890

TIME IBB 250/10X14 ARRAY-22 IN CENTERS/2 HI/5X WATER/MACEDA)

4.30 247 3 16 6 15 8 21 7 1 5 7 5 15 1 0 2000 10Z

-1 0 -1 0

1 1101 4.65677-3 1 8100 1.75077-2 1 -92508 3.84345-4

1 92806 7.21031-3

2 401 1.

3 501 0.050

4 200 1.

5 100 1.

6 1101 6.69223-2 6 6100 2.8681-2 6 7100 9.56033-3

6 8100 1.91207-2

7 13100 2.3-4 7 26100 9.-5 7 1101 8.1-4 7 19100 1.2-4

7 12100 4.2-4 7 8100 2.42-3 7 14100 5.2-4 7 501 0.050

8 501 1.000

BOX TYPE 1

CYLINDER 1 12.01675 30.19425 .28575 16Z

CYLINDER 2 12.2555 30.353 .127 16Z

CYLINDER 4 12.3825 30.48 0. 16Z

CYLINDER 7 27.94 30.48 0. 16Z

CUBOID 3 27.94 -27.94 27.94 -27.94 30.48 0. 16

CORE BODY 0 139.7 -139.7 195.58 -195.58 152.4 0. 16Z

CUBOID 8 139.7 -170.18 195.58 -276.06 152.4 -30.48 16Z

***** END OF INPUT LISTING *****

EXPER 25071X14 ARRAY-22 IN CENTERS/2 HI/5% WATER/MACEDA

GENERATION	K-EFFECTIVE	ELAPSED TIME (MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	8.59355E-01	6.35000E-02	1.00000E+00	0.	0.
2	9.17618E-01	1.27167E-01	1.00000E+00	0.	0.
3	9.63281E-01	1.88167E-01	9.63281E-01	0.	0.
4	9.31895E-01	2.51167E-01	9.47588E-01	1.56934E-02	0.
5	9.54761E-01	3.14500E-01	9.49979E-01	9.37076E-03	0.
6	9.88181E-01	3.73500E-01	9.59530E-01	1.16241E-02	0.
7	8.97981E-01	4.39667E-01	9.47220E-01	1.52512E-02	0.
8	1.03266E+00	4.97500E-01	9.61461E-01	1.89173E-02	0.
9	9.21146E-01	5.60167E-01	9.55701E-01	1.69937E-02	0.
10	9.29969E-01	6.23333E-01	9.52485E-01	1.50644E-02	0.
11	8.34422E-01	6.91333E-01	9.39367E-01	1.86705E-02	0.
12	9.59764E-01	7.53667E-01	9.41406E-01	1.68236E-02	0.
13	9.23876E-01	8.15167E-01	9.39813E-01	1.53007E-02	0.
14	1.00630E+00	8.73333E-01	9.45354E-01	1.50264E-02	0.
15	9.49637E-01	9.28500E-01	9.45683E-01	1.38262E-02	0.
16	8.75497E-01	9.96333E-01	9.40670E-01	1.37473E-02	0.
17	9.93407E-01	1.05167E+00	9.44186E-01	1.32722E-02	0.
18	9.27906E-01	1.11350E+00	9.43168E-01	1.24566E-02	0.
19	8.96804E-01	1.18283E+00	9.40441E-01	1.20146E-02	0.
20	1.00746E+00	1.23667E+00	9.44164E-01	1.19237E-02	0.
21	1.05273E+00	1.30183E+00	9.49878E-01	1.26436E-02	0.
22	9.35402E-01	1.36450E+00	9.49154E-01	1.20166E-02	0.
23	9.33847E-01	1.42600E+00	9.48426E-01	1.14532E-02	0.
24	1.05003E+00	1.48417E+00	9.53044E-01	1.18568E-02	0.
25	9.86785E-01	1.54450E+00	9.54511E-01	1.14241E-02	0.
26	9.73842E-01	1.60800E+00	9.55317E-01	1.09674E-02	0.
27	9.40370E-01	1.67000E+00	9.54719E-01	1.05365E-02	0.
28	9.98276E-01	1.73150E+00	9.56394E-01	1.02608E-02	0.
29	9.05489E-01	1.79400E+00	9.54509E-01	1.00519E-02	0.
30	9.96272E-01	1.85133E+00	9.56000E-01	9.80041E-03	0.
31	9.79337E-01	1.91000E+00	9.56805E-01	9.49060E-03	0.
32	9.45843E-01	1.97167E+00	9.56439E-01	9.17607E-03	0.
33	9.75762E-01	2.03267E+00	9.57063E-01	8.89700E-03	0.
34	9.34596E-01	2.08833E+00	9.56361E-01	8.64304E-03	0.
35	1.02050E+00	2.14533E+00	9.58304E-01	8.59958E-03	0.
36	9.40321E-01	2.20533E+00	9.57775E-01	8.35956E-03	0.
37	8.69208E-01	2.26850E+00	9.55245E-01	8.50249E-03	0.
38	1.03151E+00	2.32950E+00	9.57363E-01	8.53019E-03	0.
39	1.00124E+00	2.39100E+00	9.58549E-01	8.38076E-03	0.
40	9.48868E-01	2.45400E+00	9.58294E-01	8.16121E-03	0.
41	1.04486E+00	2.51250E+00	9.60514E-01	8.25324E-03	0.
42	9.74575E-01	2.57633E+00	9.60866E-01	8.05194E-03	0.
43	9.96874E-01	2.63717E+00	9.61744E-01	7.90205E-03	0.
44	9.77504E-01	2.70300E+00	9.62119E-01	7.72074E-03	0.
45	1.01730E+00	2.75867E+00	9.63402E-01	7.64750E-03	0.
46	1.00930E+00	2.81617E+00	9.64446E-01	7.54414E-03	0.
47	9.27754E-01	2.87667E+00	9.63630E-01	7.41953E-03	0.
48	9.56929E-01	2.93817E+00	9.63485E-01	7.25790E-03	0.
49	9.22720E-01	3.00300E+00	9.62617E-01	7.15457E-03	0.
50	9.09032E-01	3.06817E+00	9.61501E-01	7.09234E-03	0.
51	9.06994E-01	3.13200E+00	9.60260E-01	7.05607E-03	0.
52	1.03893E+00	3.18833E+00	9.61833E-01	7.09028E-03	0.
53	9.49562E-01	3.25217E+00	9.61593E-01	6.95403E-03	0.
54	9.47462E-01	3.31400E+00	9.61321E-01	6.82440E-03	0.
55	9.69492E-01	3.3767E+00	9.61475E-01	6.69617E-03	0.

1.18117E+00	3.4167E+00	9.62799E-01	6.61188E-03	0.
1.180470E+00	3.48833E+00	9.62971E-01	6.53508E-03	0.
1.17474E+01	3.54483E+00	9.63229E-01	6.42251E-03	0.

9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03
9.27217E-01	3.93817E+00	9.45217E-01	7.00000E-03

56	1.00112E+00	3.43167E+00	9.62209E-01	6.61188E-03	0.
57	1.00410E+00	3.48833E+00	9.62971E-01	6.53508E-03	0.
58	9.77424E-01	3.54483E+00	9.63229E-01	6.42251E-03	0.
59	9.58518E-01	3.60467E+00	9.63146E-01	6.30937E-03	0.
60	8.96715E-01	3.66617E+00	9.62001E-01	6.30454E-03	0.
61	8.90483E-01	3.72893E+00	9.60789E-01	6.31421E-03	0.
62	9.35935E-01	3.78500E+00	9.60374E-01	6.22188E-03	0.
63	9.90691E-01	3.84950E+00	9.60871E-01	6.13919E-03	0.
64	1.01514E+00	3.90550E+00	9.61747E-01	6.10245E-03	0.
65	9.26561E-01	3.96967E+00	9.61188E-01	6.03072E-03	0.
66	9.53056E-01	4.03233E+00	9.61061E-01	5.93710E-03	0.
67	9.29377E-01	4.09933E+00	9.60574E-01	5.86534E-03	0.
68	9.17156E-01	4.16250E+00	9.59916E-01	5.81313E-03	0.
69	9.46094E-01	4.22650E+00	9.59709E-01	5.72942E-03	0.
70	9.19159E-01	4.28567E+00	9.59113E-01	5.67395E-03	0.
71	1.06630E+00	4.34017E+00	9.60667E-01	5.80480E-03	0.
72	9.16682E-01	4.40550E+00	9.60038E-01	5.75567E-03	0.
73	9.83745E-01	4.46567E+00	9.60377E-01	5.68384E-03	0.
74	1.05539E+00	4.52133E+00	9.61692E-01	5.75764E-03	0.
75	9.19284E-01	4.58233E+00	9.61111E-01	5.70786E-03	0.
76	9.50192E-01	4.64383E+00	9.60963E-01	5.63213E-03	0.
77	9.46561E-01	4.70650E+00	9.60771E-01	5.55984E-03	0.
78	9.50392E-01	4.76750E+00	9.60635E-01	5.48790E-03	0.
79	9.71405E-01	4.82617E+00	9.60775E-01	5.41796E-03	0.
80	9.81212E-01	4.88317E+00	9.61037E-01	5.35447E-03	0.
81	1.01664E+00	4.94233E+00	9.61741E-01	5.33291E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THERE ARE NBXMAX , NBYMAX , NBZMAX UNITS IN AN ARRAY.

UNIT 4 ANAY-22 IN CENTERS/2 HI/SX WATER/MACEDA

3.82257E-04 + OR - 3.30522E-06

GENERATION TIME = 3.05554E-04 + OR - 3.31190E-06

INITIAL CORE ID	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL	NUMBER OF HISTORIES
.96172	+ OR -	.00540	.95632 TO .96712	.95092 TO .97252	.94552 TO .97723	19266
.96211	+ OR -	.00546	.95665 TO .96757	.95119 TO .97302	.94573 TO .97848	19019
.96220	+ OR -	.00553	.95668 TO .96773	.95115 TO .97326	.94562 TO .97879	18772
.96186	+ OR -	.00559	.95627 TO .96745	.95067 TO .97304	.94508 TO .97864	18525
.96272	+ OR -	.00560	.95712 TO .96832	.95152 TO .97392	.94592 TO .97952	18278
.96176	+ OR -	.00559	.95617 TO .96736	.95057 TO .97295	.94498 TO .97855	18031
.96233	+ OR -	.00564	.95668 TO .96797	.95104 TO .97362	.94540 TO .97926	17784
.96278	+ OR -	.00571	.95708 TO .96849	.95137 TO .97419	.94567 TO .97990	17537
.96462	+ OR -	.00548	.95914 TO .97010	.95366 TO .97558	.94818 TO .98106	17290
.96469	+ OR -	.00556	.95913 TO .97025	.95357 TO .97581	.94801 TO .98137	17043
.96585	+ OR -	.00573	.96012 TO .97159	.95439 TO .97732	.94865 TO .98306	15808
.96601	+ OR -	.00583	.96018 TO .97183	.95436 TO .97766	.94853 TO .98348	14573
.96499	+ OR -	.00611	.95888 TO .97110	.95277 TO .97721	.94666 TO .98332	13338
.96479	+ OR -	.00654	.95844 TO .97153	.95190 TO .97807	.94536 TO .98461	12103
.96491	+ OR -	.00676	.96014 TO .97367	.95338 TO .98044	.94661 TO .98720	10868
.96264	+ OR -	.00707	.95557 TO .96971	.94850 TO .97677	.94143 TO .98384	9633
.95924	+ OR -	.00766	.95158 TO .96690	.94391 TO .97456	.93625 TO .98223	8398
.96158	+ OR -	.00801	.95357 TO .96959	.94556 TO .97760	.93756 TO .98161	7163
.95892	+ OR -	.00934	.94958 TO .96826	.94025 TO .97760	.93091 TO .98693	5928
.96605	+ OR -	.01050	.95555 TO .97656	.94504 TO .98706	.93454 TO .99757	4693
.96716	+ OR -	.01318	.95397 TO .98034	.94079 TO .99353	.92761 TO 1.00671	3458
.97498	+ OR -	.01367	.96131 TO .98865	.94764 TO 1.00233	.93396 TO 1.01600	2223
.97991	+ OR -	.01383	.96608 TO .99374	.95226 TO 1.00757	.93843 TO 1.02140	988

FOR THE EVALUATION DESCRIBED IN SECTION 3.2.a

KENO4LCM VERS.2.1 (10/30/79) 05/14/80 15.12.49

LOWING IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R

111111111122222222223333333333444444444455555555556666666666777777777788
 1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,1X1X1,REFL,.4IN,U(4)02 RODS+POLY,135GUS/L, FLOODED:WEBB)

4.8 65 301 3 16 6 16 9 20 7 1 1 1 1
 14 2 0 2000 0 1 1 1 4Z 3 4
 SR1012 5012

1 -1 1.
 1 2 1.

2	100	1.
3	1101	.00081
3	8100	.00242
3	12100	.00041
3	13100	.00023
3	14100	.00052
3	19100	.00012
3	26100	.00009

3 501 1.-15

4	300	1.
5	401	1.

6 13100 .06027

7 501 1.

8 200 1.

9 401 4.88204-2 9 8100 6.86361-3 9 -92509 1.38959-4 9 92808 3.29286-5
 +++++ MATERIAL 8 ZONE 1

0	+60231-7 0	+16076-6 0	+52597-6 0	+26660-6 5R+	0+ 0 0	+50514-7	0
0	+11566-6 0	+60489-6 0	+33989-6 0	+10504-6 4R+	0+ 0 0	+17253-7	1
0	+20542-7 0	+98531-6 0	+67725-6 0	+65063-7 0	+40775-7 3R+	0+ 0	2
0	+16918-7 0	+10930-7 0	+11126-5 0	+95181-6 0	+23306-6 0	+84801-7	3
0	+70080-7 2R+	0+ 0 0	+19325-7 0	+12471-7 0	+13664-5 0	+12811-5	4
0	+14375-6 0	+48872-7 0	+56546-7 0	+47030-7 0	0+ 0 0	+48028-7	5
0	+21296-7 0	+15917-5 0	+14255-5 0	+66011-7 0	+71611-8 0	+83760-8	6
0	+79761-8 0	+62183-8 0	+75813-7 0	+35319-7 0	+17924-5 0	+16683-5	7
0	+48084-7 4R+	0+ 0 0	+73231-7 0	+66446-7 0	+17819-5 0	+16579-5	8
0	+48284-7 4R+	0+ 0 0	+14952-6 0	+15627-6 0	+16860-5 0	+14863-5	9
0	+50823-7 4R+	0+ 0 0	+40816-6 0	+30426-6 0	+17537-5 0	+12780-5	10
0	+49701-7 4R+	0+ 0 0	+2870-6 0	+25924-6 0	+16481-5 0	+12866-5	11
0	+67573-7 4R+	0+ 0 0	+40050-6 0	+21191-6 0	+17477-5 0	+12796-5	12
0	+73996-7 4R+	0+ 0 0	+16301-6 0	+24575-6 0	+15382-5 0	+13004-5	13
0	+67656-7 4R+	0+ 0 0	+31330-6 0	+57755-6 0	+16707-5 0	+12696-5	14
0	+74758-7 4R+	0+ 0 0	+79651-6 0	+14575-5 0	+20226-5 0	+12376-5	15
0	+87792-7 4R+	0+ 0 0	+18745-5 0	+35431-5 0	+30043-5 0	+11298-5	16
0	+56512-7 4R+	0+ 0					17
204	.344	.168	.18	.09	.014		18

0.0 0. 0. 0. 0. 0. 0.
 0.0 0. 0. 0. 0. 0. 0.

+++++ MATERIAL 6 ZONE 2
 0 +84445-8 0 + 0+ 0 0 +9857-6 0 +20309-6 7R+ 0+ 0 0 +11521-5 0
 0 +24793-6 0 +40153-6 6R+ 0+ 0 0 +24260-5 0 +20976-5 0 +57109-6 0 +34877-6 0
 0 +27532-7 5R+ 0+ 0 0 +24260-5 0 +85022-6 0 +93343-6 0 +30319-6 0
 0 +97532-7 4R+ 0+ 0 0 +56035-5 0 +17888-5 0 +12636-5 0 +44609-6 0
 0 +18526-6 0 +58688-7 3R+ 0+ 0 0 +57556-5 0 +25555-5 0 +15183-5 0
 0 +31717-6 0 +12573-6 0 +51062-7 0 +19422-7 2R+ 0+ 0 0 +62576-5 0
 0 +29899-5 0 +26500-5 0 +24391-6 0 +53564-7 0 +20621-7 0 +10550-7 0

1111.00250, 1X1X1, REF., 4IN.U(4)02 RODS+POLY, 135GUS/L, FLOODED+WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.01003E+00	6.68333E-02	1.00000E+00	0.	0.
2	9.84482E-01	1.29333E-01	1.00000E+00	0.	0.
3	9.51987E-01	1.86500E-01	9.51987E-01	0.	0.
4	9.60199E-01	2.54667E-01	9.56094E-01	4.10491E-03	0.
5	9.67186E-01	3.23167E-01	9.52722E-01	4.32140E-03	0.
6	9.91514E-01	3.85000E-01	9.67747E-01	8.54010E-03	0.
7	9.81261E-01	4.50833E-01	9.70450E-01	7.14601E-03	0.
8	1.02180E+00	5.14000E-01	9.87342E-01	1.78710E-02	0.
9	1.00336E+00	5.71667E-01	9.89530E-01	1.52761E-02	0.
10	9.90270E-01	6.37000E-01	9.89710E-01	1.32297E-02	0.
11	9.82224E-01	6.92500E-01	9.88954E-01	1.14219E-02	0.
12	9.72780E-01	7.66667E-01	9.87337E-01	1.05819E-02	0.
13	9.50548E-01	8.28833E-01	9.83994E-01	1.01392E-02	0.
WARNING - ONLY 283 INDEPENDENT FISSION PO					
14	8.99462E-01	8.93500E-01	9.76950E-01	1.16315E-02	0.
15	9.83454E-01	9.55167E-01	9.77450E-01	1.07111E-02	0.
16	1.01136E+00	1.01700E+00	9.79172E-01	1.07000E-02	0.
17	9.31522E-01	1.09017E+00	9.76546E-01	1.09349E-02	0.
18	9.91614E-01	1.15500E+00	9.77584E-01	9.43331E-03	0.
19	9.70416E-01	1.21666E+00	9.77162E-01	8.87108E-03	0.
20	1.10963E+00	1.27517E+00	9.84522E-01	1.11407E-02	0.
21	1.01412E+00	1.33467E+00	9.86079E-01	1.06526E-02	0.
22	9.45655E-01	1.39633E+00	9.84055E-01	1.07061E-02	0.
23	9.44818E-01	1.46117E+00	9.82190E-01	9.97951E-03	0.
24	1.05565E+00	1.51850E+00	9.85529E-01	1.00839E-02	0.
25	9.96369E-01	1.57917E+00	9.85913E-01	9.64318E-03	0.
26	9.45573E-01	1.64900E+00	9.84232E-01	9.38439E-03	0.
27	1.02800E+00	1.71250E+00	9.85983E-01	9.16990E-03	0.
28	1.02451E+00	1.76867E+00	9.87465E-01	8.93393E-03	0.
29	9.97738E-01	1.83657E+00	9.87845E-01	8.60509E-03	0.
30	1.07944E+00	1.89283E+00	9.91117E-01	8.91396E-03	0.
31	9.16261E-01	1.95683E+00	9.88560E-01	8.92315E-03	0.
32	9.64258E-01	2.03017E+00	9.87749E-01	8.70765E-03	0.
33	1.04317E+00	2.08583E+00	9.89537E-01	8.60879E-03	0.
34	9.19427E-01	2.15567E+00	9.82346E-01	8.61855E-03	0.
35	9.70652E-01	2.21800E+00	9.86840E-01	8.36811E-03	0.
36	9.46281E-01	2.28250E+00	9.85648E-01	8.20511E-03	0.
WARNING - ONLY 294 INDEPENDENT FISSION PO					
37	8.77302E-01	2.35233E+00	9.82552E-01	8.54820E-03	0.
38	9.92545E-01	2.41750E+00	9.82830E-01	8.31200E-03	0.
39	1.00937E+00	2.48300E+00	9.83547E-01	8.11529E-03	0.
40	9.84797E-01	2.55150E+00	9.83580E-01	7.89959E-03	0.
41	1.00633E+00	2.61617E+00	9.84163E-01	7.71645E-03	0.
42	9.59070E-01	2.67433E+00	9.83536E-01	7.54718E-03	0.
43	1.05880E+00	2.73483E+00	9.85371E-01	7.58628E-03	0.
44	9.57698E-01	2.80083E+00	9.84712E-01	7.43271E-03	0.
45	9.76325E-01	2.86900E+00	9.84517E-01	7.26042E-03	0.
46	1.01364E+00	2.93033E+00	9.85179E-01	7.12431E-03	0.
47	1.01136E+00	2.98883E+00	9.85774E-01	6.98956E-03	0.
48	9.21625E-01	3.05417E+00	9.85467E-01	6.84284E-03	0.
49	1.02177E+00	3.11533E+00	9.85279E-01	6.74007E-03	0.
50	9.91167E-01	3.17550E+00	9.86342E-01	6.59896E-03	0.
51	1.02072E+00	3.23733E+00	9.87047E-01	6.50129E-03	0.
52	9.87964E-01	3.29833E+00	9.87066E-01	6.36977E-03	0.
53	1.00519E+00	3.36483E+00	9.87421E-01	6.25392E-03	0.

3.4310E+00 9.4480E-01 6.1258E-03
 3.5001E+00 9.3720E-01 6.1258E-03
 3.5540E+00 9.2851E-01 6.1258E-03

54	1.03340E+00	3.43100E+00	9.88305E-01	6.19589E-03	0.
55	9.23322E-01	3.50017E+00	9.87207E-01	6.17699E-03	0.
56	1.05787E+00	3.55800E+00	9.88512E-01	6.20126E-03	0.
57	9.91093E-01	3.61783E+00	9.88559E-01	6.08765E-03	0.
58	9.31200E-01	3.68250E+00	9.87547E-01	6.06227E-03	0.
59	1.00959E+00	3.74467E+00	9.87934E-01	5.96819E-03	0.
60	1.06718E+00	3.80483E+00	9.89300E-01	6.02145E-03	0.
61	1.00511E+00	3.85417E+00	9.89568E-01	5.92457E-03	0.
62	8.81091E-01	3.93483E+00	9.87760E-01	6.09912E-03	0.
63	8.75390E-01	4.00900E+00	9.85918E-01	6.27479E-03	0.
64	9.10304E-01	4.07817E+00	9.84699E-01	6.29208E-03	0.
65	1.03541E+00	4.13717E+00	9.85504E-01	6.24351E-03	0.

KEN04LCM VERS.2.1 (10/30/77) 05/14/78

WARNING - ONLY 296 INDEPENDENT FISSION POINTS

WARNING - ONLY 292 INDEPENDENT FISSION POINTS

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THESE ARE NEYMAX, NEYMAX, NEYMAX UNITS IN AN ARRAY.

TITLE(BB250,1X1X1,REFL,.4IN.U(4)02 RODS+POLY,135GU5/L,FLOODED+WEBB)

START TIME = 7.16181E-05 + OR - 7.60541E-07

GENERATION TIME = 2.62751E-05 + OR - 3.18831E-07

NO. OF INITIAL GENERATIONS SKIPPED

	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
3	.98604 + OR -	.00677	.97972 TO .99237	.97340 TO .99869	.96708 TO 1.00501
4	.98547 + OR -	.00641	.98006 TO .99288	.97365 TO .99929	.96723 TO 1.00570
5	.98679 + OR -	.00651	.98028 TO .99330	.97377 TO .99981	.96726 TO 1.00632
6	.98671 + OR -	.00662	.98009 TO .99333	.97346 TO .99995	.96684 TO 1.00657
7	.98680 + OR -	.00674	.98007 TO .99354	.97333 TO 1.00027	.96659 TO 1.00701
8	.98531 + OR -	.00669	.97862 TO .99200	.97194 TO .99868	.96525 TO 1.00537
9	.98499 + OR -	.00680	.97819 TO .99179	.97139 TO .99858	.96459 TO 1.00538
10	.98489 + OR -	.00692	.97797 TO .99181	.97105 TO .99874	.96413 TO 1.00566
11	.98493 + OR -	.00705	.97788 TO .99198	.97083 TO .99903	.96377 TO 1.00608
12	.98516 + OR -	.00718	.97798 TO .99234	.97079 TO .99952	.96361 TO 1.00670
17	.98827 + OR -	.00758	.98069 TO .99585	.97311 TO 1.00343	.96554 TO 1.01101
22	.98618 + OR -	.00787	.97831 TO .99405	.97044 TO 1.00191	.96257 TO 1.00978
27	.98519 + OR -	.00851	.97668 TO .99370	.96817 TO 1.00221	.95966 TO 1.01072
32	.98344 + OR -	.00903	.97444 TO .99249	.96541 TO 1.00151	.95639 TO 1.01054
37	.98919 + OR -	.00925	.97995 TO .99844	.97070 TO 1.00768	.96146 TO 1.01693
42	.98893 + OR -	.01116	.97777 TO 1.00008	.96661 TO 1.01124	.95546 TO 1.02240
47	.98483 + OR -	.01347	.97136 TO .99830	.95789 TO 1.01127	.94442 TO 1.02524
52	.97950 + OR -	.01830	.96119 TO .99780	.94289 TO 1.01610	.92459 TO 1.03440
57	.96450 + OR -	.02610	.93840 TO .99060	.91229 TO 1.01670	.88619 TO 1.04250
62	.94037 + OR -	.04858	.89779 TO .98895	.84321 TO 1.03753	.72403 TO 1.08511

FOR THE EVALUATION DESCRIBED IN SECTION 3.2.b

MINIEM VER. 2.1 CHD 8/77 22 04/2000

AND IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999
 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890

111 EIPP: 40 AXSOX 9 FULL REF U(S)+POLY 1.69GU/CC, H/U=1.50, ACCIDENT WEIGH

16	2	0	2000	0	1	1	1	42	3	4
SR1012	5012									
1		1101	4.01409	-3						
1		8100	1.53250	-2						
1		-92508	2.71029	-4						
1		92325	6.42244	-3						
2		100		1.						
3		1101		.00081						
3		8100		.00242						
3		12100		.00041						
3		13100		.00023						
3		14100		.00052						
3		19100		.00012						
3		26100		.00009						

3 501 1.-15

4		300		1.						
5		401		1.						

6 13100 .04027

7 501 1.-15

8 200 1.

9 401 041082 9 -92508 2.71012-4 9 92809 4.07127-3

CY.INDER	9	10.795	161.29	0.162						
CY.INDER	0	14.605	161.29	0.162						
CY.INDER	2	14.757	162.55	-3.175	162					
CY.INDER	3	14.757	177.178	-1.175	162					
CY.INDER	3	28.423	177.178	-10.478	162					
CY.INDER	2	28.575	177.33	-10.63	162					
CY.INDER	7	8.575	-28.575	28.575	-28.75	177.33	-10.63	162		

END OF INPUT LISTING

DATA 2.001. 811. 205500. 1.52-012E. H/D=1.50. ACCTIME(WTRD)

N	START TIME	ELAPSED TIME (MIN)	AVG. RATE	DEVIATION	MATCH
1	4.70000E+00	4.70000E+00	1.00000E+00	0.	0.
2	9.33333E+00	9.33333E+00	1.00000E+00	0.	0.
3	1.26667E+01	1.26667E+01	1.03211E+00	0.	0.
4	1.63333E+01	1.63333E+01	1.00027E+00	3.18422E-02	0.
5	2.02167E+01	2.02167E+01	9.92525E-01	1.92422E-02	0.
6	2.43167E+01	2.43167E+01	9.78836E-01	1.96565E-02	0.
7	2.80333E+01	2.80333E+01	9.77630E-01	1.52736E-02	0.
8	3.21833E+01	3.21833E+01	9.66121E-01	1.42227E-02	0.
9	3.61667E+01	3.61667E+01	9.70911E-01	1.50513E-02	0.
10	4.00167E+01	4.00167E+01	9.70268E-01	1.30593E-02	0.
11	4.38833E+01	4.38833E+01	9.72732E-01	1.17779E-02	0.
12	4.77500E+01	4.77500E+01	9.71638E-01	1.05911E-02	0.
13	5.16333E+01	5.16333E+01	9.72286E-01	9.60188E-03	0.
14	5.57500E+01	5.57500E+01	9.72179E-01	8.76527E-03	0.
15	5.97833E+01	5.97833E+01	9.68731E-01	8.76952E-03	0.
16	6.39000E+01	6.39000E+01	9.71395E-01	8.54489E-03	0.
17	6.81555E+01	6.81555E+01	9.70912E-01	7.96949E-03	0.
18	7.24167E+01	7.24167E+01	9.71603E-01	7.48675E-03	0.
19	7.68000E+01	7.68000E+01	9.72097E-01	7.04990E-03	0.
20	8.12033E+01	8.12033E+01	9.70764E-01	6.77907E-03	0.
21	8.57167E+01	8.57167E+01	9.70800E-01	6.41246E-03	0.
22	9.03333E+01	9.03333E+01	9.72916E-01	6.44078E-03	0.
23	9.50500E+01	9.50500E+01	9.72374E-01	6.15032E-03	0.
24	9.98750E+01	9.98750E+01	9.73047E-01	5.90253E-03	0.
25	1.04800E+02	1.04800E+02	9.70474E-01	6.19919E-03	0.
26	1.10000E+02	1.10000E+02	9.71658E-01	6.05219E-03	0.
27	1.15333E+02	1.15333E+02	9.69579E-01	6.16592E-03	0.
28	1.20800E+02	1.20800E+02	9.68142E-01	6.09593E-03	0.
29	1.26400E+02	1.26400E+02	9.68072E-01	5.86622E-03	0.
30	1.32100E+02	1.32100E+02	9.69168E-01	5.75305E-03	0.
31	1.38000E+02	1.38000E+02	9.65859E-01	6.46670E-03	0.
32	1.44000E+02	1.44000E+02	9.66232E-01	6.25588E-03	0.
33	1.50100E+02	1.50100E+02	9.65553E-01	6.09135E-03	0.
34	1.56300E+02	1.56300E+02	9.64035E-01	6.09016E-03	0.
35	1.62600E+02	1.62600E+02	9.66332E-01	5.91055E-03	0.
36	1.69100E+02	1.69100E+02	9.64720E-01	5.74674E-03	0.
37	1.75700E+02	1.75700E+02	9.66453E-01	5.84306E-03	0.
38	1.82500E+02	1.82500E+02	9.63864E-01	6.24063E-03	0.
39	1.89500E+02	1.89500E+02	9.62438E-01	6.23497E-03	0.
40	1.96700E+02	1.96700E+02	9.63275E-01	6.12608E-03	0.
41	2.04100E+02	2.04100E+02	9.64426E-01	6.07700E-03	0.
42	2.11700E+02	2.11700E+02	9.65080E-01	5.95217E-03	0.
43	2.19500E+02	2.19500E+02	9.65152E-01	5.81741E-03	0.
44	2.27500E+02	2.27500E+02	9.65718E-01	5.70052E-03	0.
45	2.35700E+02	2.35700E+02	9.66652E-01	5.66627E-03	0.
46	2.44100E+02	2.44100E+02	9.66227E-01	5.55272E-03	0.
47	2.52700E+02	2.52700E+02	9.64181E-01	5.42818E-03	0.
48	2.61500E+02	2.61500E+02	9.64514E-01	5.31922E-03	0.
49	2.70500E+02	2.70500E+02	9.65132E-01	5.24167E-03	0.
50	2.80000E+02	2.80000E+02	9.65777E-01	5.20314E-03	0.
51	2.90000E+02	2.90000E+02	9.65952E-01	5.12940E-03	0.
52	2.99500E+02	2.99500E+02	9.66660E-01	5.07241E-03	0.
53	3.09500E+02	3.09500E+02	9.65763E-01	4.97651E-03	0.
54	3.19500E+02	3.19500E+02	9.66652E-01	4.91640E-03	0.
55	3.29500E+02	3.29500E+02	9.66706E-01	4.83156E-03	0.

1.7250E-01	1.8417E+00	2.6477E-01	4.7598E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.6733E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.6054E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.5265E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.4546E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.3967E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.3412E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.2835E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.2487E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.2325E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.4372E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.4719E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.4453E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.4123E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.3610E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.3091E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.2622E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.2096E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1507E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1978E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1427E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1404E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1067E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.0720E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.1442E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.0918E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.0882E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.0752E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	4.0353E-03	0.
1.7250E-01	1.8417E+00	2.6477E-01	3.9880E-03	0.

MINIMUM VALUE

2.20047E+00	9.65785E-01	4.75985E-03	0.
2.23517E+00	9.65675E-01	4.67338E-03	0.
2.27650E+00	9.66042E-01	4.60547E-03	0.
2.31317E+00	9.66236E-01	4.52656E-03	0.
2.35250E+00	9.65923E-01	4.45465E-03	0.
2.39117E+00	9.65521E-01	4.39674E-03	0.
2.42957E+00	9.65920E-01	4.34127E-03	0.
2.46883E+00	9.66335E-01	4.28355E-03	0.
2.50717E+00	9.65793E-01	4.24871E-03	0.
2.54467E+00	9.64347E-01	4.2325E-03	0.
2.58367E+00	9.65201E-01	4.43729E-03	0.
2.62017E+00	9.64245E-01	4.47194E-03	0.
2.65650E+00	9.63638E-01	4.44533E-03	0.
2.69483E+00	9.63022E-01	4.41232E-03	0.
2.73350E+00	9.62742E-01	4.36108E-03	0.
2.77133E+00	9.63059E-01	4.30913E-03	0.
2.81267E+00	9.63418E-01	4.26225E-03	0.
2.85100E+00	9.63161E-01	4.20962E-03	0.
2.89267E+00	9.63165E-01	4.15077E-03	0.
2.92933E+00	9.64076E-01	4.19782E-03	0.
2.96833E+00	9.64204E-01	4.14270E-03	0.
3.00750E+00	9.64847E-01	4.14043E-03	0.
3.04700E+00	9.65283E-01	4.10671E-03	0.
3.08500E+00	9.65676E-01	4.07205E-03	0.
3.12633E+00	9.66655E-01	4.14421E-03	0.
3.16500E+00	9.66746E-01	4.09188E-03	0.
3.20417E+00	9.66118E-01	4.08826E-03	0.
3.24317E+00	9.66670E-01	4.07525E-03	0.
3.28250E+00	9.66322E-01	4.03537E-03	0.
3.32150E+00	9.66280E-01	3.98803E-03	0.

WARNING - ONLY 286 INDEPENDENT FISSION PRODUCTS

MAX is the largest eigenvalue of the matrix of fission probabilities by unit.
 MIN, MAX, MINMAX, MAXMAX UNITS IN AN ARRAY.

SEE COMMENTS, 1.626000, HZ=1.50, ACCIDENT MODE

GENERATION TIME = 1.9222E-06

GENERATION TIME = 1.9222E-06

AVIATION EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
.95548	+ OR - .00395	.96152 TO .96943	.95757 TO .97337	.95363 TO .97721
.95549	+ OR - .00400	.96144 TO .96944	.95743 TO .97345	.95363 TO .97745
.95531	+ OR - .00405	.96124 TO .96935	.95719 TO .97340	.95314 TO .97745
.95554	+ OR - .00409	.96156 TO .96973	.95747 TO .97382	.95338 TO .97777
.95555	+ OR - .00414	.96141 TO .96969	.95727 TO .97383	.95313 TO .97797
.95529	+ OR - .00413	.96216 TO .97041	.95803 TO .97454	.95391 TO .97867
.95585	+ OR - .00416	.96169 TO .97001	.95754 TO .97417	.95338 TO .97833
.95585	+ OR - .00421	.96164 TO .97007	.95743 TO .97428	.95321 TO .97850
.95549	+ OR - .00426	.96124 TO .96975	.95698 TO .97401	.95273 TO .97826
.95555	+ OR - .00431	.96123 TO .96986	.95692 TO .97417	.95260 TO .97849
.95526	+ OR - .00455	.96070 TO .96981	.95615 TO .97437	.95159 TO .97892
.95417	+ OR - .00484	.95934 TO .96901	.95450 TO .97384	.94967 TO .97868
.95485	+ OR - .00507	.95979 TO .96993	.95471 TO .97500	.94964 TO .97907
.95531	+ OR - .00519	.96112 TO .97149	.95593 TO .97668	.95074 TO .98187
.95515	+ OR - .00547	.96068 TO .97163	.95520 TO .97710	.94973 TO .98258
.95740	+ OR - .00540	.96199 TO .97280	.95659 TO .97820	.95118 TO .98361
.95376	+ OR - .00523	.96283 TO .97470	.95690 TO .98063	.95092 TO .98556
.95514	+ OR - .00562	.95942 TO .97266	.95280 TO .97928	.94618 TO .98982
.95743	+ OR - .00757	.95986 TO .97500	.95229 TO .98257	.94471 TO .98971
.95756	+ OR - .00706	.95728 TO .97602	.94872 TO .98515	.93788 TO .99421
.95511	+ OR - .00992	.96481 TO .98245	.95528 TO .99127	.94718 TO .99992
.95511	+ OR - .01057	.97191 TO .99208	.96121 TO 1.00063	.95087 TO .99988
.95511	+ OR - .01436	.96517 TO .99382	.95091 TO 1.00025	.93000 TO .99999
.95511	+ OR - .02147	.95010 TO .99218	.92240 TO 1.00157	.89200 TO .99999

FOR THE EVALUATION DESCRIBED IN SECTION 3.2.c

KEN04LCH VERS.2.1 (10/30/79) 05/13/80 13.24.36 PAGE 3

NO IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R

111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999
 12345678901234567890123456789012345678901234567890123456789012345678901234567890

TITLE (UB250, 18x18x), FULL REFL, U(S)+POLY, 1.69GU/CC, H/U=1.50, ACCIDENT=WEBB)

4.8 85 301 3 16 6 16 9 21 7 1 18 18 5
 16 2 0 2000 0 1 1 1 42 3 4

SR1012 5012
 1 1101 4.01608-3
 1 8100 1.53935-2
 1 -92508 2.71029-4
 1 92809 6.42244-3
 2 100 1.
 3 1101 .00081
 3 8100 .60242
 3 2100 .00041
 3 3100 .00023
 3 14100 .00052
 3 19100 .00012
 3 26100 .00009

3 501 .02
 4 500 1.
 5 401 1.

6 33100 .94027
 7 501 .05
 8 200 1.
 9 501 .081682 9 -92508 2.17012-4 9 92809 6.07125-3
 CYLINDER 9 10.775 161.29 0.162
 CYLINDER 0 14.605 161.29 0.162
 CYLINDER 2 14.757 162.56 -.5175 162
 CYLINDER 7 14.757 172.098 -.5175 162
 CYLINDER 7 25.248 172.098 -5.598 162
 CYLINDER 2 25.4 172.25 -5.55 162
 CYLINDER 7 25.4 -25.4 25.4 -25.4 172.25 -5.55 162

END OF INPUT LISTING *****

1(BB250,18x18x5,FULL REFL,U(5)+POLY,1.69GU/CC,H/U=1.50,ACCIDENT#WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.08785E+00	3.68333E-02	1.00000E+00	0.	0.
2	9.79681E-01	6.81667E-02	1.00000E+00	0.	0.
3	9.67615E-01	9.98333E-02	9.67615E-01	0.	0.
4	1.01070E+00	1.32167E-01	9.89159E-01	2.15440E-02	0.
5	9.72919E-01	1.63833E-01	9.83745E-01	1.35653E-02	0.
6	1.00149E+00	1.95167E-01	9.65182E-01	1.05383E-02	0.
7	8.91144E-01	2.27167E-01	9.68774E-01	2.10633E-02	0.
8	1.00966E+00	2.58500E-01	9.75589E-01	1.84990E-02	0.
9	9.32040E-01	2.91000E-01	9.69367E-01	1.68268E-02	0.
10	9.87202E-01	3.22833E-01	9.71597E-01	1.47420E-02	0.
11	9.72560E-01	3.57000E-01	9.71704E-01	1.30017E-02	0.
12	8.71535E-01	3.89833E-01	9.61687E-01	1.53482E-02	0.
13	1.00399E+00	4.20500E-01	9.65533E-01	1.44058E-02	0.
14	9.78852E-01	4.54000E-01	9.66643E-01	1.31974E-02	0.
15	9.94692E-01	4.86167E-01	9.68801E-01	1.23301E-02	0.
16	8.69095E-01	5.16833E-01	9.61679E-01	1.34549E-02	0.
17	9.76005E-01	5.48667E-01	9.62634E-01	1.25622E-02	0.
18	9.35664E-01	5.80667E-01	9.60948E-01	1.18711E-02	0.
19	9.38921E-01	6.12667E-01	9.59653E-01	1.12260E-02	0.
20	1.03666E+00	6.45000E-01	9.63931E-01	1.14158E-02	0.
21	9.52017E-01	6.75500E-01	9.63304E-01	1.08165E-02	0.
22	9.61769E-01	7.05667E-01	9.63227E-01	1.02617E-02	0.
23	9.40637E-01	7.37333E-01	9.62152E-01	9.81983E-03	0.
24	8.60747E-01	7.68333E-01	9.57543E-01	1.04359E-02	0.
25	1.06722E+00	7.99667E-01	9.62329E-01	1.10609E-02	0.
26	9.28377E-01	8.30500E-01	9.60914E-01	1.06840E-02	0.
27	9.78034E-01	8.62500E-01	9.61599E-01	1.02706E-02	0.
28	9.80768E-01	8.93333E-01	9.62336E-01	9.89521E-03	0.
29	9.47801E-01	9.25500E-01	9.61798E-01	9.53687E-03	0.
30	9.17229E-01	9.55500E-01	9.60206E-01	9.32679E-03	0.
31	9.84799E-01	9.87667E-01	9.61054E-01	9.03930E-03	0.
32	9.61492E-01	1.01800E+00	9.61069E-01	8.73280E-03	0.
WARNING - ONLY 298 INDEPENDENT FISSION POINTS WER					
33	9.04528E-01	1.04800E+00	9.59245E-01	8.64108E-03	0.
34	1.03022E+00	1.08000E+00	9.6081E-01	8.66050E-03	0.
35	9.71913E-01	1.11067E+00	9.61797E-01	8.39991E-03	0.
36	9.71344E-01	1.14200E+00	9.62078E-01	8.15394E-03	0.
37	9.31613E-01	1.17383E+00	9.61208E-01	7.96525E-03	0.
38	9.29271E-01	1.20433E+00	9.60321E-01	7.79150E-03	0.
39	9.85423E-01	1.23533E+00	9.60999E-01	7.60830E-03	0.
40	9.49734E-01	1.26583E+00	9.60424E-01	7.41488E-03	0.
41	9.13711E-01	1.29800E+00	9.59421E-01	7.32174E-03	0.
42	8.92178E-01	1.33033E+00	9.57740E-01	7.33168E-03	0.
43	9.84782E-01	1.36167E+00	9.58434E-01	7.18421E-03	0.
44	1.01599E+00	1.39200E+00	9.57799E-01	7.14277E-03	0.
45	8.82362E-01	1.42367E+00	9.57998E-01	7.20338E-03	0.
46	9.28171E-01	1.45417E+00	9.57321E-01	7.07037E-03	0.
47	9.50542E-01	1.48550E+00	9.58502E-01	7.01167E-03	0.
48	9.58790E-01	1.51850E+00	9.58463E-01	6.85766E-03	0.
49	9.59468E-01	1.55200E+00	9.58484E-01	6.71020E-03	0.
50	9.77367E-01	1.58483E+00	9.57190E-01	6.60674E-03	0.
51	9.81678E-01	1.61833E+00	9.57640E-01	6.48609E-03	0.
52	9.87422E-01	1.65200E+00	9.57074E-01	6.37004E-03	0.
53	9.93321E-01	1.68571E+00	9.61547E-01	6.41473E-03	0.
54	1.01472E+00	1.71933E+00	9.62592E-01	6.37109E-03	0.

1.2555E+01	2.61729E-01	7.61729E-03
1.2225E+01	2.52208E-01	7.22208E-03
1.2000E+01	2.4371E-01	7.24371E-03
1.1775E+01	2.3521E-01	7.23521E-03
1.1550E+01	2.2671E-01	7.22671E-03
1.1325E+01	2.1821E-01	7.21821E-03
1.1100E+01	2.0971E-01	7.20971E-03
1.0875E+01	2.0121E-01	7.20121E-03
1.0650E+01	1.9271E-01	7.19271E-03
1.0425E+01	1.8421E-01	7.18421E-03
1.0200E+01	1.7571E-01	7.17571E-03
1.0000E+01	1.6721E-01	7.16721E-03
9.9775E+00	1.5871E-01	7.15871E-03
9.9550E+00	1.5021E-01	7.15021E-03
9.9325E+00	1.4171E-01	7.14171E-03
9.9100E+00	1.3321E-01	7.13321E-03
9.8875E+00	1.2471E-01	7.12471E-03
9.8650E+00	1.1621E-01	7.11621E-03
9.8425E+00	1.0771E-01	7.10771E-03
9.8200E+00	1.0000E-01	7.10000E-03
9.7975E+00	9.2290E-02	6.92290E-03
9.7750E+00	8.4580E-02	6.74580E-03
9.7525E+00	7.6870E-02	6.56870E-03
9.7300E+00	6.9160E-02	6.39160E-03
9.7075E+00	6.1450E-02	6.21450E-03
9.6850E+00	5.3740E-02	6.03740E-03
9.6625E+00	4.6030E-02	5.86030E-03
9.6400E+00	3.8320E-02	5.68320E-03
9.6175E+00	3.0610E-02	5.50610E-03
9.5950E+00	2.2900E-02	5.32900E-03
9.5725E+00	1.5190E-02	5.15190E-03
9.5500E+00	7.4800E-03	4.97480E-03
9.5275E+00	0.0000E+00	0.00000E+00

KEN04LCM VERS.2.1 (10/30/79) 05/13/80 13

55	1.05889E+00	1.74467E+00	9.64377E-01	6.50868E-03	0.
56	9.89605E-01	1.77600E+00	9.64844E-01	6.40408E-03	0.
57	9.39309E-01	1.80917E+00	9.64380E-01	6.30366E-03	0.
58	9.51091E-01	1.84333E+00	9.64142E-01	6.19464E-03	0.
59	9.53448E-01	1.87483E+00	9.63955E-01	6.08788E-03	0.
60	9.54292E-01	1.90700E+00	9.63788E-01	5.98432E-03	0.
61	9.91782E-01	1.93933E+00	9.64263E-01	5.90112E-03	0.
62	9.75520E-01	1.97217E+00	9.64450E-01	5.80497E-03	0.
63	1.05981E+00	2.00617E+00	9.68010E-01	5.91831E-03	0.
64	9.86830E-01	2.03917E+00	9.66346E-01	5.83175E-03	0.
65	9.99940E-01	2.07250E+00	9.66879E-01	5.76315E-03	0.
66	1.01733E+00	2.10383E+00	9.67688E-01	5.72691E-03	0.
67	9.17565E-01	2.13483E+00	9.66897E-01	5.69056E-03	0.
68	9.91003E-01	2.16767E+00	9.67262E-01	5.61557E-03	0.
69	9.83049E-01	2.20050E+00	9.67498E-01	5.53613E-03	0.
70	9.53820E-01	2.23317E+00	9.67297E-01	5.45782E-03	0.
71	9.53565E-01	2.26617E+00	9.67098E-01	5.38182E-03	0.
WARNING - ONLY 293 INDEPENDENT FISSION POINTS WERE					
72	8.61747E-01	2.29733E+00	9.65593E-01	5.51375E-03	0.
73	1.04953E+00	2.32933E+00	9.65775E-01	5.56262E-03	0.
74	1.00499E+00	2.36117E+00	9.67306E-01	5.51043E-03	0.
75	9.98541E-01	2.39233E+00	9.67733E-01	5.45124E-03	0.
76	9.64683E-01	2.42400E+00	9.67692E-01	5.37723E-03	0.
77	9.14406E-01	2.45500E+00	9.66982E-01	5.35242E-03	0.
78	9.47995E-01	2.48617E+00	9.66732E-01	5.28743E-03	0.
79	9.30801E-01	2.51783E+00	9.66265E-01	5.23213E-03	0.
80	9.46401E-01	2.54967E+00	9.66011E-01	5.17779E-03	0.
81	9.88174E-01	2.58100E+00	9.66291E-01	5.11952E-03	0.
82	1.02224E+00	2.61300E+00	9.67033E-01	5.10227E-03	0.
83	9.56216E-01	2.64533E+00	9.66897E-01	5.04757E-03	0.
84	1.00700E+00	2.67550E+00	9.67389E-01	5.00956E-03	0.
85	9.89214E-01	2.70683E+00	9.66444E-01	5.03812E-03	0.

MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 KE ARE KE1MAX, KE2MAX, KE3MAX UNITS IN AN ARRAY.

1. EFB250, 18x18x5, FULL REFL, U(S)+POLY, 1.69GU/CC, H/U=1.50, ACCIDENT#WEBB)

TIME = 2.57458E-04 + OR - 1.73291E-06

GENERATION TIME = 2.17704E-04 + OR - 1.73123E-06

INITIAL GENERATIONS DIPPED	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
3	.96643	+ OR - .00510	.96133 TO .97153	.95623 TO .97663	.95113 TO .98173
4	.96588	+ OR - .00513	.96075 TO .97102	.95562 TO .97615	.95048 TO .98128
5	.96580	+ OR - .00520	.96060 TO .97099	.95540 TO .97619	.95020 TO .98139
6	.96534	+ OR - .00524	.96010 TO .97059	.95486 TO .97583	.94961 TO .98107
7	.96629	+ OR - .00522	.96107 TO .97152	.95585 TO .97674	.95063 TO .98196
8	.96573	+ OR - .00526	.96047 TO .97099	.95521 TO .97625	.94995 TO .98151
9	.96618	+ OR - .00531	.96086 TO .97149	.95555 TO .97680	.95024 TO .98211
10	.96589	+ OR - .00538	.96052 TO .97127	.95514 TO .97664	.94977 TO .98202
11	.96580	+ OR - .00545	.96036 TO .97125	.95491 TO .97670	.94946 TO .98215
12	.96710	+ OR - .00537	.96173 TO .97246	.95637 TO .97783	.95100 TO .98319
17	.96728	+ OR - .00553	.96175 TO .97282	.95622 TO .97835	.95069 TO .98388
22	.96747	+ OR - .00582	.96164 TO .97329	.95582 TO .97911	.95000 TO .98494
27	.96853	+ OR - .00573	.96280 TO .97426	.95707 TO .98000	.95134 TO .98573
32	.96949	+ OR - .00617	.96331 TO .97566	.95714 TO .98183	.95097 TO .98801
37	.97026	+ OR - .00651	.96375 TO .97677	.95724 TO .98328	.95073 TO .98979
42	.97454	+ OR - .00678	.96776 TO .98132	.96098 TO .98810	.95420 TO .99489
47	.97595	+ OR - .00702	.96883 TO .98287	.96182 TO .98988	.95480 TO .99690
52	.97609	+ OR - .00804	.96805 TO .98413	.96002 TO .99217	.95198 TO 1.00021
57	.97650	+ OR - .00845	.96204 TO .97895	.95350 TO .98741	.94513 TO .99586
62	.97765	+ OR - .01020	.96145 TO .98184	.95125 TO .99204	.94106 TO 1.00123
67	.97481	+ OR - .01114	.95367 TO .97595	.94253 TO .98709	.93139 TO .99823
72	.97773	+ OR - .01281	.95822 TO .98384	.94541 TO .99665	.93261 TO 1.00945
77	.97741	+ OR - .01254	.94586 TO .97695	.93032 TO .99249	.91477 TO 1.00804
82	.97674	+ OR - .01347	.91657 TO .98491	.88240 TO 1.01908	.84823 TO 1.05325

FOR THE EVALUATION DESCRIBED IN SECTION 3.3.a AND 3.4.a

KEN04LCM VERS.2.1 (10/30/79) 05/13/80 08.57.57 PAGE 4

IS A CARD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

111111111222222222223333333333444444444455555555556666666666777777777788888888889999999999
 1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,1X1X1,REFL,.3IN,U(4)02 RODS+H20,118GU5/L,FLOODED*WEBB)

4.8 85 301 3 123 80 17 9 41 14 1 1 1 1

-17 0 0 2000 0 1 1 1 42 22

1 10001 4.62748-2 1 80003 3.81362-2 1 60002 1.-15 1 -922351 3.03655-4

1 6922381 7.12555-3

2 61002 .003921 2 260001 .083491

3 11001 8.1-4 3 81003 2.42-3 3 120005 4.1-4 3 130000 2.3-4 3 140005 5.2-4

3 190005 1.2-4 3 260001 9.-5 3 11001 1.-15 3 81003 1.-15

4 11001 .0085 4 61002 .0202 4 81003 .0355 4 140005 .0017 4 120005 .00186

4 260001 1.93-4 4 130000 5.56-4 4 190005 4.03-5 4 110000 1.63-5

5 11001 .079433 5 61002 .032716

6 130000 6.027-2

7 11001 6.6743-2 7 81003 3.3372-2

8 61002 3.1491-4 8 240003 1.6471-2 8 250005 1.7321-3 8 260001 6.036-2

8 280003 6.4834-3 8 140005 1.694-3

9 10001 1.-15 9 60002 1.-15 9 80003 1.-15 9 -922351 1.-15 9 6922381 1.-15

CY. INCR 1 14.7 5 50.346 0. 123Z

CY. INCR 7 14.605 161.29 0. 123Z

CY. INCR 2 14.757 162.56 -.3175 123Z

CY. INCR 7 14.757 172.028 -.3175 123Z

CY. INCR 7 25.248 172.098 -5.398 123Z

CY. INCR 2 25.4 172.25 -5.55 123Z

CY. INCR 7 25.4 -25.4 25.4 -25.4 172.25 -5.55 123Z

REF. FACTOR 4 6R30. 301

***** END OF INPUT LISTING *****

17. E (B) 250, 1X1X1, REFL, .3IN. U(4) 02 RODS+H2O, 118GU5/L, FLOODED (W) ERB)

GENERATION	K-EFFECTIVE	ELAPSED TIME (MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	9.56401E-01	8.10000E-02	1.00000E+00	0.	0.
2	9.51352E-01	1.51833E-01	1.00000E+00	0.	0.
3	9.12761E-01	2.24333E-01	9.12761E-01	0.	0.
4	9.50114E-01	3.00000E-01	9.31438E-01	1.86765E-02	0.
5	9.34622E-01	3.78333E-01	9.32435E-01	1.08282E-02	0.
6	9.36269E-01	4.46833E-01	9.33393E-01	7.71672E-03	0.
7	9.57185E-01	5.19500E-01	9.38151E-01	7.64016E-03	0.
8	9.44141E-01	5.82000E-01	9.42623E-01	7.52454E-03	0.
9	1.02945E+00	6.52833E-01	9.54907E-01	1.39341E-02	0.
10	9.42046E-01	7.27833E-01	9.53299E-01	1.22168E-02	0.
11	1.00863E+00	7.95472E-01	9.59453E-01	1.24077E-02	0.
12	9.64893E-01	8.63833E-01	9.59997E-01	1.11111E-02	0.
13	1.01283E+00	9.29500E-01	9.64800E-01	1.11392E-02	0.
14	9.78254E-01	9.97000E-01	9.65922E-01	1.02203E-02	0.
15	9.25285E-01	1.07733E+00	9.62776E-01	9.91607E-03	0.
16	1.01628E+00	1.13983E+00	9.66616E-01	9.94379E-03	0.
17	9.81822E-01	1.20800E+00	9.67630E-01	9.31250E-03	0.
18	9.77348E-01	1.28150E+00	9.67925E-01	8.71603E-03	0.
19	9.5591E-01	1.34833E+00	9.68258E-01	8.19407E-03	0.
20	9.7720E-01	1.41900E+00	9.69451E-01	7.81621E-03	0.
21	1.03548E+00	1.49100E+00	9.72926E-01	8.17005E-03	0.
22	1.02383E+00	1.56017E+00	9.75471E-01	8.15805E-03	0.
23	9.78581E-01	1.63033E+00	9.75619E-01	7.76124E-03	0.
24	1.05324E+00	1.69350E+00	9.79147E-01	8.19804E-03	0.
25	8.94315E-01	1.76317E+00	9.75459E-01	8.65839E-03	0.
26	9.12688E-01	1.83633E+00	9.72843E-01	8.69252E-03	0.
27	8.70817E-01	1.91533E+00	9.68762E-01	9.28286E-03	0.
28	1.02607E+00	1.98183E+00	9.70967E-01	9.18700E-03	0.
29	9.86881E-01	2.05533E+00	9.71556E-01	8.85982E-03	0.
30	9.92468E-01	2.12983E+00	9.72303E-01	8.57014E-03	0.
31	1.00752E+00	2.21333E+00	9.73520E-01	8.35832E-03	0.
32	9.23725E-01	2.27067E+00	9.71860E-01	8.24380E-03	0.
33	9.60504E-01	2.34800E+00	9.71494E-01	7.98185E-03	0.
34	9.82244E-01	2.42250E+00	9.71851E-01	7.73667E-03	0.
35	9.41106E-01	2.49650E+00	9.70920E-01	7.55622E-03	0.
36	9.80579E-01	2.56217E+00	9.71204E-01	7.33611E-03	0.
37	9.83315E-01	2.62833E+00	9.71564E-01	7.13253E-03	0.
38	9.51287E-01	2.70400E+00	9.71001E-01	6.95442E-03	0.
39	9.00127E-01	2.78283E+00	9.69085E-01	7.02985E-03	0.
WARNING - ONLY 297 INDEPENDENT FISSION POINTS					
40	9.02394E-01	2.85700E+00	9.67330E-01	7.06385E-03	0.
41	9.76432E-01	2.93050E+00	9.67564E-01	6.88430E-03	0.
42	1.04827E+00	2.92667E+00	9.69580E-01	7.00551E-03	0.
43	1.09646E+00	3.05950E+00	9.71945E-01	7.23046E-03	0.
44	1.01749E+00	3.12750E+00	9.73021E-01	7.13906E-03	0.
45	1.06715E+00	3.19333E+00	9.75217E-01	7.30462E-03	0.
46	9.77777E-01	3.26767E+00	9.74187E-01	7.21254E-03	0.
47	9.70530E-01	3.33900E+00	9.74105E-01	7.05091E-03	0.
48	9.65666E-01	3.40717E+00	9.73907E-01	6.83873E-03	0.
49	1.00035E+00	3.47617E+00	9.74828E-01	6.92238E-03	0.
50	9.60483E-01	3.54900E+00	9.74181E-01	6.71711E-03	0.
51	9.36755E-01	3.62217E+00	9.73617E-01	6.62283E-03	0.
52	1.00000E+00	3.69883E+00	9.73257E-01	6.51149E-03	0.
53	9.97238E-01	3.76883E+00	9.74414E-01	6.39884E-03	0.

	2.7845E+00	2.6789E+01	7.0291E-03	
54	2.8570E+00	2.6725E+01	7.0259E-03	
55	2.9305E+00	2.6756E+01	6.8849E-03	
56	2.9957E+00	2.6750E+01	7.0651E-03	
57	3.0529E+00	2.7123E+01	7.2906E-03	
58	3.1279E+00	2.7300E+01	7.1329E-03	
59	3.1953E+00	2.7521E+01	7.3066E-03	
60	3.2576E+00	2.7418E+01	7.2125E-03	
61	3.3329E+00	2.7410E+01	7.0509E-03	
62	3.4071E+00	2.7320E+01	6.8287E-03	
63	3.4761E+00	2.7489E+01	6.8225E-03	
64	3.5420E+00	2.7418E+01	6.7171E-03	
65	3.6221E+00	2.7341E+01	6.6228E-03	
66	3.6983E+00	2.7395E+01	6.5116E-03	
67	3.7683E+00	2.7441E+01	6.3988E-03	

KEN04LCM VEPS.2.1 (10/30/77) 05/13/80

WARNING - ONLY 283 INDEPENDENT FISSION POINTS

54	8.32548E-01	3.85267E+00	9.71820E-01	6.78947E-03	0.
55	9.61296E-01	3.93267E+00	9.71621E-01	6.66310E-03	0.
56	1.01557E+00	3.99717E+00	9.72435E-01	6.58900E-03	0.
57	1.03538E+00	4.05817E+00	9.73589E-01	6.57016E-03	0.
58	1.04025E+00	4.13583E+00	9.74779E-01	6.56065E-03	0.
59	1.04959E+00	4.20200E+00	9.76092E-01	6.57683E-03	0.
60	1.07689E+00	4.27050E+00	9.77830E-01	6.69204E-03	0.
61	1.00026E+00	4.33583E+00	9.78210E-01	6.58861E-03	0.
62	1.01574E+00	4.40083E+00	9.78835E-01	6.50800E-03	0.
63	9.72725E-01	4.47067E+00	9.78735E-01	6.40120E-03	0.
64	9.50271E-01	4.54933E+00	9.78276E-01	6.31383E-03	0.
65	9.24281E-01	4.62083E+00	9.77419E-01	6.27164E-03	0.

WARNING - ONLY 282 INDEPENDENT FISSION POINTS

66	8.84161E-01	4.69117E+00	9.75962E-01	6.34252E-03	0.
67	1.01403E+00	4.75450E+00	9.76548E-01	6.27159E-03	0.
68	9.21329E-01	4.82833E+00	9.75711E-01	6.23225E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THERE ARE KEMAX, KBYMAX, AND KBYZAX UNITS IN AN ARRAY.

3.258116-05 + OR - 2.350921-06

GENERATION TIME = 3.258116-05 + OR - 2.350921-06

WEEKS EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
1	.97658 + OR - .00625	.97043 TO .98293	.96418 TO .98718	.95777 TO .99223
2	.97709 + OR - .00634	.97076 TO .98363	.96442 TO .98777	.95809 TO .99191
5	.97777 + OR - .00640	.97137 TO .98417	.96497 TO .99057	.95857 TO .99143
6	.97844 + OR - .00647	.97197 TO .98491	.96550 TO .99138	.95903 TO .99097
7	.97872 + OR - .00657	.97222 TO .98536	.96566 TO .99192	.95909 TO .99091
8	.97903 + OR - .00667	.97236 TO .98571	.96569 TO .99238	.95902 TO .99098
9	.97818 + OR - .00673	.97145 TO .98491	.96472 TO .99164	.95799 TO .99201
10	.97880 + OR - .00682	.97198 TO .98562	.96517 TO .99244	.95835 TO .99165
11	.97828 + OR - .00692	.97136 TO .98520	.96444 TO .99211	.95752 TO .99248
12	.97852 + OR - .00704	.97148 TO .98556	.96444 TO .99259	.95740 TO .99260
17	.97609 + OR - .00760	.97049 TO .98568	.96289 TO .99328	.95530 TO 1.00470
22	.97582 + OR - .00826	.96755 TO .98408	.95929 TO .99234	.95103 TO 1.00897
27	.97995 + OR - .00830	.97165 TO .98825	.96335 TO .99635	.95505 TO 1.00495
32	.97832 + OR - .00920	.96972 TO .98812	.96052 TO .99732	.95131 TO 1.00869
37	.98039 + OR - .01062	.96978 TO .99101	.95916 TO 1.00162	.94855 TO 1.01145
42	.98514 + OR - .01152	.97362 TO .99666	.96211 TO 1.00815	.95059 TO 1.01941
47	.97915 + OR - .01271	.96644 TO .99186	.95374 TO 1.00427	.94103 TO 1.01897
52	.98119 + OR - .01609	.96510 TO .99728	.94902 TO 1.01337	.93293 TO 1.02945
57	.98632 + OR - .01832	.96800 TO 1.00464	.94967 TO 1.02297	.93135 TO 1.04065
62	.94447 + OR - .01842	.92598 TO .96295	.90750 TO .98144	.83801 TO .92222

3.258116-05 + OR - 2.350921-06

GENERATION TIME = 3.258116-05 + OR - 2.350921-06

3.258116-05 + OR - 2.350921-06

FOR THE EVALUATION DESCRIBED IN SECTION 3.3.b

KEN04LCM VERS.2.1 (10/30/79) 05/12/80 08.34.56 PAGE 3

IS A CARD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

11111111112222222222333333333344444444445555555555666666666677777777778
 1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,20X20X6,REFL.,.3IN.U(4)02 RODS+POLY,37GU5/L,H/U=3,NORMAL*WEBB)

4.8 85 301 3 123 80 17 9 41 14 1 20 20 5
 -17 0 0 2000 0 1 1 1 4Z 2Z
 1 10001 7.02437-3 1 60002 3.51214-3 1 80003 4.68497-3 1 -922351 9.48507-5
 1 922381 2.24763-3

2 61002 .003921 2 260001 .083491
 3 11001 8.1-4 3 81003 2.42-3 3 120005 4.1-4 3 130000 2.3-4 3 140005 5.2-4
 3 190005 1.2-4 3 260001 9.-5 3 11001 1.-15 3 81003 1.-15

4 11001 .0085 4 61002 .0202 4 81003 .035 4 140005 .0017 4 120005 .00186
 4 260001 1.93-4 4 130000 5.56-4 4 190005 4.03-5 4 110000 1.63-5
 5 11001 .072433 5 61002 .039716

6 130000 6.027-2
 7 11001 3.33715-15 7 81003 1.66858-15
 8 61002 3.1691-4 8 240003 1.6471-2 8 250005 1.7321-3 8 260001 6.036-2

8 280003 6.4834-3 8 140005 1.694-3
 9 10001 1.-15 9 60002 1.-15 9 80003 1.-15 9 -922351 1.-15 9 922381 1.-15
 CYLINDER 1 14.605 161.29 0. 123Z

CYLINDER 0 14.605 161.29 0. 123Z
 CYLINDER 2 14.757 162.56 -.3175 123Z
 CYLINDER 3 14.757 177.178 -.3175 123Z

CYLINDER 3 28.423 177.178 -10.478 123Z
 CYLINDER 2 28.575 177.33 -10.63 123Z
 CUBOID 7 28.575 -28.575 28.575 -28.575 177.33 -10.63 123Z

REFLECTOR 4 6R30. 301

***** END OF INPUT LISTING *****

T.T. 51EB250, 20X20X5, REFL., 3IN. U(4)02 RODS+POLY, 37GU5/L, H/U=3, NORMAL+WEBB

GENERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.01448E+00	4.90000E-02	1.00000E+00	0.	0.
2	9.58672E-01	9.01467E-02	1.00000E+00	0.	0.
3	9.87561E-01	1.31500E-01	9.87561E-01	0.	0.
4	8.96349E-01	1.72000E-01	9.41955E-01	4.56061E-02	0.
5	1.01574E+00	2.15167E-01	9.66885E-01	3.62604E-02	0.
6	9.78700E-01	2.57500E-01	9.69839E-01	2.58153E-02	0.
7	1.01873E+00	3.00167E-01	9.79656E-01	2.22544E-02	0.
8	9.31700E-01	3.43167E-01	9.71663E-01	1.98502E-02	0.
9	9.95397E-01	3.85000E-01	9.75054E-01	1.71163E-02	0.
10	9.53902E-01	4.27167E-01	9.72410E-01	1.50571E-02	0.
11	9.59827E-01	4.73167E-01	9.71012E-01	1.33525E-02	0.
12	1.02904E+00	5.18333E-01	9.76815E-01	1.32779E-02	0.
13	1.00855E+00	5.60667E-01	9.79700E-01	1.23520E-02	0.
14	9.46920E-01	6.03333E-01	9.76968E-01	1.16019E-02	0.
15	9.28305E-01	6.46000E-01	9.73225E-01	1.13097E-02	0.
16	9.58820E-01	6.89333E-01	9.72196E-01	1.05212E-02	0.
17	9.77334E-01	7.33333E-01	9.72538E-01	9.80065E-03	0.
18	9.72574E-01	7.77333E-01	9.72541E-01	9.16767E-03	0.
19	9.50244E-01	8.20167E-01	9.71229E-01	8.71083E-03	0.
20	9.58852E-01	8.62000E-01	9.70542E-01	8.26135E-03	0.
21	1.03219E+00	9.04333E-01	9.73786E-01	8.44375E-03	0.
22	9.46940E-01	9.49500E-01	9.72445E-01	8.12196E-03	0.
23	1.00540E+00	9.91167E-01	9.74014E-01	7.88328E-03	0.
24	1.01385E+00	1.03433E+00	9.75825E-01	7.73149E-03	0.
25	1.05108E+00	1.07650E+00	9.79097E-01	8.07989E-03	0.
26	9.85056E-01	1.11933E+00	9.79345E-01	7.73989E-03	0.
27	9.94060E-01	1.16300E+00	9.79934E-01	7.44713E-03	0.
28	1.02542E+00	1.20567E+00	9.81683E-01	7.36571E-03	0.
29	9.49025E-01	1.25067E+00	9.80476E-01	7.19012E-03	0.
30	9.90310E-01	1.29133E+00	9.80825E-01	6.93748E-03	0.
31	9.25182E-01	1.33417E+00	9.78906E-01	6.96353E-03	0.
32	1.03126E+00	1.37700E+00	9.80651E-01	6.95007E-03	0.
33	9.78026E-01	1.41917E+00	9.80567E-01	6.72267E-03	0.
34	9.04255E-01	1.46300E+00	9.78182E-01	6.93229E-03	0.
35	9.36258E-01	1.50583E+00	9.76933E-01	6.83408E-03	0.
36	8.99232E-01	1.54967E+00	9.74647E-01	7.01284E-03	0.
37	9.93779E-01	1.59383E+00	9.75194E-01	6.83143E-03	0.
38	1.06608E+00	1.63733E+00	9.72153E-01	6.92485E-03	0.
39	9.87167E-01	1.68200E+00	9.77434E-01	6.74051E-03	0.
40	9.84500E-01	1.72700E+00	9.77620E-01	6.56337E-03	0.
41	1.03908E+00	1.77233E+00	9.79196E-01	6.58426E-03	0.
42	9.30575E-01	1.81467E+00	9.77980E-01	6.53165E-03	0.
43	9.95881E-01	1.85833E+00	9.78417E-01	6.38529E-03	0.
44	9.56656E-01	1.90183E+00	9.72827E-01	6.25291E-03	0.
45	9.12937E-01	1.94283E+00	9.76388E-01	6.28988E-03	0.
46	1.04523E+00	1.98550E+00	9.77952E-01	6.34131E-03	0.
47	9.70237E-01	2.02717E+00	9.77282E-01	6.20112E-03	0.
48	1.02877E+00	2.07217E+00	9.78891E-01	6.16574E-03	0.
49	8.96292E-01	2.11317E+00	9.77133E-01	6.28345E-03	0.
50	9.35585E-01	2.15500E+00	9.76248E-01	6.21175E-03	0.
51	9.87442E-01	2.19500E+00	9.76496E-01	6.08794E-03	0.
52	9.95901E-01	2.23500E+00	9.76884E-01	5.97755E-03	0.
53	9.4680E-01	2.27500E+00	9.76253E-01	5.89310E-03	0.
54	1.01820E+00	2.31500E+00	9.77059E-01	5.83469E-03	0.
55	9.94312E-01	2.35500E+00	9.77385E-01	5.73279E-03	0.

49	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
50	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
51	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
52	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
53	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
54	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.
55	1.77777E+01	1.77777E+00	9.77777E-01	5.77777E-03	0.

KENO4LCM VERS.2.1 (10/30/77) 05/12/80

56	9.88434E-01	2.41500E+00	9.77589E-01	5.62935E-03	0.
57	9.71452E-01	2.45657E+00	9.77478E-01	5.52717E-03	0.
58	9.92515E-01	2.50267E+00	9.77746E-01	5.43421E-03	0.
59	1.00281E+00	2.54667E+00	9.76185E-01	5.35610E-03	0.
60	9.93619E-01	2.58250E+00	9.76452E-01	5.26267E-03	0.
61	9.51312E-01	2.63267E+00	9.77972E-01	5.19977E-03	0.
62	9.21262E-01	2.67483E+00	9.77047E-01	5.19926E-03	0.
63	9.34470E-01	2.71957E+00	9.76342E-01	5.16074E-03	0.
64	9.83354E-01	2.76000E+00	9.76542E-01	5.08051E-03	0.
65	1.00505E+00	2.80483E+00	9.76995E-01	5.01965E-03	0.
66	9.82234E-01	2.84667E+00	9.77077E-01	4.94128E-03	0.
67	1.00689E+00	2.88917E+00	9.77555E-01	4.88624E-03	0.
68	9.56650E-01	2.93133E+00	9.77219E-01	4.82203E-03	0.
69	9.92465E-01	2.97267E+00	9.77446E-01	4.75495E-03	0.
70	1.03521E+00	3.01767E+00	9.78295E-01	4.76090E-03	0.
71	9.94412E-01	3.05850E+00	9.78529E-01	4.69721E-03	0.
72	9.73097E-01	3.10033E+00	9.78452E-01	4.63027E-03	0.
73	1.02375E+00	3.14167E+00	9.79090E-01	4.60896E-03	0.
74	9.88048E-01	3.18633E+00	9.79214E-01	4.54620E-03	0.
75	1.02118E+00	3.22933E+00	9.79792E-01	4.52020E-03	0.
76	9.86853E-01	3.27200E+00	9.79884E-01	4.45972E-03	0.
77	9.53362E-01	3.31617E+00	9.79531E-01	4.41404E-03	0.
78	1.02326E+00	3.35833E+00	9.80106E-01	4.39341E-03	0.
79	1.00675E+00	3.40267E+00	9.80452E-01	4.34976E-03	0.
80	9.47967E-01	3.44367E+00	9.80036E-01	4.31379E-03	0.
81	9.60092E-01	3.48533E+00	9.79783E-01	4.26631E-03	0.
82	1.03974E+00	3.52933E+00	9.80533E-01	4.27879E-03	0.
83	9.63157E-01	3.57500E+00	9.80318E-01	4.23108E-03	0.
84	9.72357E-01	3.61700E+00	9.80556E-01	4.18525E-03	0.
85	1.04461E+00	3.66167E+00	9.81328E-01	4.20661E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THERE ARE KEXMAX , KEYMAX , KEZMAX UNITS IN AN ARRAY.

KENO4LCM VERS.2.1 (10/9/77) 05/1/78

20X6,REFL,.3IN.U(4)O2 RODS+POLY,Z7GU5/L,H/U=3,NORMAL=WEBB)

K_{eff} = 4.45401E-04 + OR - 1.28139E-05

GENERATION TIME = 2.63027E-04 + OR - 3.15765E-06

SAFETY POSITION	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
3	.98125	+ OR - .00426	.97697 TO .98551	.97274 TO .98977	.96848 TO .99412
4	.98230	+ OR - .00418	.97812 TO .98648	.97394 TO .99056	.96977 TO .99483
5	.98187	+ OR - .00421	.97766 TO .98608	.97345 TO .99029	.96925 TO .99449
6	.98191	+ OR - .00426	.97765 TO .98617	.97339 TO .99043	.96912 TO .99459
7	.98144	+ OR - .00429	.97715 TO .98573	.97286 TO .99001	.96857 TO .99430
8	.98208	+ OR - .00430	.97779 TO .98638	.97349 TO .99067	.96919 TO .99497
9	.98191	+ OR - .00435	.97756 TO .98626	.97321 TO .99060	.96886 TO .99495
10	.98228	+ OR - .00439	.97789 TO .98657	.97350 TO .99106	.96910 TO .99545
11	.98258	+ OR - .00444	.97814 TO .98702	.97370 TO .99146	.96926 TO .99570
12	.98195	+ OR - .00446	.97749 TO .98640	.97304 TO .99086	.96858 TO .99531
17	.98327	+ OR - .00466	.97861 TO .98723	.97395 TO .99258	.96929 TO .99724
22	.98415	+ OR - .00489	.97926 TO .98904	.97437 TO .99392	.96949 TO .99881
27	.98193	+ OR - .00513	.97680 TO .98706	.97166 TO .99219	.96653 TO .99733
32	.98171	+ OR - .00533	.97638 TO .98704	.97104 TO .99238	.96571 TO .99771
37	.98580	+ OR - .00527	.98053 TO .99107	.97526 TO .99634	.97000 TO 1.00161
42	.98444	+ OR - .00542	.97902 TO .98986	.97361 TO .99528	.96819 TO 1.00070
47	.98553	+ OR - .00553	.97999 TO .99106	.97446 TO .99660	.96892 TO 1.00213
52	.98806	+ OR - .00537	.98270 TO .99343	.97733 TO .99879	.97196 TO 1.00416
57	.98889	+ OR - .00601	.98288 TO .99490	.97688 TO 1.00091	.97087 TO 1.00691
62	.99250	+ OR - .00641	.98609 TO .99890	.97968 TO 1.00531	.97328 TO 1.01172
67	.99502	+ OR - .00741	.98761 TO 1.00243	.98020 TO 1.00985	.97279 TO 1.01726
72	.99692	+ OR - .00919	.98762 TO 1.00601	.97843 TO 1.01520	.96924 TO 1.02440
77	.99818	+ OR - .01322	.98496 TO 1.01140	.97174 TO 1.02462	.95852 TO 1.03784
82	1.00254	+ OR - .02355	.97899 TO 1.02609	.95544 TO 1.04955	.93188 TO 1.07320

FOR THE EVALUATION DESCRIBED IN SECTION 3.3.c

KEN04LCM VERS.2.1 (10/30/77) 05/12/80 15.17.23 PAGE 5

NO IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R
111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999
123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,14X14X4,REFL,.3IN.U(4)02 RODS+POLY,37GUS/L,H/U=3,ACCIDT=WEBB)

4.8 85 301 3 123 30 17 9 41 14 1 14 14 4

-17 0 0 2000 0 1 1 1 42 2*

1 10001 7.02437-3 1 60002 3.51214-3 1 80003 4.68497-3 1 -922351 9.48507-5

1 922391 2.24743-3

2 61002 .003921 2 260001 .093491

3 11001 8.1-4 3 81003 2.42-3 3 120005 4.1-4 3 130000 2.3-4 3 140005 5.2-4

3 190005 1.2-4 3 260001 2.-5 3 11001 1.-15 3 81003 1.-15

4 11001 .0035 4 61002 .0202 4 81003 .0355 4 140005 .0017 4 120005 .00186

4 260001 1.93-4 4 130000 5.56-4 4 190005 4.03-5 4 110000 1.63-5

5 11001 .072333 5 61002 .039716

6 130000 6.027-2

7 11001 2.0923-3 7 81003 1.0011-3

8 61002 3.1421-4 8 260003 1.6471-2 8 250005 1.7321-3 8 260001 6.036-2

8 280003 6.4334-3 8 140005 1.694-3

9 10001 1.-15 9 60002 1.-15 9 80003 1.-15 9 -922351 1.-15 9 922331 1.-15

CYLINDER 1 14.405 141.22 0. 123Z

CYLINDER 0 14.605 161.29 0. 123Z

CYLINDER 2 14.757 162.56 -.3175 123Z

CYLINDER 7 14.757 172.093 -.3175 123Z

CYLINDER 7 25.248 172.093 -5.598 123Z

CYLINDER 2 25.4 172.25 -5.55 123Z

CLEOIC 7 25.4 -25.4 25.4 -25.4 172.25 -5.55 123Z

REFLECTOR 4 GR50. 301

LE(BB250,14X14X4,REFL.,3IN.U(4)02 RODS+POLY,37GU5/L,H/U=3,ACCIDT*WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.07512E+00	4.57333E-02	1.00000E+00	0.	0.
2	1.03758E+00	8.51667E-02	1.00000E+00	0.	0.
3	1.07875E+00	1.25533E-01	1.09676E+00	0.	0.
4	9.76233E-01	1.63667E-01	1.03660E+00	6.03647E-02	0.
5	9.99992E-01	2.04333E-01	1.02570E+00	3.49259E-02	0.
6	9.54269E-01	2.45167E-01	1.00636E+00	3.14502E-02	0.
7	1.03161E+00	2.85000E-01	1.01181E+00	2.48588E-02	0.
8	9.44460E-01	3.24167E-01	1.00059E+00	2.31916E-02	0.
9	1.01579E+00	3.65500E-01	1.00279E+00	1.97259E-02	0.
10	8.91441E-01	4.05667E-01	9.88868E-01	2.20351E-02	0.
11	1.01512E+00	4.4557E-01	9.91819E-01	1.96559E-02	0.
12	9.91057E-01	4.87000E-01	9.91743E-01	1.75809E-02	0.
13	1.02446E+00	5.27000E-01	9.94717E-01	1.61784E-02	0.
14	1.01015E+00	5.68167E-01	9.96003E-01	1.48246E-02	0.
15	9.92456E-01	6.07333E-01	9.95730E-01	1.36394E-02	0.
16	9.97602E-01	6.50500E-01	9.95578E-01	1.26285E-02	0.
17	9.35821E-01	6.92333E-01	9.91592E-01	1.24116E-02	0.
18	1.07847E+00	7.34833E-01	9.97079E-01	1.28169E-02	0.
19	9.92699E-01	7.73333E-01	9.96774E-01	1.20420E-02	0.
20	1.00865E+00	8.14667E-01	9.97431E-01	1.13725E-02	0.
21	9.70196E-01	8.54833E-01	9.96000E-01	1.08524E-02	0.
22	9.95936E-01	8.94500E-01	9.95937E-01	1.02955E-02	0.
23	9.67862E-01	9.35333E-01	9.93626E-01	1.00575E-02	0.
24	9.26466E-01	9.76167E-01	9.90641E-01	1.00643E-02	0.
25	9.42205E-01	1.01600E+00	9.88535E-01	9.84464E-03	0.
26	2.65592E-01	1.05633E+00	9.87578E-01	9.67392E-03	0.
27	1.00784E+00	1.09700E+00	9.83389E-01	9.12313E-03	0.
28	9.75193E-01	1.13900E+00	9.87881E-01	8.77989E-03	0.
29	2.83322E-01	1.18017E+00	9.87713E-01	8.45013E-03	0.
30	9.64937E-01	1.22033E+00	9.86901E-01	8.18310E-03	0.
31	9.60393E-01	1.26217E+00	9.85987E-01	7.94862E-03	0.
32	2.22422E-01	1.30233E+00	9.85436E-01	7.62222E-03	0.
33	9.15528E-01	1.34067E+00	9.84149E-01	7.78363E-03	0.
34	9.02964E-01	1.37933E+00	9.81612E-01	7.95203E-03	0.
35	2.53167E-01	1.41950E+00	9.80749E-01	7.75542E-03	0.
36	9.49046E-01	1.45717E+00	9.79817E-01	7.58142E-03	0.
37	1.03850E+00	1.49900E+00	9.81493E-01	7.55012E-03	0.
38	2.59067E-01	1.53000E+00	9.80870E-01	7.36379E-03	0.
39	9.70729E-01	1.57933E+00	9.81137E-01	7.16696E-03	0.
40	9.83948E-01	1.61933E+00	9.81474E-01	6.98395E-03	0.
41	2.20055E-01	1.66017E+00	9.81822E-01	6.81163E-03	0.
42	1.01878E+00	1.69850E+00	9.82751E-01	6.70355E-03	0.
43	1.00801E+00	1.73933E+00	9.83379E-01	6.56813E-03	0.
44	2.80532E-01	1.77700E+00	9.83311E-01	6.41019E-03	0.
45	9.95757E-01	1.81533E+00	9.83601E-01	6.26604E-03	0.
46	1.03906E+00	1.85733E+00	9.84664E-01	6.21368E-03	0.
47	1.02065E+00	1.89000E+00	9.85629E-01	6.15011E-03	0.
48	9.91109E-01	1.93767E+00	9.85748E-01	6.01611E-03	0.
49	9.40839E-01	1.98000E+00	9.84794E-01	5.96359E-03	0.
50	1.05937E+00	2.02333E+00	9.86246E-01	6.02031E-03	0.
51	9.72791E-01	2.06481E+00	9.85992E-01	5.90249E-03	0.
52	9.63300E-01	2.10933E+00	9.85532E-01	5.80101E-03	0.
53	1.06472E+00	2.14633E+00	9.85216E-01	5.67331E-03	0.
54	9.70797E-01	2.18590E+00	9.86029E-01	5.58925E-03	0.
55	9.39277E-01	2.22850E+00	9.85147E-01	5.55328E-03	0.

56	2.82732E-01	2.27017E+00	9.85219E-01	5.44995E-03	0.
57	1.03527E+00	2.31133E+00	9.86102E-01	5.62228E-03	0.

56	9.89039E-01	2.27017E+00	9.85219E-01	5.44995E-03	0.
57	1.03572E+00	2.31133E+00	9.84102E-01	5.42220E-03	0.
58	9.45364E-01	2.35250E+00	9.85374E-01	5.37404E-03	0.
59	9.28122E-01	2.39050E+00	9.84370E-01	5.37362E-03	0.
60	1.03567E+00	2.47050E+00	9.85254E-01	5.35371E-03	0.
61	9.26396E-01	2.47067E+00	9.84257E-01	5.35592E-03	0.
62	9.93537E-01	2.51183E+00	9.84411E-01	5.26817E-03	0.
63	1.01522E+00	2.5517E+00	9.84977E-01	5.21128E-03	0.
64	9.81331E-01	2.59383E+00	9.84919E-01	5.12746E-03	0.
65	9.70194E-01	2.63533E+00	9.84685E-01	5.05033E-03	0.
66	9.92411E-01	2.67533E+00	9.84909E-01	4.97282E-03	0.
67	9.28350E-01	2.71517E+00	9.83948E-01	4.97089E-03	0.
68	9.72229E-01	2.75533E+00	9.83770E-01	4.89822E-03	0.
69	1.05664E+00	2.79400E+00	9.85007E-01	4.92057E-03	0.
70	9.42052E-01	2.83300E+00	9.84376E-01	4.94727E-03	0.
71	1.00119E+00	2.87767E+00	9.84619E-01	4.88113E-03	0.
72	1.01083E+00	2.91583E+00	9.84924E-01	4.82550E-03	0.
73	1.01349E+00	2.95700E+00	9.85395E-01	4.77395E-03	0.
74	9.14195E-01	2.99633E+00	9.84407E-01	4.80993E-03	0.
75	1.00320E+00	3.03850E+00	9.84671E-01	4.75034E-03	0.
76	9.51680E-01	3.07750E+00	9.84225E-01	4.70746E-03	0.
77	9.42609E-01	3.11900E+00	9.83670E-01	4.67730E-03	0.
78	9.85378E-01	3.16317E+00	9.83692E-01	4.61543E-03	0.
79	9.66439E-01	3.20417E+00	9.83475E-01	4.56061E-03	0.
80	1.09602E+00	3.24717E+00	9.84918E-01	4.72734E-03	0.
81	9.66274E-01	3.28767E+00	9.84671E-01	4.67264E-03	0.
82	9.84280E-01	3.32950E+00	9.84736E-01	4.61408E-03	0.
83	1.00896E+00	3.37217E+00	9.85035E-01	4.56657E-03	0.
84	1.03170E+00	3.41200E+00	9.85004E-01	4.56630E-03	0.
85	9.53269E-01	3.45150E+00	9.85215E-01	4.50805E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THESE ARE NEUMAX, NEBYMAX, NEZMAX UNITS IN AN ARRAY.

KENO4LCM VERS.2.1 (10/30/77) 05/12/78

... 3IN. ... RODS+POLY, 37GUS/L, H/U=3, ACCIDENT WEIRD

GENERATION TIME = 2.75713E-4

	AVERAGE EFFECTIVE		DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL		
1	.98335	+ OR -	.00435	.97950 TO .98920	.97515 TO .99255	.9779	.9779
2	.98325	+ OR -	.00440	.97954 TO .98935	.97514 TO .99275	.97974	.97974
3	.98375	+ OR -	.00445	.97929 TO .98820	.97484 TO .99251	.97938	.97938
4	.98412	+ OR -	.00449	.97962 TO .98	.97513 TO .99251	.97963	.97963
5	.98351	+ OR -	.00451	.97900 TO .98802	.97449 TO .99273	.97973	.97973
6	.98402	+ OR -	.00454	.97948 TO .98856	.97494 TO .99310	.97949	.97949
7	.98350	+ OR -	.00453	.97902 TO .98818	.97443 TO .99276	.97985	.97985
8	.98482	+ OR -	.00447	.98035 TO .98930	.97588 TO .99377	.97941	.97941
9	.98441	+ OR -	.00451	.97990 TO .98893	.97538 TO .99344	.97987	.97987
10	.98432	+ OR -	.00458	.97975 TO .98870	.97517 TO .99347	.97960	.97960
11	.98381	+ OR -	.00481	.97900 TO .98861	.97419 TO .99342	.97939	.97939
12	.98179	+ OR -	.00493	.97686 TO .98673	.97193 TO .99166	.97900	.97900
13	.98325	+ OR -	.00516	.97869 TO .98901	.97353 TO .99417	.97937	.97937
14	.98452	+ OR -	.00561	.97891 TO .99013	.97330 TO .99574	.97969	.97969
15	.98793	+ OR -	.00556	.98237 TO .99348	.97682 TO .99904	.97926	.97926
16	.98751	+ OR -	.00612	.98138 TO .99363	.97526 TO .99976	.97913	.97913
17	.98672	+ OR -	.00672	.97801 TO .99144	.97529 TO .99816	.97958	.97958
18	.98472	+ OR -	.00727	.97745 TO .99200	.97018 TO .99927	.97929	.97929
19	.98347	+ OR -	.00820	.97527 TO .99167	.96707 TO .99988	.97986	.97986
20	.98731	+ OR -	.00888	.97843 TO .99619	.96954 TO 1.00508	.97966	.97966
21	.98979	+ OR -	.01070	.97909 TO 1.0149	.96839 TO 1.01119	.97968	.97968
22	.98540	+ OR -	.01297	.97353 TO .99927	.96767 TO 1.01213	.97980	.97980
23	.97962	+ OR -	.01632	.98330 TO 1.01608	.96691 TO 1.03247	.97932	.97932
24	.97779	+ OR -	.02330	.97468 TO 1.02128	.95138 TO 1.04458	.97903	.97903

KENO4LCM VERS. 2.1 (10/6/72) 5/12/83

... 3IN. U(4)02 RODS+POLY, 37GUS/L, H/U=3, ACCIDENT WEIRD

	AVERAGE	ABSORPTIONS	FISSIONS	WITH 3 GENERATIONS SKIPPED
1		2.73320E-05	2.37425E-05	
2		2.75036E-05	4.35260E-05	
3		2.75194E-05	2.68745E-05	
4		1.12434E-04	1.66052E-04	

FOR THE EVALUATION DESCRIBED IN SECTION 3.3.d

KEN04LCH VERS.2.1 (10/30/79) 06/02/80 13.25.53 PAGE 3

THIS IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R

11111111112222222222333333333344444444445555555555666666666677777777778
1234567890123456789012345678901234567890123456789012345678901234567890

TITLE (R0250,14X14X4,REFL,.3IN.U(4)02 RODS+POLY,59.4GU5/L,H/U=3,ACCIDT*WEBB)

4.8 85 301 3 123 80 17 9 41 14 1 14 14 4

-17 0 0 2000 0 1 1 1 42 22

1 10001 7.02437-3 1 60002 3.51214-3 1 80003 4.68497-3 1 -922351 9.48507-5

1 8922381 2.24763-3

2 61002 .003921 2 280001 .003491

3 11001 8.1-4 3 81003 2.42-3 3 120005 4.1-4 3 130000 2.3-4 3 140005 5.2-4

3 190005 1.3-4 3 260001 2.-5 3 11001 1.-15 3 81003 1.-15

4 11001 .0095 4 61002 .0202 4 61003 .0355 4 140005 .0017 4 120005 .00186

4 260001 1.93-4 4 130000 5.56-4 4 190005 4.03-5 4 110000 1.63-5

5 11001 .079433 5 61002 .039716

6 130000 6.027-2

7 11001 2.0023-3 7 81003 1.0011-3

8 61002 3.1621-4 8 240003 1.6671-2 8 250005 1.7321-3 8 260001 6.036-2

8 280003 6.4834-3 8 140005 1.694-3

9 10001 1.-15 9 60002 1.-15 9 80003 1.-15 9 -922351 1.-15 9 8922381 1.-15

CURVID 1 9.2075 -9.2075 11.337 -11.337 161.29 0. 123Z

CYLINDER 0 14.605 161.29 0. 123Z

CYLINDER 2 14.757 162.56 -.3175 123Z

CYLINDER 7 14.757 172.093 -.3175 123Z

CYLINDER 7 25.248 172.093 -5.393 123Z

CYLINDER 2 25.4 172.25 -5.35 123Z

CURVID 7 25.6 -25.6 25.6 -25.6 172.25 -5.55 123Z

REFLECTOR 4 6R30. 301

***** END OF INPUT LISTING *****

BB2U, 14x14x4, REFL, .3IN.U(4)02 RODS+POLY, 59.4GUS/L, H/U=3, ACCIDT=WEBB

EXPERIMENT	K-EFFECTIVE	ELAPSED TIME (MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
WARNING - ONLY 291 INDEPENDENT FISSION POINTS WERE					
1	8.91039E-01	4.76667E-02	1.00000E+00	0.	0.
2	9.19561E-01	9.61667E-02	1.00000E+00	0.	0.
3	8.98901E-01	1.43333E-01	8.98901E-01	0.	0.
4	8.46823E-01	1.88667E-01	8.72227E-01	2.60039E-02	0.
5	8.09912E-01	2.35667E-01	8.51902E-01	2.58107E-02	0.
6	8.02844E-01	2.81333E-01	8.39637E-01	2.19809E-02	0.
7	8.70127E-01	3.27167E-01	8.45735E-01	1.80912E-02	0.
8	8.73308E-01	3.76667E-01	8.50331E-01	1.54698E-02	0.
9	8.86097E-01	4.22500E-01	8.55440E-01	1.40372E-02	0.
10	8.45386E-01	4.66833E-01	8.53233E-01	1.22426E-02	0.
11	8.49920E-01	5.14667E-01	8.53488E-01	1.08124E-02	0.
12	7.55744E-01	5.60833E-01	8.43713E-01	1.37500E-02	0.
13	8.28734E-01	6.05833E-01	8.42351E-01	1.25117E-02	0.
14	8.13008E-01	6.50167E-01	8.39906E-01	1.16804E-02	0.
15	8.24455E-01	6.96333E-01	8.38718E-01	1.08099E-02	0.
16	7.95871E-01	7.44033E-01	8.35657E-01	1.04655E-02	0.
17	8.11319E-01	7.90167E-01	8.34035E-01	9.87707E-03	0.
18	9.16741E-01	8.36833E-01	8.39204E-01	1.05869E-02	0.
WARNING - ONLY 278 INDEPENDENT FISSION POINTS WERE					
19	7.41874E-01	8.82333E-01	8.33478E-01	1.14750E-02	0.
20	9.15972E-01	9.28933E-01	8.30061E-01	1.17494E-02	0.
21	8.62480E-01	9.72667E-01	8.29347E-01	1.11879E-02	0.
22	8.24846E-01	1.01683E+00	8.38612E-01	1.06392E-02	0.
23	7.42070E-01	1.06117E+00	8.34014E-01	1.11151E-02	0.
24	8.27291E-01	1.10203E+00	8.33709E-01	1.06023E-02	0.
25	8.22717E-01	1.15567E+00	8.33231E-01	1.01421E-02	0.
26	8.48141E-01	1.20267E+00	8.33852E-01	9.73014E-03	0.
27	8.63044E-01	1.24833E+00	8.35020E-01	9.40561E-03	0.
28	8.65764E-01	1.29383E+00	8.36202E-01	9.11366E-03	0.
29	8.44605E-01	1.34050E+00	8.36514E-01	8.77514E-03	0.
30	8.72233E-01	1.38833E+00	8.37268E-01	8.58002E-03	0.
31	8.37890E-01	1.43800E+00	8.37965E-01	8.27887E-03	0.
32	8.44549E-01	1.48217E+00	8.38184E-01	8.00116E-03	0.
33	8.52619E-01	1.52833E+00	8.38874E-01	7.76958E-03	0.
34	8.53155E-01	1.57433E+00	8.39322E-01	7.53609E-03	0.
35	8.31584E-01	1.61863E+00	8.39088E-01	7.30792E-03	0.
36	8.15124E-01	1.66467E+00	8.38383E-01	7.12466E-03	0.
37	7.95530E-01	1.70933E+00	8.37158E-01	7.02561E-03	0.
38	8.30896E-01	1.75683E+00	8.36984E-01	6.82988E-03	0.
39	7.56051E-01	1.80100E+00	8.34727E-01	6.92341E-03	0.
40	8.34073E-01	1.85000E+00	8.34778E-01	6.80711E-03	0.
41	8.62707E-01	1.89550E+00	8.35494E-01	6.66883E-03	0.
42	8.56002E-01	1.94083E+00	8.35257E-01	6.51642E-03	0.
43	8.76992E-01	1.98717E+00	8.36958E-01	6.43382E-03	0.
44	7.76212E-01	2.03217E+00	8.35511E-01	6.44319E-03	0.
45	8.14233E-01	2.07833E+00	8.35017E-01	6.31100E-03	0.
46	8.44705E-01	2.12867E+00	8.35237E-01	6.16983E-03	0.
47	8.43649E-01	2.17567E+00	8.35424E-01	6.03406E-03	0.
48	8.34504E-01	2.22317E+00	8.35404E-01	5.90166E-03	0.
49	8.69173E-01	2.27200E+00	8.36122E-01	5.81906E-03	0.
50	8.01461E-01	2.31750E+00	8.35400E-01	5.74213E-03	0.
51	8.35630E-01	2.36350E+00	8.35401E-01	5.62372E-03	0.
52	8.51737E-01	2.41083E+00	8.35727E-01	5.51978E-03	0.
53	8.91977E-01	2.46050E+00	8.36830E-01	5.52174E-03	0.

54	7.64223E-01	2.50683E+00	8.35434E-01	5.59165E-03	0.
55	8.51143E-01	2.55667E+00	8.36423E-01	5.58636E-03	0.
56	8.70530E-01	2.59550E+00	8.36475E-01	5.43196E-03	0.
57	8.53544E-01	2.63950E+00	8.36785E-01	5.39031E-03	0.
58	8.46117E-01	2.68667E+00	8.36944E-01	5.29410E-03	0.
59	8.21117E-01	2.73233E+00	8.37244E-01	5.18997E-03	0.

54	7.64223E-01	2.50683E+00	8.35434E-01	5.59165E-03	0.
55	8.91543E-01	2.55047E+00	8.36493E-01	5.58636E-03	0.
56	8.35538E-01	2.59550E+00	8.36475E-01	5.48198E-03	0.
57	8.53549E-01	2.63950E+00	8.36785E-01	5.39031E-03	0.
58	8.42317E-01	2.68667E+00	8.36884E-01	5.29410E-03	0.
59	8.21171E-01	2.73435E+00	8.36606E-01	5.20774E-03	0.
60	8.37104E-01	2.78050E+00	8.36616E-01	5.11717E-03	0.
61	7.94037E-01	2.82700E+00	8.35895E-01	5.08121E-03	0.
62	8.17743E-01	2.87317E+00	8.35592E-01	5.00496E-03	0.
63	8.50688E-01	2.92233E+00	8.35839E-01	4.92844E-03	0.
64	8.08114E-01	2.96750E+00	8.35322E-01	4.86888E-03	0.
65	8.14669E-01	3.01353E+00	8.35063E-01	4.80225E-03	0.
66	8.40760E-01	3.05867E+00	8.35152E-01	4.72746E-03	0.
67	8.29930E-01	3.10267E+00	8.35072E-01	4.65485E-03	0.
68	8.56811E-01	3.14750E+00	8.35401E-01	4.59560E-03	0.
69	8.59031E-01	3.19050E+00	8.35754E-01	4.54021E-03	0.
70	7.57390E-01	3.23467E+00	8.34602E-01	4.61901E-03	0.
71	8.50204E-01	3.28417E+00	8.34828E-01	4.55719E-03	0.
72	7.53470E-01	3.33117E+00	8.33666E-01	4.63255E-03	0.
73	7.68341E-01	3.37650E+00	8.32746E-01	4.66536E-03	0.
74	9.01284E-01	3.42200E+00	8.33697E-01	4.69757E-03	0.
75	8.64290E-01	3.46800E+00	8.34116E-01	4.65169E-03	0.
76	8.30110E-01	3.51233E+00	8.34062E-01	4.58872E-03	0.
77	7.53005E-01	3.55917E+00	8.32982E-01	4.65434E-03	0.
78	8.20125E-01	3.60517E+00	8.32812E-01	4.59580E-03	0.
79	8.48779E-01	3.64983E+00	8.33020E-01	4.54047E-03	0.
80	8.37452E-01	3.69600E+00	8.33077E-01	4.48225E-03	0.
81	8.02066E-01	3.74217E+00	8.32684E-01	4.66252E-03	0.
82	8.00057E-01	3.78817E+00	8.32276E-01	4.40556E-03	0.
83	8.77305E-01	3.83300E+00	8.32832E-01	4.38620E-03	0.
84	8.31945E-01	3.87900E+00	8.32822E-01	4.33239E-03	0.
85	8.24453E-01	3.92467E+00	8.32721E-01	4.28106E-03	0.

KENO4LCM VERS.2.1 (10/30/79) 06/02/80 13.25.

WARNING - ONLY 286 INDEPENDENT FISSION POINTS WERE GEN

LIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 BE NBZMAX , NBZMAX , NBZMAX UNITS IN AN ARRAY.

REFL., 3IN.U(4)02 RODS+POLY, 59.4GUS/L, H/U=3, ACCIDT=WEBB)

0-04 + OR = 1.68891E-05

GENERATION TIME = 3.75571E-04 + OR = 4.43122E-04

	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL		95 PER CENT CONFIDENCE INTERVAL		99 PER CENT CONFIDENCE INTERVAL	
1	.83191	+ OR - .00426	.82766	TO .83617	.82340	TO .84043	.81915	TO .84468
4	.83173	+ OR - .00430	.82742	TO .83603	.82312	TO .84024	.81881	TO .84464
5	.83200	+ OR - .00435	.82765	TO .83635	.82330	TO .84070	.81895	TO .84505
6	.83237	+ OR - .00439	.82798	TO .83676	.82359	TO .84115	.81920	TO .84554
7	.83189	+ OR - .00442	.82747	TO .83631	.82305	TO .84072	.81863	TO .84514
8	.83135	+ OR - .00444	.82590	TO .83579	.82246	TO .84024	.81802	TO .84468
9	.83063	+ OR - .00444	.82619	TO .83507	.82174	TO .83951	.81730	TO .84396
10	.83046	+ OR - .00450	.82596	TO .83496	.82146	TO .83946	.81696	TO .84326
11	.83020	+ OR - .00455	.82564	TO .83475	.82109	TO .83930	.81654	TO .84385
12	.83121	+ OR - .00450	.82672	TO .83571	.82222	TO .84021	.81772	TO .84471
17	.83263	+ OR - .00473	.82765	TO .83721	.82287	TO .84200	.81809	TO .84678
22	.83085	+ OR - .00455	.82630	TO .83540	.82175	TO .83995	.81721	TO .84450
27	.83173	+ OR - .00465	.82708	TO .83638	.82243	TO .84103	.81778	TO .84568
32	.82963	+ OR - .00495	.82467	TO .83458	.81972	TO .83954	.81477	TO .84445
37	.82948	+ OR - .00536	.82413	TO .83484	.81877	TO .84020	.81341	TO .84556
42	.82971	+ OR - .00565	.82406	TO .83536	.81841	TO .84101	.81276	TO .84667
47	.82952	+ OR - .00608	.82344	TO .83560	.81737	TO .84167	.81129	TO .84775
52	.82817	+ OR - .00681	.82136	TO .83497	.81455	TO .84178	.80774	TO .84859
57	.82474	+ OR - .00688	.81786	TO .83161	.81098	TO .83849	.80411	TO .84537
62	.82523	+ OR - .00823	.81700	TO .83346	.8087	TO .84169	.80054	TO .84322
67	.82423	+ OR - .01038	.81385	TO .83461	.80348	TO .84498	.79310	TO .85536
72	.82763	+ OR - .01143	.81621	TO .83906	.80478	TO .85049	.79335	TO .86191
77	.83028	+ OR - .00822	.82136	TO .83919	.81244	TO .84811	.80352	TO .85703
82	.84457	+ OR - .01651	.82906	TO .86108	.81155	TO .87759	.79503	TO .89410

REFL., 3IN.U(4)02 RODS+POLY, 59.4GUS/L, H/U=3, ACCIDT=WEBB)

REASON LEAKAGE ABSORPTIONS FISSIONS WITH 3 GENERATIONS SKIPPED
 0. 0.
 8.12734E-06 0.

FOR THE EVALUATION DESCRIBED IN SECTION 3.4.b.

KEN04LCH VERS.2.1 (10/30/79) 05/21/80 08.5...

A CARD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

1111111111222222222233333333334444444444555555555566666666667777777777
 1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,20X19X6,REFL,.3IN.U(4)02 RODS+H20,118GUS/L,WEBB)
 4.8 75 301 3 16 6 14 8 16 10 1 20 19 6

12 2 0 2000 0 4 1 1 42 3 4
 SRIC:2 5012
 1 - 1 1.
 1 2 1.

2	100	1.
3	1101	.00081
3	8100	.00242
3	12100	.00041
3	13100	.00023
3	14100	.00052
3	19100	.00012
3	26100	.00009

3 501 1.-15

4	300	1.
5	401	1.

6 13100 .06027

7 501 1.-15

8 200 1.

***** MATERIAL		B	ZONE	1			0											
0	+52676-	7	0	+14059-	6	0	+23316-	6	5R+	0	+0	0	+44254-	7	1			
0	+09112-	6	0	+52882-	6	0	+29719-	6	0	+91862-	7	4R+	0	+0	0	+15076-	7	2
0	+17949-	7	0	+86094-	6	0	+59176-	6	0	+56887-	7	0	+35661-	7	3R+	0	+0	3
0	+14761-	7	0	+94496-	8	0	+97691-	6	0	+83047-	6	0	+20364-	6	0	+74145-	7	4
0	+61282-	7	2R+	0	+0	0	+16868-	7	0	+10885-	7	0	+11927-	5	0	+11132-	5	5
0	+12543-	6	0	+42703-	7	0	+49441-	7	0	+41131-	7	0	+0	0	0	+41986-	7	6
0	+18617-	7	0	+13914-	5	0	+13074-	5	0	+57617-	7	0	+62482-	8	0	+77556-	8	7
0	+27238-	8	0	+54383-	8	0	+66402-	7	0	+30935-	7	0	+15699-	5	0	+14612-	5	8
0	+42035-	7	4R+	0	+0	0	+64141-	7	0	+58198-	7	0	+15107-	5	0	+14521-	5	9
0	+42290-	7	4R+	0	+0	0	+13112-	6	0	+13705-	6	0	+14786-	5	0	+13039-	5	10
0	+44514-	7	4R+	0	+0	0	+35951-	6	0	+26800-	6	0	+15447-	5	0	+11257-	5	11
0	+43556-	7	4R+	0	+0	0	+25265-	6	0	+22693-	6	0	+14483-	5	0	+11306-	5	12
0	+59519-	7	4R+	0	+0	0	+35266-	6	0	+18660-	6	0	+15389-	5	0	+11267-	5	13
0	+65525-	7	4R+	0	+0	0	+14293-	6	0	+21549-	6	0	+13487-	5	0	+11402-	5	14
0	+59574-	7	4R+	0	+0	0	+27544-	6	0	+50775-	6	0	+14688-	5	0	+11161-	5	15
0	+65577-	7	4R+	0	+0	0	+70686-	6	0	+12935-	5	0	+18571-	5	0	+11001-	5	16
0	+77188-	7	4R+	0	+0	0	+17137-	5	0	+32321-	5	0	+27465-	5	0	+10328-	5	17
0	+50151-	7	4R+	0	+0	0												18
	.204		.344		.168		.18		.09		.014		0.		0.			
	0.0		0.		0.		0.		0.		0.		0.		0.			

***** MATERIAL		B	ZONE	2			1											
0	+22526-	8	0	+19508-	6	0	+21288-	6	7R+	0	+0	0	+12353-	5	1			
0	+26613-	6	0	+43078-	6	4R+	0	+0	0	+22549-	5	0	+61333-	6	0	+37427-	6	2
0	+10444-	6	5R+	0	+0	0	+26914-	5	0	+21342-	6	0	+10925-	5	0	+23103-	6	3
0	+11425-	6	4R+	0	+0	0	+38613-	5	0	+12167-	5	0	+11351-	5	0	+47907-	6	4
0	+17881-	5	0	+52264-	7	5R+	0	+0	0	+61507-	5	0	+27302-	5	0	+16274-	5	5
0	+34724-	5	0	+13298-	5	0	+54724-	7	0	+20837-	7	2R+	0	+0	0	+74303-	5	6
0	+13881-	5	0	+12832-	5	0	+26133-	6	0	+37342-	7	0	+26145-	7	0	+11321-	7	7
0	+27777-	7	0	+0	0	0	+77777-	5	0	+72620-	5	0	+34773-	5	0	+48218-	5	8

121738- 2 7R+ 0+ 0 0 +78160- 5 9
 122542- 5 0 +13557- 5 0 +22654- 8 10
 121342- 6 0 +13557- 5 0 +22654- 8 10
 121162- 5 0 +13557- 5 0 +22654- 8 10
 121507- 5 0 +22654- 8 0 +22654- 8 10
 120857- 7 2R+ 0+ 0 0 +78160- 5 9
 122142- 7 0 +11221- 7 11
 122142- 7 0 +11221- 7 11
 122142- 7 0 +11221- 7 11

THIS IS A CARD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER
 111111111122222222223333333333444444444455555555556666666666777777777788
 1234567890123456789012345678901234567890123456789012345678901234567890

0	+45771-	7 0	+99678-	8 0	+49716-	8 0	+18587-	8 0	+	0+ 0 0	+78160-	5	9
0	+32872-	5 0	+37164-	5 0	+62549-	6 0	+86285-	7 0	+82388-	8 0	+22654-	8	10
0	+37450-	8 0	+	0+ 0 0	+78740-	5 0	+23304-	5 0	+31850-	5 0	+56569-	6	11
0	+96907-	7 0	+13843-	7 0	+18309-	8 0	+65292-	8 0	+	0+ 0 0	+78444-	5	12
0	+20931-	5 0	+37202-	5 0	+82219-	6 0	+16693-	6 0	+28284-	7 0	+57677-	8	13
0	+11699-	7 0	+	0+ 0 0	+78709-	5 0	+22303-	5 0	+40579-	5 0	+12728-	5	14
0	+31599-	6 0	+56569-	7 0	+13910-	7 0	+20910-	7 0	+	0+ 0 0	+78157-	5	15
0	+19670-	5 0	+37885-	5 0	+11277-	5 0	+36514-	6 0	+89219-	7 0	+24112-	7	16
0	+32674-	7 0	+	0+ 0 0	+92513-	5 0	+29411-	5 0	+35389-	5 0	+11062-	5	17
0	+33532-	6 0	+10861-	6 0	+44610-	7 0	+61621-	7 0	+	0+ 0 0	+12713-	4	18
0	+10203-	4 0	+47372-	5 0	+17118-	5 0	+55311-	6 0	+16790-	6 0	+73028-	7	19
0	+14324-	6 0	+	0+ 0 0	+23119-	4 0	+22975-	4 0	+24485-	5 0	+15403-	5	20
0	+57712-	6 0	+18110-	6 0	+55965-	7							21
2R+	0+ 0 0	+95080-	6 0	+54357-	8 7R+	0+ 0 0	+12363-	5 0	+20378-	7			1
0	+75828-	6 6R+	0+ 0 0	+22549-	5 0	+18983-	6 0	+77300-	6 0	+17258-	6		2
5R+	0+ 0 0	+26814-	5 0	+37923-	6 0	+18264-	5 0	+57873-	6 0	+12910-	6		3
4R+	0+ 0 0	+38613-	5 0	+72247-	5 0	+23841-	5 0	+67253-	6 0	+21329-	6		4
0	+47562-	7 3R+	0+ 0 0	+61507-	5 0	+39590-	5 0	+25005-	5 0	+31671-	6		5
0	+89490-	7 0	+28529-	7 0	+67946-	8 2R+	0+ 0 0	+74303-	5 0	+47531-	5		6
0	+46677-	5 0	+17439-	6 0	+21748-	7 0	+67795-	8 0	+27171-	5 2R+	0+ 0		7
0	+77992-	5 0	+48923-	5 0	+57727-	5 0	+34330-	6 0	+12358-	7 0	+13593-	8	8
3R+	0+ 0 0	+78160-	5 0	+49378-	5 0	+61818-	5 0	+45208-	6 0	+26301-	7		9
0	+13731-	8 3R+	0+ 0 0	+78740-	5 0	+30616-	5 0	+55734-	5 0	+43123-	6		10
0	+31993-	7 0	+13843-	8 3R+	0+ 0 0	+78444-	5 0	+25380-	5 0	+69714-	5		11
0	+88802-	6 0	+70944-	7 0	+55640-	8 3R+	0+ 0 0	+78709-	5 0	+26884-	5		12
0	+26183-	5 0	+13861-	5 0	+17844-	6 0	+13911-	7 0	+13910-	8 2R+	0+ 0		13
0	+78157-	5 0	+22220-	5 0	+71259-	5 0	+12074-	5 0	+22189-	6 0	+27881-	7	14
0	+27821-	8 2R+	0+ 0 0	+92513-	5 0	+56012-	5 0	+68892-	5 0	+12578-	5		15
0	+21267-	6 0	+32323-	7 0	+85663-	8 2R+	0+ 0 0	+12713-	6 0	+14220-	6		16
0	+89619-	5 0	+20548-	5 0	+37623-	6 0	+62961-	7 0	+15448-	7 2R+	0+ 0		17
0	+23119-	4 0	+17776-	4 0	+28441-	5 0	+84017-	5 0	+22304-	6 0	+39306-	7	18
0	+52256-	3											19

CYLINDER 1 12.224 31.273 .1575 162
 CYLINDER 5 12.237 31.285 .1448 162
 CYLINDER 6 12.281 31.630 0. 162
 CYLINDER 5 12.381 31.730 0. 162
 CYLINDER 0 14.605 160.496 0. 162
 CYLINDER 2 14.751 161.766 -.2525 162
 CYLINDER 7 14.757 176.537 -.2525 162
 CYLINDER 7 18.575 176.537 -13.6594 162
 CYLINDER 2 28.122 176.689 -13.8113 162
 12.224 31.273 12.237 31.285 12.281 31.630 12.381 31.730 14.605 160.496 14.751 161.766 14.757 176.537 18.575 176.537 28.122 176.689 -13.8113 162

TIME (MIN) AVG. V-EE DEVIATION

12	1.15087E+00	1.53333E-01	1.00000E+00	0.
13	9.76577E-01	8.58333E-02	1.00000E+00	0.
14	1.00580E+00	1.15833E-01	9.76877E-01	0.
15	9.93823E-01	1.46833E-01	9.51350E-01	1.44795E-02
16	1.11684E+00	1.77000E-01	9.22178E-01	8.40064E-03
17	9.37371E-01	2.08167E-01	9.24553E-01	6.52684E-03
18	9.20047E-01	2.39333E-01	9.81177E-01	1.24627E-02
19	1.00235E+00	2.69833E-01	9.72604E-01	1.46302E-02
20	1.01781E+00	3.01500E-01	9.15854E-01	1.30744E-02
21	9.14254E-01	3.33333E-01	9.81950E-01	1.24143E-02
22	9.70047E-01	3.65000E-01	9.74923E-01	1.30081E-02
23	9.39288E-01	3.97000E-01	9.74440E-01	1.16451E-02
24	1.05287E+00	4.28667E-01	9.71239E-01	1.10090E-02
25	9.92274E-01	4.61667E-01	9.78042E-01	1.21358E-02
26	1.00877E+00	4.94500E-01	9.75598E-01	1.12713E-02
27	9.87391E-01	5.27000E-01	9.81682E-01	1.06412E-02
28	1.02254E+00	5.59167E-01	9.75022E-01	1.19134E-02
29	9.79298E-01	5.9167E-01	9.78286E-01	1.16018E-02
30	9.48423E-01	6.24667E-01	9.78345E-01	1.08981E-02
31	9.73256E-01	6.56633E-01	9.76687E-01	1.04078E-02
32	9.91929E-01	6.81500E-01	9.76506E-01	9.84648E-03
33	9.59217E-01	7.1667E-01	9.77277E-01	9.37296E-03
34	9.97455E-01	7.44167E-01	9.76798E-01	8.92834E-03
35	1.03387E+00	7.74500E-01	9.73193E-01	9.24473E-03
36	1.02371E+00	8.06000E-01	9.75831E-01	9.21916E-03
37	9.26263E-01	8.36333E-01	9.77826E-01	9.01933E-03
38	1.00853E+00	8.69000E-01	9.75764E-01	8.92150E-03
39	1.03150E+00	9.02333E-01	9.72024E-01	8.66365E-03
40	1.01499E+00	9.34167E-01	9.79042E-01	8.57731E-03
41	9.92274E-01	9.64167E-01	9.80322E-01	8.36441E-03
42	1.04287E+00	9.91667E-01	9.80688E-01	8.07597E-03
43	9.95763E-01	9.96833E-01	9.82759E-01	8.07531E-03
44	1.04417E+00	1.07867E+00	9.83210E-01	7.92324E-03
45	1.02206E+00	1.05923E+00	9.82623E-01	7.59756E-03
46	1.01241E+00	1.09083E+00	9.83816E-01	7.45977E-03
47	1.02724E+00	1.12183E+00	9.84657E-01	7.28575E-03
48	9.85355E-01	1.15333E+00	9.85180E-01	7.23647E-03
49	9.49242E-01	1.18270E+00	9.84490E-01	7.23270E-03
50	9.92782E-01	1.21350E+00	9.84078E-01	7.04657E-03
51	9.73774E-01	1.24567E+00	9.84254E-01	7.84082E-03
52	9.55251E-01	1.27800E+00	9.83985E-01	6.68807E-03
53	9.82722E-01	1.31234E+00	9.83267E-01	6.55812E-03
54	9.64237E-01	1.34450E+00	9.83352E-01	6.32680E-03
55	9.33136E-01	1.37667E+00	9.82897E-01	6.25920E-03
56	9.18745E-01	1.40717E+00	9.81740E-01	6.22050E-03
57	9.48528E-01	1.43633E+00	9.80312E-01	6.24282E-03
58	9.45977E-01	1.46450E+00	9.79606E-01	6.14326E-03
59	1.02254E+00	1.49233E+00	9.78875E-01	6.05258E-03
60	1.02254E+00	1.52050E+00	9.80075E-01	6.06224E-03
61	1.02254E+00	1.54867E+00	9.81017E-01	5.99011E-03
62	1.02254E+00	1.57683E+00	9.81122E-01	5.86753E-03
63	1.02254E+00	1.60450E+00	9.82007E-01	5.81666E-03
64	1.02254E+00	1.63267E+00	9.83022E-01	5.80525E-03
65	1.02254E+00	1.66083E+00	9.84054E-01	5.70222E-03

WARNING - ONLY 298 INDEPENDENT FISSION POINTS

1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00
1.00000E+00	1.00000E+00	1.00000E+00	1.00000E+00

KEN04LCM VER0.2.1

55	9.07263E-01	1.71867E+00	9.81231E-01	5.77901E-03	0.
56	1.01479E+00	1.74950E+00	9.81852E-01	5.70493E-03	0.
57	1.05103E+00	1.78233E+00	9.83110E-01	5.73973E-03	0.
58	9.73757E-01	1.81433E+00	9.82943E-01	5.63878E-03	0.
59	8.83487E-01	1.84653E+00	9.81286E-01	5.78154E-03	0.
60	9.85404E-01	1.87767E+00	9.81357E-01	5.68143E-03	0.
61	9.91840E-01	1.91067E+00	9.81534E-01	5.58713E-03	0.
62	9.35612E-01	1.94400E+00	9.80769E-01	5.54629E-03	0.
63	1.02940E+00	1.97533E+00	9.81570E-01	5.51303E-03	0.
64	8.97689E-01	2.00800E+00	9.80249E-01	5.58186E-03	0.
65	1.03027E+00	2.03917E+00	9.81043E-01	5.54963E-03	0.
66	9.85752E-01	2.07067E+00	9.81116E-01	5.46272E-03	0.
67	9.54110E-01	2.10133E+00	9.80701E-01	5.39405E-03	0.
68	9.93323E-01	2.13300E+00	9.80822E-01	5.31514E-03	0.
69	1.02141E+00	2.16433E+00	9.81497E-01	5.27003E-03	0.
70	9.60240E-01	2.19350E+00	9.81184E-01	5.20135E-03	0.
71	1.01217E+00	2.22583E+00	9.81633E-01	5.14505E-03	0.
72	9.96221E-01	2.25650E+00	9.81842E-01	5.07529E-03	0.
73	1.05173E+00	2.28917E+00	9.82826E-01	5.09922E-03	0.
74	9.35354E-01	2.32133E+00	9.82167E-01	5.07094E-03	0.
75	9.28547E-01	2.34883E+00	9.81434E-01	5.05445E-03	0.

THE VALUE -EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THE ARRAYS NEYMAX, NEZMAX, NEZMAX UNITS IN AN ARRAY.

314.004)02 RODS+H2O,118GJ5/L,+WEBB)

+ OR - 3.38916E-06

GENERATION TIME = 7.52551E-05 + OR - 1.79977E-06

AVERAGE EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL	NUMBER RODS
.95150	+ OR - .00512	.97637 TO .93662	.97125 TO .99175	.96612 TO .99687	21
.98115	+ OR - .00519	.97597 TO .98634	.97078 TO .99153	.96560 TO .99671	21
.95197	+ OR - .00526	.97572 TO .98623	.97046 TO .99149	.96520 TO .99674	21
.95067	+ OR - .00533	.97535 TO .98600	.97002 TO .99132	.96470 TO .99665	20
.98131	+ OR - .00537	.97594 TO .98668	.97058 TO .99204	.96521 TO .99741	20
.98222	+ OR - .00537	.97686 TO .98759	.97149 TO .99296	.96613 TO .99832	20
.98192	+ OR - .00544	.97648 TO .98736	.97104 TO .99280	.96560 TO .99824	19
.98137	+ OR - .00550	.97587 TO .98687	.97038 TO .99236	.96488 TO .99786	19
.98235	+ OR - .00549	.97686 TO .98784	.97136 TO .99333	.96587 TO .99883	19
.98254	+ OR - .00558	.97697 TO .98812	.97139 TO .99370	.96581 TO .99928	18
.98308	+ OR - .00560	.97748 TO .98868	.97188 TO .99428	.96628 TO .99983	17
.98300	+ OR - .00604	.97697 TO .98904	.97093 TO .99507	.96489 TO 1.00111	15
.98439	+ OR - .00615	.97824 TO .99054	.97209 TO .99668	.96594 TO 1.00283	14
.98551	+ OR - .00655	.97396 TO .98706	.96711 TO .99361	.96086 TO 1.00216	12
.98706	+ OR - .00708	.96998 TO .98414	.96291 TO .99122	.95583 TO .99830	11
.98767	+ OR - .00776	.97125 TO .98717	.96329 TO .99513	.95534 TO 1.00309	9
.98827	+ OR - .00835	.97552 TO .99322	.96668 TO 1.00206	.95783 TO 1.00221	8
.98979	+ OR - .01001	.97012 TO .99025	.96504 TO 1.00033	.94997 TO 1.00040	7
.99131	+ OR - .01087	.96549 TO .98713	.95468 TO .99725	.94386 TO 1.00878	6
.99282	+ OR - .01272	.97178 TO .99222	.95906 TO 1.00326	.94535 TO 1.00758	5
.99434	+ OR - .01512	.97729 TO 1.00258	.95701 TO 1.01771	.94182 TO 1.01576	4
.99585	+ OR - .01776	.98125 TO 1.01187	.89700 TO 1.05183	.89704 TO 1.01174	3

FOR THE EVALUATION DESCRIBED IN SECTION 3.4.b.2

KENO4LCM VERS.2.1 (10/30/77) 05/07/81 (8.07.15)

IS A CARD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

11111111112222222222333333333344444444445555555555666666666677777777778
1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,14X14X4,REFL,.3IN.U(4)02 RODS+POLY,37GU5/L,H/U=3,ACCIDT#WEBB)

4.8 85 301 3 123 80 17 9 41 14 1 14 14 4

-17 0 0 2000 0 1 1 1 42 22

1 10001 7.02437-3 1 60002 3.51214-3 1 80003 4.68497-3 1 -922351 9.48507-5

1 922381 2.24753-3

2 61002 .003921 2 240001 .083491

3 11001 8.1-4 3 81003 2.42-3 3 120005 4.1-4 3 130000 2.3-4 3 140005 5.2-4

3 190005 1.2-4 3 240001 9.-5 3 11001 1.-15 3 81003 1.-15

4 11001 .0085 4 61002 .0202 4 81003 .0355 4 140005 .0017 4 120005 .00186

4 260001 1.93-4 4 130000 5.5-4 4 190005 4.03-5 4 110000 1.63-5

5 11001 .072433 5 61002 .035716

6 130000 6.027-2

7 11001 3.33715-3 7 81003 1.66858-3

8 61002 3.1691-4 8 240003 1.6471-2 8 250005 1.7321-3 8 260001 6.036-2

8 280003 6.4834-3 8 140005 1.694-3

9 10001 1.-15 9 60002 1.-15 9 80003 1.-15 9 -922351 1.-15 9 922381 1.-15

CYLINDER 1 14.605 161.29 0. 123Z

CYLINDER 0 14.605 161.29 0. 123Z

CYLINDER 2 14.757 162.56 -3.3175 123Z

CYLINDER 7 14.757 172.098 -5.398 123Z

CYLINDER 7 25.248 172.098 -5.398 123Z

CYLINDER 2 25.4 172.25 -5.55 123Z

REFLECTOR 7 25.4 -25.4 25.4 -25.4 172.25 -5.55 123Z

REFLECTOR 4 6R30. 301

***** END OF INPUT LISTING *****

FILE=BPDS7, 14X14X4, REFL, .3IN.U(4)02 RODS+POLY, 37GUS/L, H/U=3, ACCID#WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME(MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.00186E+00	4.65000E-02	1.00000E+00	0.	0.
2	1.05203E+00	9.01667E-02	1.00000E+00	0.	0.
3	9.61967E-01	1.32667E-01	9.61967E-01	0.	0.
4	1.02080E+00	1.74833E-01	9.91382E-01	2.94149E-02	0.
5	9.07640E-01	2.15833E-01	9.63468E-01	3.26747E-02	0.
6	9.81058E-01	2.59333E-01	9.67855E-01	2.35189E-02	0.
7	9.05069E-01	3.03500E-01	9.55306E-01	2.21272E-02	0.
8	9.44735E-01	3.45833E-01	9.53544E-01	1.81525E-02	0.
9	1.02172E+00	3.92667E-01	9.63283E-01	1.81720E-02	0.
10	9.75127E-01	4.36000E-01	9.64764E-01	1.58069E-02	0.
11	1.05213E+00	4.81333E-01	9.74471E-01	1.69873E-02	0.
12	8.98531E-01	5.24167E-01	9.66877E-01	1.69860E-02	0.
13	9.60853E-01	5.66500E-01	9.66329E-01	1.53741E-02	0.
14	9.11928E-01	6.10167E-01	9.61802E-01	1.47469E-02	0.
15	1.00967E+00	6.52833E-01	9.65484E-01	1.40560E-02	0.
16	1.04995E+00	6.94333E-01	9.71517E-01	1.43438E-02	0.
17	9.27711E-01	7.38667E-01	9.68597E-01	1.36690E-02	0.
18	1.00416E+00	7.81367E-01	9.70820E-01	1.24780E-02	0.
19	1.01257E+00	8.26167E-01	9.73275E-01	1.24356E-02	0.
20	9.68624E-01	8.64500E-01	9.73020E-01	1.17271E-02	0.
21	9.37374E-01	9.06000E-01	9.71144E-01	1.12503E-02	0.
22	1.01353E+00	9.47667E-01	9.73268E-01	1.08823E-02	0.
23	9.40073E-01	9.89000E-01	9.71687E-01	1.04711E-02	0.
24	9.79776E-01	1.03017E+00	9.72055E-01	9.99060E-03	0.
25	9.24716E-01	1.07550E+00	9.69996E-01	9.76570E-03	0.
26	9.57428E-01	1.11900E+00	9.67475E-01	9.36449E-03	0.
27	9.92327E-01	1.16250E+00	9.70389E-01	9.02850E-03	0.
28	9.43775E-01	1.20550E+00	9.69365E-01	8.73448E-03	0.
29	9.43248E-01	1.24533E+00	9.68328E-01	8.46024E-03	0.
30	9.48108E-01	1.28750E+00	9.67673E-01	8.18463E-03	0.
31	9.76396E-01	1.32867E+00	9.67974E-01	7.90309E-03	0.
32	9.41353E-01	1.37133E+00	9.67037E-01	7.68646E-03	0.
33	1.00463E+00	1.41550E+00	9.68298E-01	7.53239E-03	0.
34	9.81295E-01	1.45967E+00	9.68704E-01	7.30451E-03	0.
35	9.56034E-01	1.50433E+00	9.68262E-01	7.09353E-03	0.
36	9.91980E-01	1.54433E+00	9.68959E-01	6.91700E-03	0.
37	9.79471E-01	1.58817E+00	9.69260E-01	6.72317E-03	0.
38	9.73184E-01	1.63167E+00	9.69359E-01	6.53466E-03	0.
39	1.03554E+00	1.67317E+00	9.71157E-01	6.60239E-03	0.
40	9.64942E-01	1.71400E+00	9.70993E-01	6.42837E-03	0.
41	9.95430E-01	1.76000E+00	9.71620E-01	6.29245E-03	0.
42	9.52985E-01	1.80367E+00	9.71154E-01	6.15093E-03	0.
43	9.18480E-01	1.84950E+00	9.69869E-01	6.13511E-03	0.
44	9.36492E-01	1.89233E+00	9.69027E-01	6.04621E-03	0.
45	9.56248E-01	1.93717E+00	9.68730E-01	5.91140E-03	0.
46	9.77997E-01	1.98100E+00	9.68941E-01	5.77933E-03	0.
47	9.06244E-01	2.02433E+00	9.67547E-01	5.61870E-03	0.
48	9.58997E-01	2.06617E+00	9.67361E-01	5.69384E-03	0.
49	9.47951E-01	2.11017E+00	9.66949E-01	5.58664E-03	0.
50	9.65413E-01	2.15350E+00	9.66917E-01	5.46911E-03	0.
51	9.86625E-01	2.19517E+00	9.67319E-01	5.37142E-03	0.
52	9.11163E-01	2.23883E+00	9.66196E-01	5.38140E-03	0.
53	9.42703E-01	2.28300E+00	9.65872E-01	5.28472E-03	0.
54	9.42473E-01	2.32483E+00	9.65422E-01	5.20159E-03	0.
55	9.71161E-01	2.37067E+00	9.65531E-01	5.10366E-03	0.

56	9.64435E-01	2.41250E+00	9.65510E-01	5.00822E-03	0.
57	9.35031E-01	2.45417E+00	9.65011E-01	4.94172E-03	0.
58	9.77777E-01	2.49517E+00	9.65226E-01	4.85745E-03	0.

72	1.72000E+00	9.71200E-01	5.62000E-03	0.
73	1.74000E+00	9.71500E-01	5.22000E-03	0.
74	1.80000E+00	9.71100E-01	5.15000E-03	0.
75	1.84000E+00	9.69500E-01	5.15511E-03	0.
76	1.89000E+00	9.69000E-01	5.04621E-03	0.
77	1.95000E+00	9.68700E-01	5.91167E-03	0.
78	1.98000E+00	9.68900E-01	5.77255E-03	0.
79	2.02000E+00	9.67500E-01	5.91870E-03	0.
80	2.05000E+00	9.67300E-01	5.62354E-03	0.
81	2.11000E+00	9.56700E-01	5.58664E-03	0.
82	2.15000E+00	9.55200E-01	5.65711E-03	0.
83	2.17000E+00	9.67519E-01	5.37142E-03	0.
84	2.23000E+00	9.66196E-01	5.38140E-03	0.
85	2.28000E+00	9.65872E-01	5.28472E-03	0.
86	2.32000E+00	9.65422E-01	5.20157E-03	0.
87	2.37000E+00	9.65531E-01	5.10366E-03	0.

KENO4LCM VERS.2.1 (10/30/77) 05/09/78.

56	9.64435E-01	2.41233E+00	9.65510E-01	5.00829E-03	0.
57	9.38030E-01	2.45417E+00	9.65011E-01	4.94172E-03	0.
58	9.77072E-01	2.49517E+00	9.65226E-01	4.85745E-03	0.
59	9.36756E-01	2.53833E+00	9.64727E-01	4.79754E-03	0.
60	9.62118E-01	2.58117E+00	9.64682E-01	4.71431E-03	0.
61	9.85893E-01	2.62517E+00	9.65041E-01	4.64764E-03	0.
62	9.77476E-01	2.66867E+00	9.65248E-01	4.57422E-03	0.
63	9.42463E-01	2.71283E+00	9.64920E-01	4.50605E-03	0.
64	1.01112E+00	2.75635E+00	9.65734E-01	4.49479E-03	0.
65	9.84678E-01	2.80000E+00	9.66034E-01	4.43308E-03	0.
66	9.76662E-01	2.84350E+00	9.66200E-01	4.36642E-03	0.
67	1.03272E+00	2.88707E+00	9.67224E-01	4.41885E-03	0.
68	9.59887E-01	2.93267E+00	9.67113E-01	4.35281E-03	0.
69	9.68747E-01	2.97533E+00	9.67137E-01	4.28742E-03	0.
70	9.61251E-01	3.01700E+00	9.67051E-01	4.22478E-03	0.
71	9.49169E-01	3.06050E+00	9.66791E-01	4.17116E-03	0.
72	9.54459E-01	3.10433E+00	9.66615E-01	4.11421E-03	0.
73	9.68115E-01	3.14533E+00	9.66636E-01	4.05660E-03	0.
74	9.97081E-01	3.18933E+00	9.67059E-01	4.02215E-03	0.
WARNING - ONLY 297 INDEPENDENT FISSION POINTS					
75	9.09406E-01	3.23317E+00	9.66269E-01	4.04453E-03	0.
76	9.58260E-01	3.27500E+00	9.66161E-01	3.99096E-03	0.
77	9.70225E-01	3.31577E+00	9.66225E-01	3.93790E-03	0.
78	9.27831E-01	3.35850E+00	9.65719E-01	3.91845E-03	0.
79	1.04768E+00	3.40083E+00	9.66784E-01	4.01104E-03	0.
80	9.23515E-01	3.44250E+00	9.66229E-01	3.92295E-03	0.
81	9.52027E-01	3.48433E+00	9.66049E-01	3.95112E-03	0.
82	9.31258E-01	3.52417E+00	9.65623E-01	3.92462E-03	0.
83	9.45380E-01	3.56550E+00	9.65373E-01	3.88321E-03	0.
84	9.48503E-01	3.61033E+00	9.65168E-01	3.84177E-03	0.
85	9.93622E-01	3.65233E+00	9.65510E-01	3.81065E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THERE ARE NEYMAX , NEYMAX , NEYMAX UNITS IN AN ARRAY.

... SIN... HZU 3, ACCIDENT...

OR - 1.281184

GENERATION TIME = 2.71525E-04

...	...	...	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	...	...
...	OR -	.00385	.96170 TO .96941	.95784 TO .97527	...	...
...	+ OR -	.00384	.96103 TO .96872	.95718 TO .97254	...	...
...	+ OR -	.00382	.96176 TO .96941	.95794 TO .97323	...	...
...	+ OR -	.00387	.96152 TO .96926	.95766 TO .97313	...	...
...	+ OR -	.00384	.96233 TO .97000	.95849 TO .97384	...	...
...	+ OR -	.00388	.96256 TO .97032	.95869 TO .97420	...	...
...	+ OR -	.00386	.96186 TO .96953	.95800 TO .97344	...	...
...	+ OR -	.00321	.96168 TO .96950	.95777 TO .97341	...	...
...	+ OR -	.00379	.96064 TO .96820	.95686 TO .97198	...	...
...	+ OR -	.00372	.96160 TO .96905	.95788 TO .97277	...	...
...	+ OR -	.00361	.96122 TO .96844	.95761 TO .97205	...	...
...	+ OR -	.00366	.95939 TO .96671	.95573 TO .97036	...	...
...	+ OR -	.00385	.95956 TO .96726	.95570 TO .97111	...	...
...	+ OR -	.00416	.96047 TO .96876	.95633 TO .97290	...	...
...	+ OR -	.00443	.95835 TO .96720	.95393 TO .97163	...	...
...	+ OR -	.00455	.95574 TO .96481	.95117 TO .96936	...	...
...	+ OR -	.00472	.95837 TO .96782	.95365 TO .97255	...	...
...	+ OR -	.00513	.95934 TO .96961	.95421 TO .97474	...	...
...	+ OR -	.00589	.96060 TO .97239	.95470 TO .97828	...	...
...	+ OR -	.00492	.95920 TO .97319	.95221 TO .98018	...	...
...	+ OR -	.00739	.95193 TO .96672	.94454 TO .97411	...	...
...	+ OR -	.01029	.94928 TO .96985	.93899 TO .98013	...	...
...	+ OR -	.01486	.94395 TO .97369	.92909 TO .98854	...	...
...	+ OR -	.01559	.94692 TO .97809	.93133 TO .99367	...	...

GENOGEN VERS. 2.1

... SIN... HZU 3, ACCIDENT...

... GENERATION ...

FOR THE EVALUATION DESCRIBED IN SECTION 3.4.c.1

KENOLCM VERS.2.1 (10/30/77) 05/21/80 09.53.26 PAGE

ADD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

11111111112222222222333333333344444444455555555666666667777777777
1234567890123456789012345678901234567890123456789012345678901234567890

TITLE (E5250, 6X2X2, REFL., 3IN. U(4)02 RODS+H2O, 118GUS/L, WEBB)

4.8 75 301 3 16 6 14 8 16 10 1 6 6 2
12 2 0 2000 0 4 1 1 4 2 3 4

SR1012 5012

1 - 1.
1 2 1.

2 100 1.
3 1101 .00081
3 8100 .00242
3 12100 .00041
3 13100 .00023
3 14100 .00052
3 19100 .00012
3 26100 .00009

3 501 1.-15

4 300 1.
5 401 1.

6 13100 .06027

7 501 1.-15

8 200 1.

+++++ MATERIAL 8 ZONE 1

0 +52676- 7 0 +14059- 6 0 +52122- 6 0 +23316- 6 5R+ 0+ 0 0 +44254- 7 0	1
0 +10112- 6 0 +52839- 6 0 +29719- 6 0 +91862- 7 4R+ + 0 0 +15076- 7 0	2
0 +17949- 7 0 +86094- 5 0 +59176- 6 0 +56387- 7 0 +35661- 7 3R+ 0+ 0	3
0 +14761- 7 0 +94496- 8 0 +97691- 6 0 +83047- 6 0 +20364- 6 0 +74145- 7 0	4
0 +61282- 7 2R+ 0+ 0 0 +16869- 7 0 +10385- 7 0 +11927- 5 0 +11182- 5 0	5
0 +12843- 6 0 +42703- 7 0 +49441- 7 0 +41131- 7 0 + 0+ 0 0 +41986- 7 0	6
0 +18617- 7 0 +13214- 5 0 +13074- 5 0 +57617- 7 0 +62482- 8 0 +77556- 8 0	7
0 +2738- 8 0 +54883- 8 0 +66402- 7 0 +30935- 7 0 +15699- 5 0 +14612- 5 0	8
0 +42035- 7 4R+ 0+ 0 0 +64141- 7 0 +58198- 7 0 +15607- 5 0 +14521- 5 0	9
0 +42290- 7 4R+ 0+ 0 0 +13112- 6 0 +13705- 6 0 +14786- 5 0 +13039- 5 0	10
0 +44516- 7 4R+ 0+ 0 0 +35251- 6 0 +24800- 6 0 +15442- 5 0 +11252- 5 0	11
0 +43586- 7 4R+ 0+ 0 0 +25265- 6 0 +22693- 6 0 +14483- 5 0 +11306- 5 0	12
0 +59519- 7 4R+ 0+ 0 0 +35266- 6 0 +18660- 6 0 +15389- 5 0 +11267- 5 0	13
0 +65525- 7 4R+ 0+ 0 0 +14293- 6 0 +21548- 6 0 +13487- 5 0 +11402- 5 0	14
0 +59574- 7 4R+ 0+ 0 0 +27544- 6 0 +50775- 6 0 +14688- 5 0 +11161- 5 0	15
0 +65577- 7 4R+ 0+ 0 0 +70686- 6 0 +12935- 5 0 +18571- 5 0 +11001- 5 0	16
0 +37284- 7 4R+ 0+ 0 0 +17137- 5 0 +32321- 5 0 +27465- 5 0 +10328- 5 0	17
0 +55551- 7 4R+ 0+ 0	18

.204 .544 .168 .18 .09 .014
0.0 0. 0. 0. 0. 0.

+++++ MATERIAL 6 ZONE 2

0 +92526- 8 0 + 0+ 0 0 +95080- 6 0 +21788- 6 7R+ 0+ 0 0 +12363- 5 0	1
0 +6505- 6 0 +43073- 6 6R+ 0+ 0 0 +22549- 5 0 +61333- 6 0 +37427- 6 0	2
0 +16454- 6 5R+ 0+ 0 0 +26814- 5 0 +91342- 6 0 +10025- 5 0 +33103- 6 0	3
0 +12464- 6 6R+ 0+ 0 0 +35613- 5 0 +19167- 5 0 +13574- 5 0 +47909- 6 0	4
0 +19880- 6 0 +52764- 7 3R+ 0+ 0 0 +61507- 5 0 +27309- 5 0 +16274- 5 0	5
0 +5457- 6 0 +13288- 6 0 +54794- 7 0 +20837- 7 2R+ 0+ 0 0 +74203- 5 0	6
0 +12264- 5 0 +28120- 5 0 +26135- 6 0 +57542- 7 0 +22146- 7 0 +11321- 7 0	7
0 +12368- 7 0 + 0+ 0 0 +77992- 5 0 +52690- 5 0 +34773- 5 0 +48218- 6 0	8

KENOLCM VERS.2.1 (10/30/77) 05/21/80 09.53.26 PAGE

ADD IMAGE LISTING OF THE INPUT DATA

COLUMN NUMBER

IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R

111111111122222222223333333333444444444455555555556666666666777777777788888888889999999999
 12345678901234567890123456789012345678901234567890123456789012345678901234567890

0 +45771- 7 0 +99678- 8 0 +49716- 8 0 +18587- 8 0 + 0+ 0 0 +78160- 5	9
0 +32872- 5 0 +37164- 5 0 +62549- 6 0 +86235- 7 0 +82388- 8 0 +22654- 8	10
0 +37450- 8 0 + 0+ 0 0 +78740- 5 0 +23304- 5 0 +31850- 5 0 +56569- 6	11
0 +26907- 7 0 +13843- 7 0 +18309- 8 0 +65292- 8 0 + 0+ 0 0 +78444- 5	12
0 +20931- 5 0 +37202- 5 0 +89219- 6 0 +16693- 6 0 +28284- 7 0 +57677- 8	13
0 +11699- 7 0 + 0+ 0 0 +78709- 5 0 +22303- 5 0 +40579- 5 0 +12728- 5	14
0 +31599- 6 0 +56569- 7 0 +13910- 7 0 +20910- 7 0 + 0+ 0 0 +78157- 5	15
0 +19670- 5 0 +37885- 5 0 +11277- 5 0 +36514- 6 0 +89219- 7 0 +24112- 7	16
0 +32674- 7 0 + 0+ 0 0 +92513- 5 0 +29411- 5 0 +35387- 5 0 +11062- 5	17
0 +33532- 6 0 +10861- 6 0 +44610- 7 0 +61621- 7 0 + 0+ 0 0 +12713- 4	18
0 +10203- 4 0 +47372- 5 0 +17118- 5 0 +55311- 6 0 +16790- 6 0 +73028- 7	19
0 +14324- 6 0 + 0+ 0 0 +23119- 4 0 +22975- 4 0 +24485- 5 0 +15403- 5	20
0 +57712- 6 0 +18110- 6 0 +55965- 7	21
2R+ 0+ 0 0 +95080- 6 0 +54357- 8 7R+ 0+ 0 0 +12363- 5 0 +20378- 7	1
0 +75328- 6 6R+ 0+ 0 0 +22549- 5 0 +18983- 6 0 +77300- 6 0 +17258- 6	2
5R+ 0+ 0 0 +26814- 5 0 +37923- 6 0 +18264- 5 0 +57873- 6 0 +12910- 6	3
4R+ 0+ 0 0 +38613- 5 0 +23247- 5 0 +23841- 5 0 +67253- 6 0 +21329- 6	4
0 +47562- 7 3R+ 0+ 0 0 +61507- 5 0 +39590- 5 0 +25005- 5 0 +31671- 6	5
0 +89490- 7 0 +28529- 7 0 +67946- 8 2R+ 0+ 0 0 +74303- 5 0 +47531- 5	6
0 +44277- 5 0 +12439- 6 1 +21748- 7 0 +67795- 8 0 +27171- 8 2R+ 0+ 0	7
0 +77972- 5 0 +48923- 5 0 +57727- 5 0 +34330- 6 0 +12358- 7 0 +13593- 8	8
2P+ 0+ 0 0 +78160- 5 0 +49378- 5 0 +61818- 5 0 +45208- 6 0 +26301- 7	9
0 +13731- 8 3R+ 0+ 0 0 +78740- 5 0 +30616- 5 0 +55734- 5 0 +43123- 6	10
0 +31993- 7 0 +13843- 8 3R+ 0+ 0 0 +78444- 5 0 +25360- 5 0 +69714- 5	11
0 +88802- 6 0 +70944- 7 0 +55640- 8 3R+ 0+ 0 0 +78709- 5 0 +26884- 5	12
0 +72183- 5 0 +13861- 5 0 +17844- 6 0 +13311- 7 0 +13210- 8 2R+ 0+ 0	13
0 +78157- 5 0 +22220- 5 0 +71259- 5 0 +12074- 5 0 +22189- 6 0 +27881- 7	14
0 +27821- 8 2R+ 0+ 0 0 +92513- 5 0 +56012- 5 0 +68892- 5 0 +12578- 5	15
0 + 227- 6 0 +33323- 7 0 +83643- 8 2R+ 0+ 0 0 +12713- 4 0 +14220- 4	16
0 +89579- 5 0 +20548- 5 0 +37623- 6 0 +62961- 7 0 +15448- 7 2R+ 0+ 0	17
0 +23119- 4 0 +17776- 4 0 +28441- 5 0 +84017- 6 0 +22304- 6 0 +39308- 7	18
0 +22754- 8	19

CF INDEX 1 12.224 62.358 .1575 162
 CF INDEX 5 12.237 62.409 .1448 162
 CF INDEX 6 12.381 62.545 0. 162
 CF INDEX 5 12.521 62.845 0. 162
 CF INDEX 0 14.605 160.494 0. 162
 CF INDEX 2 14.757 161.766 -.2525 162
 CF INDEX 5 14.757 176.537 -.2525 162
 CF INDEX 5 18.575 176.537 -13.8113 162
 CF INDEX 2 28.727 176.537 -13.8113 162

1 02.161 -05.161 05.161 -05.161 176.682 -13.8113 162

17 L00010, 2X6X2, REFL, .3IN.U(4)02 F0DS+H2O, 1180U5/L, WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME (MIN)	AVG. K-EFF	DEVIATION	MATRIX
1	1.25292E+00	2.10000E-02	1.00000E+00	0.	0.
2	1.05418E+00	4.23333E-02	1.00000E+00	0.	0.
3	9.72034E-01	6.31667E-02	9.72034E-01	0.	0.
4	9.56392E-01	8.53333E-02	9.64213E-01	7.82083E-03	0.
5	1.02807E+00	1.08500E-01	9.85497E-01	2.17580E-02	0.
6	1.02069E+00	1.31000E-01	9.94296E-01	1.77235E-02	0.
7	9.85547E-01	1.52833E-01	9.92546E-01	1.38376E-02	0.
8	1.02256E+00	1.74833E-01	9.97548E-01	1.23575E-02	0.
9	9.32512E-01	1.97167E-01	9.88257E-01	1.39785E-02	0.
10	1.00214E+00	2.19333E-01	9.89972E-01	1.22294E-02	0.
11	9.85678E-01	2.43500E-01	9.89513E-01	1.07200E-02	0.
12	9.91945E-01	2.67833E-01	9.89756E-01	9.65927E-03	0.
13	1.01031E+00	2.91667E-01	9.91670E-01	8.94433E-03	0.
14	9.54092E-01	3.16667E-01	9.88532E-01	8.74494E-03	0.
15	9.53322E-01	3.38000E-01	9.85830E-01	8.48796E-03	0.
16	9.70256E-01	3.50667E-01	9.84718E-01	7.93667E-03	0.
17	9.13622E-01	3.84500E-01	9.79978E-01	8.77818E-03	0.
18	9.48987E-01	4.0877E-01	9.78041E-01	8.43659E-03	0.
19	9.44062E-01	4.30333E-01	9.76042E-01	8.17297E-03	0.
20	9.52285E-01	4.52167E-01	9.75278E-01	7.74334E-03	0.
21	1.02136E+00	4.74500E-01	9.77703E-01	7.71565E-03	0.
22	1.04392E+00	4.98333E-01	9.81014E-01	8.03369E-03	0.
23	9.45229E-01	5.19833E-01	9.79314E-01	7.82854E-03	0.
24	1.00437E+00	5.42167E-01	9.80452E-01	7.55060E-03	0.
25	9.35933E-01	5.65833E-01	9.78517E-01	7.46999E-03	0.
26	1.00031E+00	5.89667E-01	9.79425E-01	7.20939E-03	0.
WARNING - ONLY 298 INDEPENDENT FISSION POI					
27	9.05522E-01	6.12167E-01	9.76469E-01	7.52056E-03	0.
28	9.58185E-01	6.34667E-01	9.75766E-01	7.25947E-03	0.
29	9.72031E-01	6.56633E-01	9.75627E-01	6.98680E-03	0.
30	1.00345E+00	6.80167E-01	9.75621E-01	6.80555E-03	0.
31	9.97071E-01	7.02000E-01	9.77326E-01	6.60444E-03	0.
32	9.40234E-01	7.24667E-01	9.76090E-01	6.49919E-03	0.
33	9.61202E-01	7.47667E-01	9.75609E-01	6.30436E-03	0.
34	9.46212E-01	7.71500E-01	9.74621E-01	6.17291E-03	0.
WARNING - ONLY 298 INDEPENDENT FISSION POI					
35	9.04736E-01	7.94333E-01	9.72572E-01	6.34686E-03	0.
36	9.21569E-01	8.16833E-01	9.72543E-01	6.15743E-03	0.
37	9.47094E-01	8.40333E-01	9.71816E-01	6.02297E-03	0.
38	9.76762E-01	8.63000E-01	9.71953E-01	5.85489E-03	0.
39	9.9217E-01	8.84000E-01	9.71358E-01	5.72551E-03	0.
40	9.91085E-01	9.06000E-01	9.71877E-01	5.9693E-03	0.
41	9.81683E-01	9.28500E-01	9.72128E-01	5.45732E-03	0.
42	1.02735E+00	9.50347E-01	9.73521E-01	5.40851E-03	0.
43	9.5398E-01	9.72833E-01	9.73581E-01	5.38245E-03	0.
44	1.01933E+00	9.96667E-01	9.75695E-01	5.5203E-03	0.
45	1.0119E+00	1.01900E+00	9.76529E-01	5.45220E-03	0.
46	9.35706E-01	1.04000E+00	9.75675E-01	5.40172E-03	0.
47	9.83660E-01	1.06317E+00	9.75785E-01	5.28148E-03	0.
48	9.82660E-01	1.08400E+00	9.74281E-01	5.3791E-03	0.
49	1.05078E+00	1.10867E+00	9.74850E-01	5.29476E-03	0.
50	9.76555E-01	1.13233E+00	9.74385E-01	5.18340E-03	0.
51	9.52041E-01	1.15500E+00	9.74419E-01	5.02788E-03	0.
52	9.77429E-01	1.17867E+00	9.73520E-01	5.07505E-03	0.
53	1.00461E+00	1.20317E+00	9.74130E-01	5.01175E-03	0.

9.2221E+00	1.22285E+00	9.75180E-01	5.02541E-03	0.
9.2221E+00	1.22285E+00	9.74855E-01	4.24042E-03	0.
9.2221E+00	1.22285E+00	9.74955E-01	4.24042E-03	0.

1.02875E+00	1.22683E+00	9.75180E-01	5.02541E-03	0.
9.57222E-01	1.24883E+00	9.74855E-01	4.94042E-03	0.
9.45102E-01	1.27167E+00	9.74378E-01	4.87147E-03	0.
9.50254E-01	1.29400E+00	9.73939E-01	4.80215E-03	0.
1.02651E+00	1.31733E+00	9.74914E-01	4.81525E-03	0.
9.54432E-01	1.33967E+00	9.74554E-01	4.74364E-03	0.
1.05552E+00	1.36300E+00	9.76002E-01	4.88077E-03	0.
9.72191E-01	1.38467E+00	9.76056E-01	4.7274E-03	0.
1.01114E+00	1.40767E+00	9.76641E-01	4.75310E-03	0.
1.01377E+00	1.43067E+00	9.77249E-01	4.71399E-03	0.
9.37118E-01	1.45267E+00	9.76602E-01	4.68229E-03	0.
8.88847E-01	1.47457E+00	9.75209E-01	4.81333E-03	0.
9.20849E-01	1.49733E+00	9.74360E-01	4.81306E-03	0.
9.59942E-01	1.52100E+00	9.74138E-01	4.74363E-03	0.
8.79526E-01	1.54450E+00	9.72704E-01	4.88621E-03	0.
9.47217E-01	1.56733E+00	9.72324E-01	4.82774E-03	0.
8.99431E-01	1.59067E+00	9.71277E-01	4.87552E-03	0.
9.34207E-01	1.61367E+00	9.70711E-01	4.83425E-03	0.
9.51313E-01	1.63737E+00	9.70438E-01	4.77274E-03	0.
1.00186E+00	1.66050E+00	9.70881E-01	4.72581E-03	0.
9.61475E-01	1.68400E+00	9.70750E-01	4.66155E-03	0.
9.25568E-01	1.70500E+00	9.70131E-01	4.63872E-03	0.

KENO4LCM VERS.2.1 (10/30/79) 5210

54	1.02875E+00	1.22683E+00	9.75180E-01	5.02541E-03	0.
55	9.57222E-01	1.24883E+00	9.74855E-01	4.94042E-03	0.
56	9.45102E-01	1.27167E+00	9.74378E-01	4.87147E-03	0.
57	9.50254E-01	1.29400E+00	9.73939E-01	4.80215E-03	0.
58	1.02651E+00	1.31733E+00	9.74914E-01	4.81525E-03	0.
59	9.54432E-01	1.33967E+00	9.74554E-01	4.74364E-03	0.
60	1.05552E+00	1.36300E+00	9.76002E-01	4.88077E-03	0.
61	9.72191E-01	1.38467E+00	9.76056E-01	4.7274E-03	0.
62	1.01114E+00	1.40767E+00	9.76641E-01	4.75310E-03	0.
63	1.01377E+00	1.43067E+00	9.77249E-01	4.71399E-03	0.
64	9.37118E-01	1.45267E+00	9.76602E-01	4.68229E-03	0.
65	8.88847E-01	1.47457E+00	9.75209E-01	4.81333E-03	0.
66	9.20849E-01	1.49733E+00	9.74360E-01	4.81306E-03	0.
67	9.59942E-01	1.52100E+00	9.74138E-01	4.74363E-03	0.
68	8.79526E-01	1.54450E+00	9.72704E-01	4.88621E-03	0.
69	9.47217E-01	1.56733E+00	9.72324E-01	4.82774E-03	0.
70	8.99431E-01	1.59067E+00	9.71277E-01	4.87552E-03	0.
71	9.34207E-01	1.61367E+00	9.70711E-01	4.83425E-03	0.
72	9.51313E-01	1.63737E+00	9.70438E-01	4.77274E-03	0.
73	1.00186E+00	1.66050E+00	9.70881E-01	4.72581E-03	0.
74	9.61475E-01	1.68400E+00	9.70750E-01	4.66155E-03	0.
75	9.25568E-01	1.70500E+00	9.70131E-01	4.63872E-03	0.

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT.
 THESE ARE NBXMAX . NBYMAX . NBZMAX UNITS IN AN ARRAY.

TITLE (BB250, 6X6X2, REFL, .3%N.U(4)02 RODS+H2O, 118GHS/L, #WEBB)

IFETIME = 1.7089E-04 + OR - 2.57094E-06

GENERATION TIME = 6.20300E-05 + OR - 1.42834E-06

NO. OF INITIAL GENERATIONS SKIPPED	AVERAGE K-EFFECTIVE	DEVIATION	67 PER CENT CONFIDENCE INTERVAL	95 PER CENT CONFIDENCE INTERVAL	99 PER CENT CONFIDENCE INTERVAL
3	.97010	+ OR - .00470	.96540 TO .97481	.96070 TO .97951	.95570 TO .98422
4	.97030	+ OR - .00477	.96553 TO .97506	.96077 TO .97983	.95500 TO .98446
5	.96947	+ OR - .00476	.96471 TO .97423	.95995 TO .97100	.95519 TO .98376
6	.96873	+ OR - .00477	.96396 TO .97350	.95919 TO .97827	.95441 TO .98305
7	.96848	+ OR - .00484	.96365 TO .97332	.95881 TO .97816	.95377 TO .98299
8	.96768	+ OR - .00484	.96284 TO .97252	.95800 TO .97736	.95315 TO .98220
9	.96821	+ OR - .00488	.96332 TO .97309	.95844 TO .97798	.95356 TO .98286
10	.96769	+ OR - .00493	.96275 TO .97262	.95782 TO .97755	.95289 TO .98248
11	.96741	+ OR - .00500	.96240 TO .97241	.95740 TO .97741	.95240 TO .98241
12	.96702	+ OR - .00507	.96195 TO .97208	.95688 TO .97715	.95182 TO .98221
17	.96758	+ OR - .00536	.96222 TO .97295	.95686 TO .97831	.95150 TO .98337
22	.96602	+ OR - .00556	.96046 TO .97159	.95490 TO .97715	.94933 TO .98272
27	.96683	+ OR - .00587	.96096 TO .97270	.95510 TO .97856	.94923 TO .98443
32	.96597	+ OR - .00642	.95955 TO .97240	.95312 TO .97882	.94670 TO .98525
37	.96858	+ OR - .00704	.96154 TO .97562	.95449 TO .98266	.94745 TO .98971
42	.96602	+ OR - .00784	.95818 TO .97386	.95034 TO .98170	.94250 TO .98754
47	.96194	+ OR - .00846	.95258 TO .96950	.94412 TO .97736	.93566 TO .98643
52	.96276	+ OR - .00976	.95301 TO .97252	.94325 TO .98128	.93349 TO .99203
57	.95850	+ OR - .0116	.94687 TO .97012	.93524 TO .98175	.92361 TO .99558
62	.96097	+ OR - .01099	.92910 TO .95108	.91810 TO .96207	.90711 TO .97506
67	.95157	+ OR - .01534	.92423 TO .95092	.91089 TO .96426	.89755 TO .97777
72	.95291	+ OR - .02204	.94093 TO .98501	.91889 TO 1.00704	.89688 TO 1.00000

FOR THE EVALUATION DESCRIBED IN SECTION 3.4.c.2

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THIS IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R
 11111111122222222233333333334444444445555555556666666667777777778
 1234567890123456789012345678901234567890123456789012345678901234567890

TITLE(BB250,5 4 2,REFL.,.3IN.U(4)02 RODS+H20,118GU5/L,2CANS-D,WEBB)
 4.8 75 301 3 16 6 14 8 16 10 1 5 4 2

12 2 0 2000 0 4 1 1 42 3 4
 SR1012 5012

1 -1 1.
 1 2 1.
 2 100 1.
 3 1101 .00081
 3 8100 .00242
 3 12100 .00041
 3 13100 .00023
 3 14100 .00052
 3 19100 .00012
 3 26100 .00009

3 501 1.-15
 4 300 1.
 5 401 1.

6 13100 .06027
 7 501 1.-15
 8 200 1.

+++++ MATERIAL 8 ZONE 1
 0 +52676- 7 0 +14059- 6 0 +52122- 6 0 +23316- 6 SR+ 0+ 0 0 +44254- 7 1
 0 +10112- 6 0 +52989- 6 0 +29219- 6 0 +91862- 7 4R+ 0+ 0 0 +15076- 7 2
 0 +17949- 7 0 +86094- 6 0 +59176- 6 0 +56887- 7 0 +35661- 7 3R+ 0+ 0 3
 0 +14761- 7 0 +94496- 8 0 +97691- 6 0 +83047- 6 0 +20364- 6 0 +74145- 7 4
 0 +61289- 7 2R+ 0+ 0 0 +16868- 7 0 +10885- 7 0 +11927- 5 0 +11182- 5 5
 0 +12543- 6 0 +42703- 7 0 +49441- 7 0 +41131- 7 0 + 0+ 0 0 +41986- 7 6
 0 +18617- 7 0 +13914- 5 0 +13074- 5 0 +57617- 7 0 +62482- 8 0 +77556- 8 7
 0 +69738- 8 0 +53383- 8 0 +66602- 7 0 +30935- 7 0 +15699- 5 0 +14612- 5 8
 0 +42035- 7 4R+ 0+ 0 0 +64141- 7 0 +58198- 7 0 +15607- 5 0 +14521- 5 9
 0 +42290- 7 4R+ 0+ 0 0 +13112- 6 0 +13705- 6 0 +14786- 5 0 +13039- 5 10
 0 +46514- 7 4R+ 0+ 0 0 +35251- 6 0 +26800- 6 0 +15447- 5 0 +11257- 5 11
 0 +43586- 7 4R+ 0+ 0 0 +25265- 6 0 +22693- 6 0 +14483- 5 0 +11306- 5 12
 0 +59519- 7 4R+ 0+ 0 0 +35266- 6 0 +18660- 6 0 +15389- 5 0 +11267- 5 13
 0 +65025- 7 4R+ 0+ 0 0 +14293- 6 0 +21563- 6 0 +13687- 5 0 +11602- 5 14
 0 +59574- 7 4R+ 0+ 0 0 +27544- 6 0 +50775- 6 0 +14688- 5 0 +1161- 5 15
 0 +65577- 7 4R+ 0+ 0 0 +70686- 6 0 +12935- 5 0 +18571- 5 0 +11001- 5 16
 0 +72183- 7 4R+ 0+ 0 0 +17132- 5 0 +32391- 5 0 +27465- 5 0 +10328- 5 17
 0 +50151- 7 4R+ 0+ 0 18
 .204 .344 .168 .18 .09 .014
 0.0 0. 0. 0. 0. 0.
 0.0 0. 0. 0. 0. 0.

+++++ MATERIAL 6 ZONE 2
 0 +20596- 8 0 + 0+ 0 0 +95080- 6 0 +21783- 6 7R+ 0+ 0 0 +32363- 5 1
 0 +26605- 6 0 +43078- 6 6R+ 0+ 0 0 +22549- 5 0 +61353- 6 0 +37427- 6 2
 0 +10464- 6 5R+ 0+ 0 0 +26914- 5 0 +91342- 6 0 +10025- 5 0 +33103- 6 3
 0 +10626- 6 4R+ 0+ 0 0 +38613- 5 0 +19167- 5 0 +13574- 5 0 +62902- 6 4
 0 +12880- 6 0 +62264- 7 3R+ 0+ 0 0 +61507- 5 0 +27309- 5 0 +16274- 5 5
 0 +34672- 6 0 +13688- 6 0 +54124- 7 0 +20897- 7 2R+ 0+ 0 0 +76303- 5 6
 0 +31824- 5 0 +28320- 5 0 +26155- 6 0 +57562- 7 0 +22145- 7 0 +11321- 7 7
 0 +43365- 7 0 + 0+ 0 0 +17172- 5 0 +32670- 5 0 +34775- 5 0 +48218- 6 8

IS A CARD IMAGE LISTING OF THE INPUT DATA

C O L U M N N U M B E R
11111111122222222222222333333333444444444555555555666666666777777777
1234567890123456789012345678901234567890123456789012345678901234567890

0	+45771-	7 0	+99678-	8 0	+49716-	8 0	+18587-	8 0	+	0+ 0 0	+78160-	5	9
0	+32872-	5 0	+37164-	5 0	+62549-	6 0	+86285-	7 0	+82388-	8 0	+22654-	8	10
0	+37450-	8 0	+	0+ 0 0	+78740-	5 0	+23304-	5 0	+31850-	5 0	+56569-	6	11
0	+96907-	7 0	+13843-	7 0	+18309-	8 0	+65292-	8 0	+	0+ 0 0	+78444-	5	12
0	+20931-	5 0	+37202-	5 0	+89219-	6 0	+16493-	6 0	+28284-	7 0	+57677-	8	13
0	+11699-	7 0	+	0+ 0 0	+78709-	5 0	+22303-	5 0	+40579-	5 0	+12728-	5	14
0	+31599-	6 0	+56569-	7 0	+13910-	7 0	+20910-	7 0	+	0+ 0 0	+78157-	5	15
0	+19670-	5 0	+37885-	5 0	+11277-	5 0	+36514-	6 0	+89219-	7 0	+21112-	7	16
0	+32674-	7 0	+	0+ 0 0	+92513-	5 0	+29411-	5 0	+35389-	5 0	+11062-	5	17
0	+33532-	6 0	+10861-	6 0	+44610-	7 0	+61621-	7 0	+	0+ 0 0	+12713-	4	18
0	+10203-	4 0	+47372-	5 0	+17118-	5 0	+55311-	6 0	+16790-	6 0	+73028-	7	19
0	+14324-	6 0	+	0+ 0 0	+23119-	4 0	+22975-	4 0	+24485-	5 0	+15403-	5	20
C	+57712-	6 0	+18110-	6 0	+55965-	7							21
2R+	0+ 0 0	+95080-	6 0	+54357-	8 7R+	0+ 0 0	+12363-	5 0	+20378-	7			1
0	+75828-	6 6R+	0+ 0 0	+22549-	5 0	+18983-	6 0	+77300-	6 0	+17258-	6		2
5R+	0+ 0 0	+26814-	5 0	+37923-	6 0	+18264-	5 0	+57873-	6 0	+12910-	6		3
4R+	0+ 0 0	+38613-	5 0	+23247-	5 0	+23841-	5 0	+67253-	6 0	+21329-	6		4
0	+47562-	7 3R+	0+ 0 0	+61507-	5 0	+39590-	5 0	+25005-	5 0	+31671-	6		5
0	+89490-	7 0	+28529-	7 0	+67946-	8 2R+	0+ 0 0	+74303-	5 0	+47531-	5		6
0	+46677-	5 0	+17439-	6 0	+21748-	7 0	+67795-	8 0	+27171-	8 2R+	0+ 0		7
0	+77992-	5 0	+48923-	5 0	+57727-	5 0	+34330-	6 0	+12358-	7 0	+13593-	8	8
3R+	0+ 0 0	+78160-	5 0	+49378-	5 0	+61818-	5 0	+45208-	6 0	+26301-	7		9
0	+13731-	8 3R+	0+ 0 0	+78740-	5 0	+30616-	5 0	+55734-	5 0	+43123-	6		10
0	+31997-	7 0	+13843-	8 3R+	0+ 0 0	+78444-	5 0	+25380-	5 0	+69714-	5		11
0	+88802-	6 0	+70944-	7 0	+55640-	8 3R+	0+ 0 0	+78709-	5 0	+26884-	5		12
0	+76183-	5 0	+13861-	5 0	+17844-	6 0	+13911-	7 0	+13910-	8 2R+	0+ 0		13
0	+78157-	5 0	+22220-	5 0	+71259-	5 0	+12074-	5 0	+22189-	6 7	+27881-	7	14
0	+27821-	8 2R+	0+ 0 0	+92513-	5 0	+56012-	5 0	+68892-	5 0	+12578-	5		15
0	+21267-	6 0	+39323-	7 0	+83443-	8 2R+	0+ 0 0	+12713-	4 0	+14220-	4		16
0	+89619-	5 0	+20548-	5 0	+37623-	6 0	+62961-	7 0	+15448-	7 2R+	0+ 0		17
0	+23119-	4 0	+17776-	4 0	+28441-	5 0	+84017-	6 0	+22304-	6 0	+39308-	7	18
0	+49956-	8											19

CYLINDER 1 12.224 62.388 .1575 16Z
 CYLINDER 5 12.237 62.400 .1448 16Z
 CYLINDER 6 12.381 62.565 0. 16Z
 CYLINDER 5 12.381 62.845 0. 16Z
 CYLINDER 0 14.605 160.496 0. 16Z
 CYLINDER 2 14.757 161.766 -.9525 16Z
 CYLINDER 7 14.757 172.098 -.9525 16Z
 CYLINDER 7 25.248 172.098 -5.328 16Z
 CYLINDER 2 25.4 172.25 -5.55 16Z
 CUEOID 7 25.4 -25.4 25.4 -25.4 172.25 -5.55 16Z
 1 0. 0. 31.

END OF INPUT LISTING

TITLE (RR,50,5 4 2,REFL.,.31N,U(4)G2 RODS+H2O,118GU5/L,2CANS-U,=WEBB)

GENERATION	K-EFFECTIVE	ELAPSED TIME (MIN)	AVG. K-EFF	DEVIATION	MATRIX K-EFF
1	1.27356E+00	2.03333E-02	1.00000E+00	0.	0.
2	1.10307E+00	4.00000E-02	1.00000E+00	0.	0.
3	1.04587E+00	5.96667E-02	1.04587E+00	0.	0.
4	9.08555E-01	7.96667E-02	1.17213E-01	6.86583E-02	0.
5	9.14684E-01	9.95000E-02	9.56370E-01	4.47857E-02	0.
6	9.97848E-01	1.19000E-01	9.66740E-01	3.33228E-02	0.
7	9.06063E-01	1.37500E-01	9.54604E-01	2.85221E-02	0.
8	1.03749E+00	1.57333E-01	9.68476E-01	2.70761E-02	0.
9	9.70430E-01	1.76667E-01	9.68711E-01	2.28853E-02	0.
10	9.20673E-01	1.96500E-01	9.62706E-01	2.07090E-02	0.
11	9.57303E-01	2.16000E-01	9.62106E-01	1.82735E-02	0.
12	9.54055E-01	2.35667E-01	9.61301E-01	1.63641E-02	0.
13	9.72852E-01	2.55833E-01	9.62351E-01	1.48391E-02	0.
14	9.96739E-01	2.75667E-01	9.65217E-01	1.38460E-02	0.
15	1.03020E+00	2.95167E-01	9.70215E-01	1.36822E-02	0.
16	1.07609E+00	3.16333E-01	9.77777E-01	1.47529E-02	0.
17	9.58981E-01	3.35933E-01	9.76524E-01	1.7912E-02	0.
18	9.16008E-01	3.55000E-01	9.72743E-01	1.34435E-02	0.
19	9.08467E-01	3.74333E-01	9.68961E-01	1.31819E-02	0.
20	9.82600E-01	3.94167E-01	9.69211E-01	1.24511E-02	0.
21	9.46566E-01	4.14000E-01	9.68500E-01	1.18404E-02	0.
22	1.05829E+00	4.34000E-01	9.72990E-01	1.20968E-02	0.
23	9.25538E-01	4.53000E-01	9.70730E-01	1.17261E-02	0.
24	9.99641E-01	4.72667E-01	9.72044E-01	1.12573E-02	0.
25	9.97603E-01	4.92667E-01	9.73156E-01	1.08140E-02	0.
26	9.98353E-01	5.12667E-01	9.74205E-01	1.04067E-02	0.
27	9.37869E-01	5.30500E-01	9.72752E-01	1.00870E-02	0.
28	9.69505E-01	5.50833E-01	9.72627E-01	9.69213E-03	0.
29	1.07943E+00	5.71167E-01	9.76585E-01	1.01312E-02	0.
30	9.61903E-01	5.91500E-01	9.76060E-01	9.77672E-03	0.
31	1.00274E+00	6.11333E-01	9.76980E-01	9.47831E-03	0.
32	1.07162E+00	6.31833E-01	9.80135E-01	9.68505E-03	0.
33	1.01464E+00	6.52667E-01	9.81248E-01	9.43333E-03	0.
34	1.00755E+00	6.72500E-01	9.82070E-01	9.17069E-03	0.
35	9.54690E-01	6.91500E-01	9.81240E-01	8.92709E-03	0.
36	9.85847E-01	7.11167E-01	9.81376E-01	8.66161E-03	0.
37	9.37843E-01	7.30000E-01	9.80132E-01	8.50197E-03	0.
38	1.04712E+00	7.50167E-01	9.81993E-01	8.44938E-03	0.
39	9.81506E-01	7.69167E-01	9.81980E-01	8.23731E-03	0.
40	9.13801E-01	7.88167E-01	9.80185E-01	8.21591E-03	0.
41	9.79505E-01	8.07833E-01	9.80168E-01	8.00249E-03	0.
42	8.27959E-01	8.26500E-01	9.76363E-01	8.67856E-03	0.
43	9.22448E-01	8.47000E-01	9.76023E-01	8.47104E-03	0.
44	9.57414E-01	8.66167E-01	9.75580E-01	8.27876E-03	0.
45	9.90876E-01	8.85333E-01	9.75935E-01	8.09172E-03	0.
46	9.53546E-01	9.03500E-01	9.75421E-01	7.92204E-03	0.
47	9.80622E-01	9.23667E-01	9.75541E-01	7.74485E-03	0.
48	1.03357E+00	9.42833E-01	9.76905E-01	7.67895E-03	0.
49	9.72882E-01	9.62333E-01	9.76723E-01	7.51626E-03	0.
50	9.72130E-01	9.82000E-01	9.76624E-01	7.35667E-03	0.
51	9.46405E-01	1.00083E+00	9.76007E-01	7.23131E-03	0.
52	9.35140E-01	1.01967E+00	9.75190E-01	7.13220E-03	0.
53	1.04909E+00	1.04033E+00	9.76639E-01	7.13952E-03	0.
54	1.03157E+00	1.05917E+00	9.77695E-01	7.08013E-03	0.

WARNING - ONLY 287 INDEPENDENT FISSION FOI

55	9.46216E-01	1.07253E+00	9.77856E-01	6.94712E-03	0.
56	1.03752E+00	1.09250E+00	9.78262E-01	6.90440E-03	0.
57	8.21706E-01	1.11717E+00	9.77012E-01	7.05456E-03	0.

				WARNING - ONLY	
51	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
52	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
53	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
54	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
55	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
56	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
57	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
58	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
59	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
60	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
61	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
62	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
63	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
64	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
65	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
66	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
67	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
68	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
69	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
70	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
71	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
72	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
73	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
74	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.
75	9.7219E-01	8.22510E-01	9.76563E-01	8.47874E-01	0.

KENO4LCM VERS.2.1 (10/30/77) 05722

55	9.86216E-01	1.07933E+00	9.77856E-01	6.94712E-03	0.
56	1.03759E+00	1.09950E+00	9.78952E-01	6.90540E-03	0.
57	8.71706E-01	1.11717E+00	9.77012E-01	7.05456E-03	0.
58	9.97577E-01	1.13733E+00	9.77379E-01	6.93717E-03	0.
59	1.00465E+00	1.15633E+00	9.77858E-01	6.83116E-03	0.
60	1.00039E+00	1.17517E+00	9.78246E-01	6.72358E-03	0.
61	9.30750E-01	1.19350E+00	9.77441E-01	6.65749E-03	0.
62	9.48539E-01	1.21233E+00	9.76960E-01	6.56329E-03	0.
63	1.03876E+00	1.23300E+00	9.77973E-01	6.53381E-03	0.
64	9.64400E-01	1.25317E+00	9.77754E-01	6.43179E-03	0.
65	9.91264E-01	1.27283E+00	9.77968E-01	6.33202E-03	0.
66	9.63414E-01	1.29200E+00	9.77741E-01	6.23644E-03	0.
67	9.73348E-01	1.31167E+00	9.77673E-01	6.14012E-03	0.
68	9.16901E-01	1.32983E+00	9.76752E-01	6.11608E-03	0.
69	9.74975E-01	1.34950E+00	9.76726E-01	6.02417E-03	0.
70	1.02211E+00	1.37000E+00	9.77407E-01	5.97332E-03	0.
71	9.38373E-01	1.38917E+00	9.76837E-01	5.91322E-03	0.
72	9.24693E-01	1.40883E+00	9.76092E-01	5.87555E-03	0.
73	9.52490E-01	1.42867E+00	9.75759E-01	5.80174E-03	0.
74	1.07500E+00	1.44883E+00	9.77138E-01	5.88431E-03	0.
75	9.27793E-01	1.46783E+00	9.76462E-01	5.84238E-03	0.

WARNING - ONLY 298 INDEPENDENT FISSION POI

THE MATRIX K-EFF IS THE LARGEST EIGENVALUE OF THE MATRIX OF FISSION PROBABILITIES BY UNIT. THERE ARE NBXMAX , NBYMAX , NBZMAX UNITS IN AN ARRAY.

KENO4LCM VERS.2.1 (10/30/79) 05/22/80 17.02.03

5 4 2, REFL, .3IN.U(4)02 RODS+H2O, 118GU5/L, 2CANS-D, WEBB)

1.01109E-04 + OR - 1.88263E-06

GENERATION TIME = 5.12882E-05 + OR - 1.04,26E-06

K-EFFECTIVE	AVERAGE DEVIATION	67 PER CENT CONFIDENCE INTERVAL		95 PER CENT CONFIDENCE INTERVAL		99 PER CENT CONFIDENCE INTERVAL		NUMBER OF HISTORIES
.97550	+ OR - .03584	.96965	TO .98134	.96381	TO .98718	.95797	TO .99303	21672
.97644	+ OR - .00585	.97059	TO .98229	.96474	TO .98814	.95890	TO .99398	21371
.97732	+ OR - .00586	.97146	TO .98319	.96559	TO .98705	.95973	TO .99492	21070
.97703	+ OR - .00594	.97108	TO .98297	.96514	TO .98891	.95920	TO .99485	20769
.97807	+ OR - .00594	.97213	TO .98401	.96620	TO .98994	.96026	TO .99588	20448
.97718	+ OR - .00596	.97122	TO .98314	.96527	TO .98910	.95931	TO .99506	20167
.97728	+ OR - .00605	.97124	TO .98333	.96519	TO .98938	.95914	TO .99543	19866
.97815	+ OR - .00608	.97208	TO .98423	.96600	TO .99031	.95992	TO .99639	19565
.97848	+ OR - .00617	.97232	TO .98465	.96615	TO .99081	.95999	TO .99698	19264
.97887	+ OR - .00625	.97262	TO .98512	.96637	TO .99137	.96011	TO .99762	18963
.97645	+ OR - .00649	.96995	TO .98294	.96346	TO .98944	.95696	TO .99593	17458
.97777	+ OR - .00669	.97108	TO .98447	.96439	TO .99116	.95769	TO .99785	15953
.97839	+ OR - .00723	.97117	TO .98562	.96394	TO .99285	.95671	TO 1.00008	14448
.97390	+ OR - .00733	.96657	TO .98123	.95923	TO .98857	.95120	TO .99590	12943
.97308	+ OR - .00811	.96497	TO .98119	.95686	TO .98930	.94875	TO .99741	11438
.97658	+ OR - .00766	.96893	TO .98424	.96127	TO .99190	.95361	TO .99955	9953
.97734	+ OR - .00825	.96899	TO .98682	.96004	TO .99584	.95109	TO 1.00479	8428
.97323	+ OR - .01038	.96885	TO .98961	.95847	TO .99999	.94809	TO 1.01037	6923
.97478	+ OR - .01015	.96463	TO .98493	.95448	TO .99508	.94433	TO 1.00523	5418
.97416	+ OR - .01311	.96105	TO .98728	.94724	TO 1.00039	.93482	TO 1.01351	3913
.96662	+ OR - .01968	.94693	TO .98630	.92725	TO 1.00599	.90757	TO 1.02567	2408
.98510	+ OR - .04552	.93958	TO 1.03061	.89406	TO 1.07613	.84855	TO 1.12154	903